

Information Technology Project Management

Fourth Edition

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Appendix A

Guide to Using Microsoft Project 2003

- Introduction A.2
- New Features of Project 2003 A.3
- Before You Begin A.7
- Overview of Project 2003 A.8
 - Starting Project 2003 and the Project Help Window A.8
 - Main Screen Elements A.12
 - Project 2003 Views A.20
 - Project 2003 Filters A.25
- Project Scope Management A.28
 - Creating a New Project File A.28
 - Developing a Work Breakdown Structure A.30
 - Saving Project Files With or Without a Baseline A.34
- Project Time Management A.38
 - Entering Task Durations A.38
 - Establishing Task Dependencies A.43
 - Changing Task Dependency Types and Adding Lead or Lag Time A.46
 - Gantt Charts A.49
 - Network Diagrams A.52
 - Critical Path Analysis A.54
- Project Cost Management A.56
 - Fixed and Variable Cost Estimates A.57
 - Assigning Resources to Tasks A.61
 - Baseline Plan, Actual Costs, and Actual Times A.69
 - Earned Value Management A.75
- Project Human Resource Management A.77
 - Resource Calendars A.77
 - Resource Histograms A.80
 - Resource Leveling A.84

- Project Communications Management A.87
 - Common Reports and Views A.87
 - Using Templates and Inserting Hyperlinks and Comments A.88
 - Saving Files as Web Pages A.93
 - Using the Copy Picture to Office Wizard A.96
 - Discussion Questions A.97
 - Suggested Readings A.98
- Exercises A.98
 - Exercise A-1: Web Site Development A.99
 - Exercise A-2: Software Training Program A.100
 - Exercise A-3: Project Tracking Database A.103
 - Exercise A-4: Real Project Application A.105
 - Additional Running Cases A.105

INTRODUCTION

This appendix provides a concise guide to using Microsoft Office Project Standard 2003 (often referred to as Project Standard 2003 or, simply, Project 2003) to assist in performing project management. Project 2003 can help users manage different aspects of all nine project management knowledge areas. Most users, however, focus on using Project 2003 to assist with scope, time, cost, human resource, and communications management. This guide uses these project management knowledge areas as the context for learning how to use Project 2003. Refer to chapters on the other knowledge areas for suggestions on using software to assist in those areas. Also, note the basic order of the steps in this appendix. It is good practice to first determine the scope of a project, then the time, and then the resource and cost information. You can then set a baseline and enter actuals to track and communicate performance.

Hundreds of project management software products are available today. Microsoft Project is the clear market leader among midrange applications. A 2003 survey by TechRepublic showed that 94 percent of their 397 respondents used Microsoft Project compared to 86 percent of respondents in their 2000 study.¹

Before you can use Project 2003 or any project management software effectively, you must understand the fundamental concepts of project management, such as creating work breakdown structures, linking tasks, entering duration estimates, and so on. See the Suggested Readings for recommendations on other resources to help you gain an even deeper understanding of Project 2003.

¹Blakely, Beth. "Survey shows little change in consultants' use, satisfaction with PM software," TechRepublic, 2/3/03 (http://techrepublic.com.com/5100-6330_11-5031832.html).

NEW FEATURES OF PROJECT 2003

Because there have been several previous versions of Microsoft Project, it is useful to understand some of the new capabilities of Project 2003, especially if you are working with people who are upgrading from a previous version.

With the introduction of Project 2002, Microsoft provided two versions of Project—a standard version and an enterprise version. The same is true for Project 2003.

1. **Microsoft Office Project Standard 2003**, or simply Project 2003, is most similar to previous versions of Microsoft Project and is intended for individual desktop usage. Project 2002 Standard included a Client Access License (CAL) for connection to Project Server 2002 via the Web, but Project Standard 2003 does not. You must be using Project Professional 2003 to connect to Project Server 2003, as described below. Also note that Project 2002 can open, work with, and save Project 2003 files, so you don't have to save files in Project 2002 format from Project 2003. This appendix focuses on using the standard version of Project 2003.
2. **The Microsoft Enterprise Project Management (EPM) Solution** is a complete database and analysis software package that helps organizations plan and manage projects on an enterprise level. It includes several components, such as Microsoft Office Project Professional 2003 (which includes all of the capabilities of Project Standard 2003 plus more features), Project Web Access, Project Server 2003, Microsoft Windows SharePoint Services, and Microsoft SQL Server. Project Web Access is the Web portal to Project Server 2003 that provides an easy-to-use interface with a customized home page and functions that are based on each user's role on the project. Project Web Access users do not have to install Project Professional 2003; they just need a Client Access License (CAL) and a Web browser. Organizations should develop and apply many standards, templates, codes, and procedures before using the enterprise version of Project 2003 to make the best use of its capabilities. In fact, Microsoft provides a template file for implementing their EPM solution, and the schedule goal in the template file is about six months.

Figures A-1, A-2, and A-3 provide sample screens from the Microsoft EPM Solution taken from an online tour available from Microsoft's Web site. Figure A-1 shows the customized home page that an executive would see when using his or her Client Access License. Figure A-2 shows an executive summary view of all of the projects at this company. Figure A-3 shows a sample screen available from the portfolio analyzer. The reporting and analysis capabilities in the EPM solution help organizations use information from many projects and team members to optimize resources, prioritize work, and align project portfolios with overall business objectives. For more information

on the Microsoft Office EPM Solution, contact Microsoft or visit their Web site at www.microsoft.com/project.

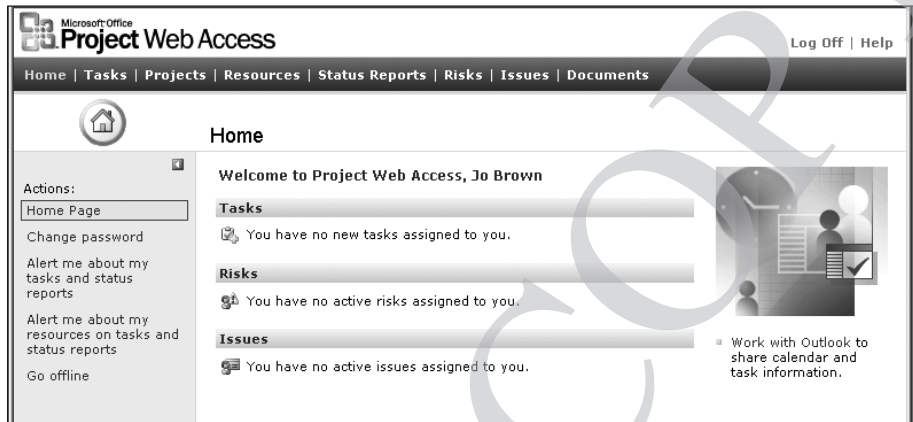


Figure A-1. Sample Project Web Access Home Page

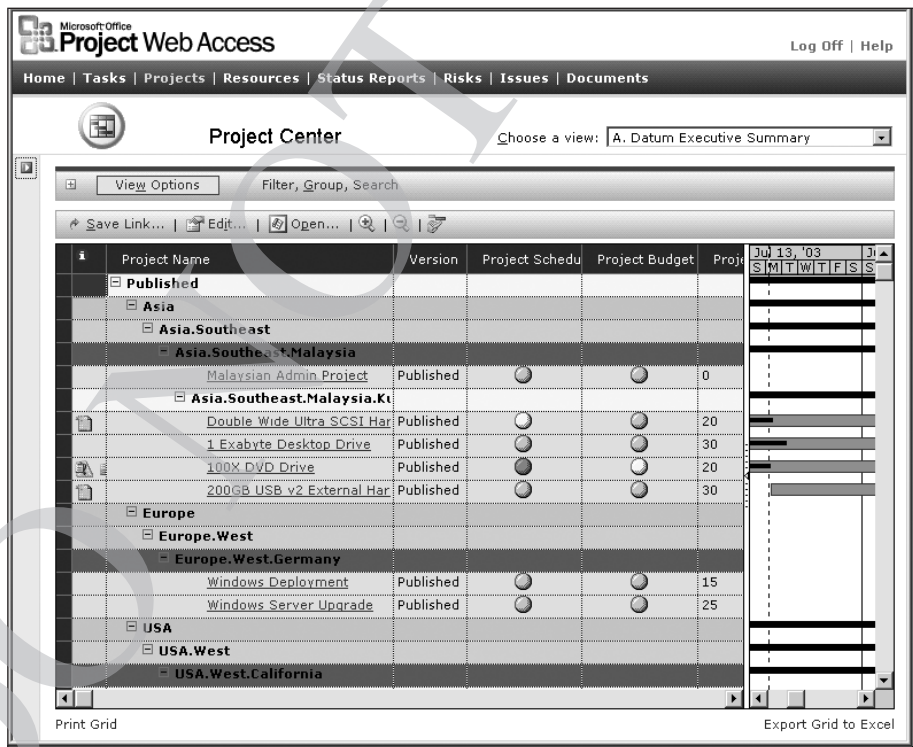


Figure A-2. Sample Project Web Access Project Center Screen

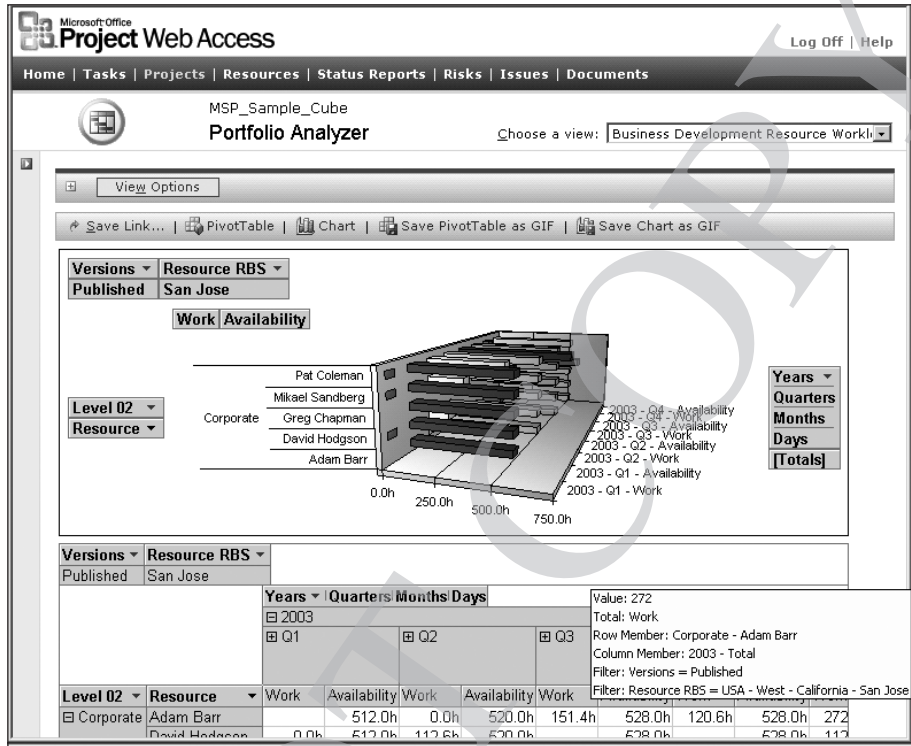


Figure A-3. Sample Project Web Access Portfolio Analyzer Screen

Figure A-4 provides an overview of using either Microsoft Office Project Standard 2003 (Project 2003) or the Microsoft Office EPM Solution. Remember that Project 2003 is a stand-alone product that enables users to plan and manage projects with familiar, easy-to-use tools. Project Professional 2003, Project Web Access, Project Server 2003, and Microsoft SQL Server work together to make up the Microsoft Office EPM Solution, which should have many users.

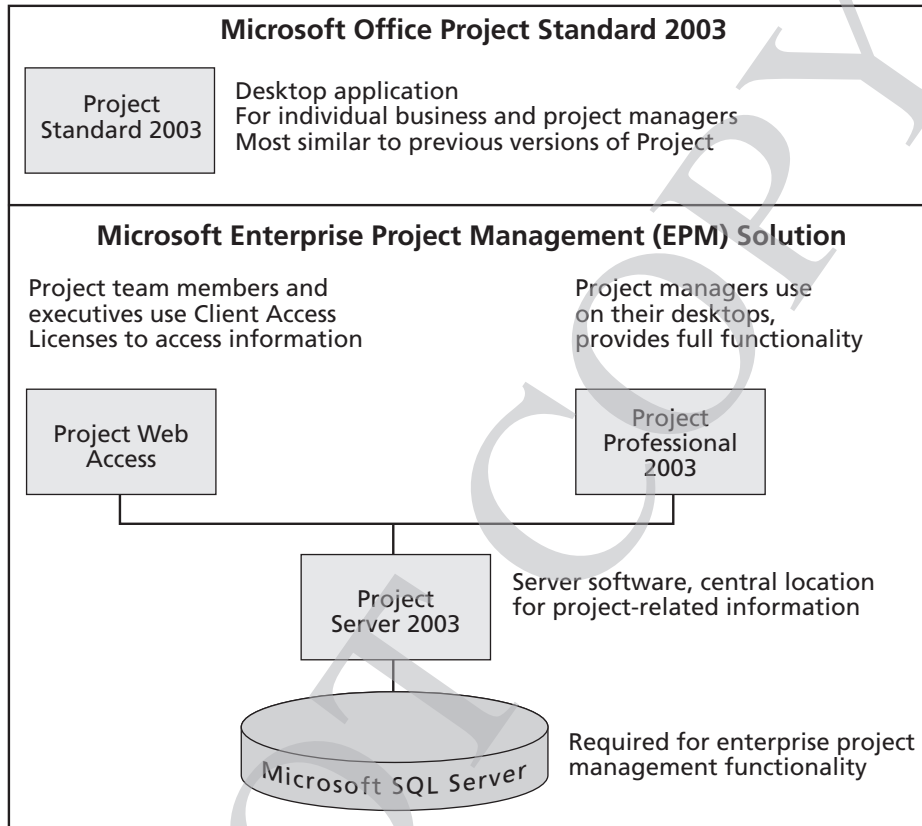


Figure A-4. Microsoft Office Project Standard 2003 Versus Microsoft Enterprise Project Management (EPM) Solution

There are also several new and improved features available in Project 2003:

- New ability to manage proposed and committed resources
- New shared workspace for storing non-Project files (including check-in and versioning)
- Backward and forward compatibility so users of previous and future versions of Project can easily share files
- New features for sharing data between Project and Excel, PowerPoint, and Visio, including the new Copy Picture to Office Wizard
- New online Help for up-to-date information and assistance via the Web
- New Euro currency converter toolbar

- Improved ability to create one-page printouts of project plans easily
- New calendar and tracking setup wizards
- Improved Project Guide, which is an interactive Help tool
- No more requirement that a developer hard-code paths for files used in customizing the Project Guide
- Enhanced developer tools for integration with Microsoft Office

BEFORE YOU BEGIN

This appendix assumes you are using Project 2003 with Windows 2000 or XP and are familiar with other Windows-based applications. You can check your work using the solution files that are available for download from the companion Web site for this text (www.course.com/mis/schwalbe4e) or from your instructor.

The CD-ROM in the back of this text includes a 120-day trial version of Project 2003. You need to be running Windows 2000 or Windows XP to use this software. If you have any technical difficulties, contact Course Technology's Support Services at www.course.com/support. You can also download or order evaluation copies of Project 2003 from www.microsoft.com/project. Also note that students and faculty can purchase software at deep discounts from several sources, such as www.journeyed.com.

This appendix uses a fictitious information technology project—the Project Tracking Database project—to illustrate how to use the software. The goal of this project is to create a database to keep track of all the projects a company is working on. Each section of the appendix includes hands-on activities through which you will work. To complete the hands-on activities in the appendix, you will need to create a Data Disk or copy files to a location on your hard drive or network drive. You will need to copy a set of files from a file server or from the companion Web site for this text (www.course.com/mis/schwalbe4e). When you begin each set of steps, make sure you are using the correct file from your Data Disk, hard drive, or network drive. You should have the following files before you begin your work:

- PRJ03DPL.mpp, the Project 2003 Deployment template file that comes with the software
- resource.mpp
- tracking.mpp
- kickoffmeeting.doc

In addition, you will create the following files from scratch as you work

through the steps:

- scope.mpp
- time.mpp
- tracking.mpp
- baseline.mpp
- level.mpp
- taskinfo.html


Now that you understand project management concepts and the basic project management terminology, you will learn how to start Project 2003, review the Help facility and a template file, and begin to plan the Project Tracking Database project.

OVERVIEW OF PROJECT 2003

The first step to mastering Project 2003 is to become familiar with the Help facility, online tutorials, major screen elements, views, and filters. This section describes each of these features.

Starting Project 2003 and Using the Getting Started and Project Guide Features

To start Project 2003:

1. *Open Project 2003.* Click the **Start** button on the taskbar, click **Programs**, and then click **Microsoft Office Project 2003**. (If you are using Windows XP, point to **All Programs**, point to **Microsoft Office**, and then click **Microsoft Office Project 2003**.) Alternatively, a shortcut or icon might be available on the desktop; in this case, double-click the icon to start the software.
2. *Maximize Project 2003.* If the Project 2003 window does not fill the entire screen as shown in Figure A-5, click the **Maximize** button  in the upper-right corner of the window.

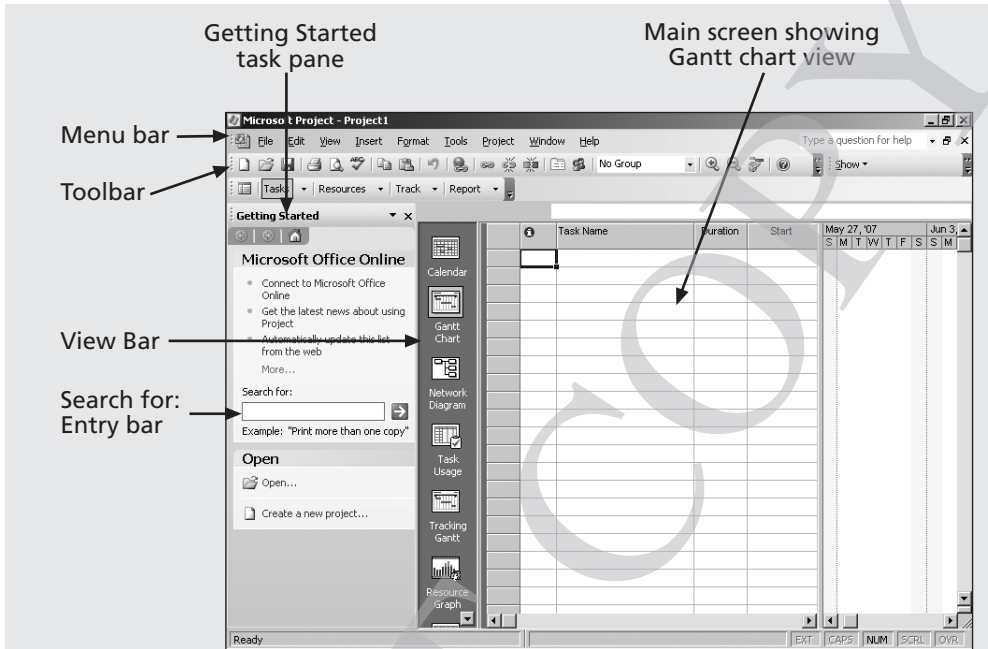


Figure A-5. Getting Started Task Pane and Project 2003 Main Screen



If the View Bar is not open, click View on the menu bar, and then click View Bar.



Do not worry if your toolbars or other screen elements look slightly different from Figure A-5. Focus on the Project 2003 main screen and the Getting Started task pane.

Project 2003 is now running and ready to use. Notice some of the elements of the Project 2003 screen. The default view is the Gantt Chart view, which shows tasks and other information in the Entry table as well as a calendar display. You can access other views by clicking each button in the View Bar on the left side of the screen. Also notice that when Project 2003 starts, it opens a new file named Project1, as shown in the title bar. If you open a second file, the name will be Project2, and so on, until you save and rename the file.

When you start Project 2003, the Getting Started task pane automatically opens, as shown in Figure A-5. You can access Microsoft Office Online, search for help on various topics, or open files from this pane. If you were used to seeing the Project Guide when starting Project 2002, you may notice that you now access the new Project Guide from the Project Guide toolbar, as shown in

Figure A-6. The Project Guide helps you learn Project 2003 by providing instructions for completing various steps in building a Project 2003 file.

To use the Project Guide:

1. *Open the Project Guide.* Click the **Tasks** list arrow on the Project Guide toolbar, as shown in Figure A-6. Notice the various options listed. The Resources, Track, and Report buttons on the Project Guide toolbar list additional options. You'll use some of these options later in this appendix.

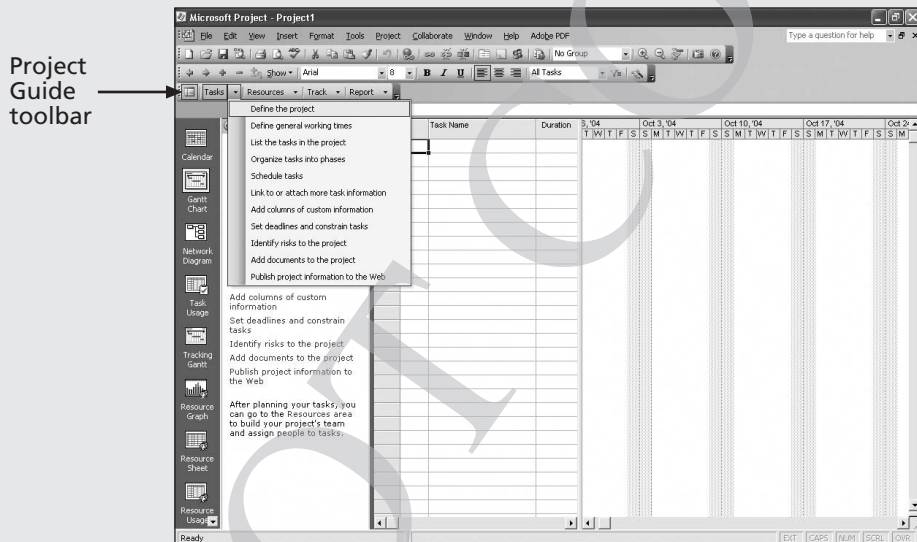



Figure A-6. Using the Project Guide

2. *Set the project start date.* Click **Define the project**.
3. *Review the Project Guide instructions.* Review the information that displays in the pane on the left side of the screen. As you select different options in the Project Guide, the task pane displays specific information related to that option. Notice that the default project start date is set at the current date. Click the **date** list arrow on the pop-up calendar to select a date. Select the last day of the month that displays.
4. *Close the Project Guide.* Click the **Close** button  in the upper-right corner of the Project Guide window, and then click **Yes** when prompted to exit the wizard.

If the Project Guide toolbar is not visible, click View on the menu bar, select Toolbars, and then click Project Guide.



In addition to using the Project Guide window, you can access other information to help you learn how to use Project 2003 under the Help menu. Figure A-7 displays the Help menu options available, and Figure A-8 provides a description of each option.

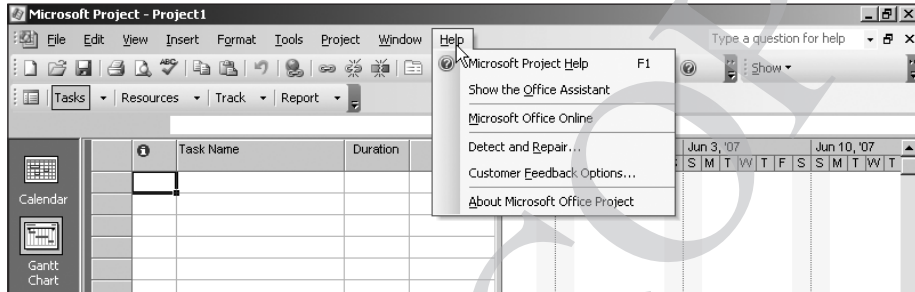


Figure A-7. Project 2003 Help Menu Options

HELP MENU OPTION	DESCRIPTION
Microsoft Project Help	Displays a Search for: textbox for assistance, the Table of Contents for Help, and options for using Microsoft Office Online.
Show the Office Assistant	Acts as a toggle to display and hide the Office Assistant, a context-sensitive, interactive guide to finding information on Project 2003.
Microsoft Office Online	Takes you directly to the Web site for Microsoft Office Online.
Customer Feedback Option	Provides information about Microsoft's Customer Experience Improvement Program. This program allows Microsoft to collect anonymous information about your hardware configuration and how you use their software and services to identify trends and usage patterns.
Detect and Repair	Automatically finds and fixes errors in all Office files.
About Microsoft Office Project	Displays the version of Microsoft Office Project, licensed use, and other information about Project 2003.

Figure A-8. Descriptions of Project 2003 Help Menu Options

Microsoft realizes that Project 2003 can take some time to learn and provides a number of resources on its Web site. Select MS Office Online from the Project 2003 Help menu to go to Microsoft's Web site for Office products. Microsoft's Web site for Project 2003 (www.microsoft.com/project) provides files for users to download, case studies, articles, and other useful materials.

Within Project 2003, the Office Assistant helps answer questions as they arise. You can access the Office Assistant at any time by selecting Show the Office Assistant from the Help menu. You can also press F1 or click the Office Assistant button on the Standard toolbar. As in other Microsoft applications, the Office Assistant allows you to type a question and search for related information. You can hide the Office Assistant from the Help menu if you no longer want it to appear on your screen. Feel free to experiment with the various Help tools.

Main Screen Elements

The Project 2003 default main screen is called the Gantt Chart view. At the top of the main screen, the menu bar and Standard toolbar are similar to those in other Windows programs. Note that the order and appearance of buttons on the Standard toolbar may vary, depending on the features you are using and how the Standard toolbar is customized. When you use a button, it automatically becomes visible on the toolbar it's associated with. You can display the Standard toolbar in one row or two, or you can set it to always show full menus so that all buttons are visible all the time. Additional toolbars in Project 2003 include the Formatting toolbar, the Custom Forms toolbar, and the Tracking toolbar, among others.

To customize the Standard toolbar:

1. *Open the Customize dialog box.* Click **Tools** on the menu bar, select **Customize**, and then click **Toolbars** to display the Customize dialog box. Click the **Options tab**.
2. *Show full menus.* Click the option to **Always show full menus**, as shown in Figure A-9, and then click the **Close** button to close the dialog box.

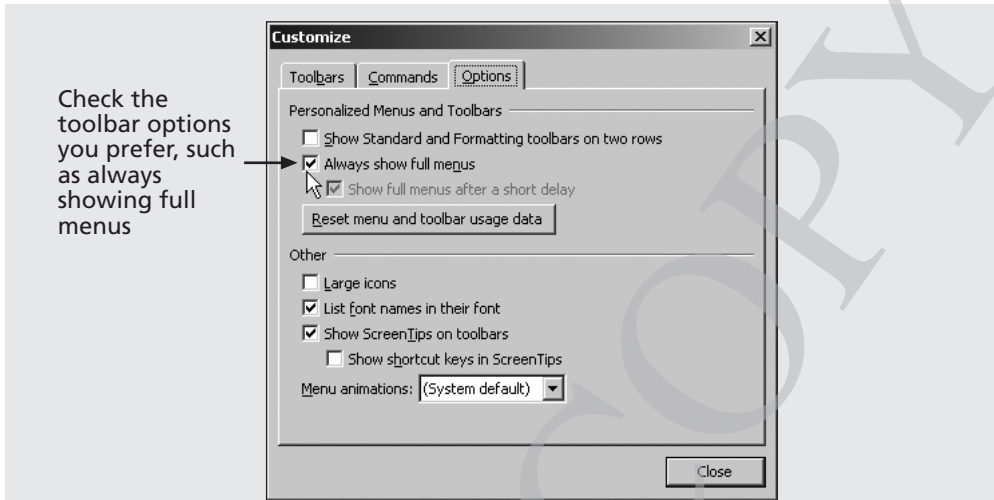




Figure A-9. Customizing the Toolbar

3. If needed, add the Link Tasks button to the toolbar. Click the **Toolbar Options** button on the toolbar , and then click the **Link Tasks** button , as shown in Figure A-10.

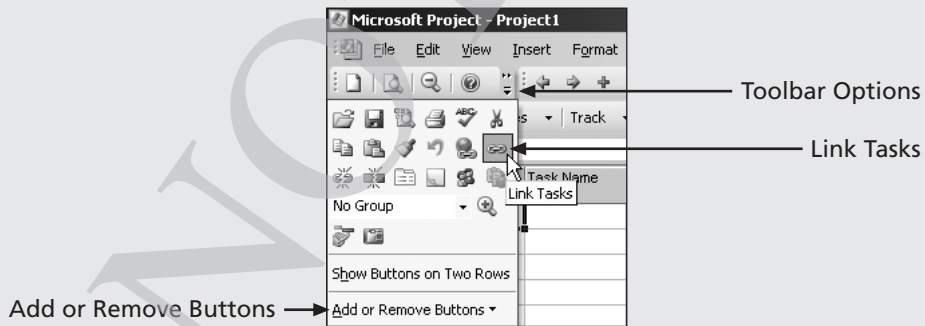




Figure A-10. Adding the Link Tasks Button to the Toolbar

4. If needed, add the **Zoom In** and **Zoom Out** buttons to the toolbar. Click the **Toolbar Options** button on the toolbar again, and then click the **Zoom In** button . Click the **Toolbar Options** button again, and then click the **Zoom Out** button , as shown in Figure A-11.

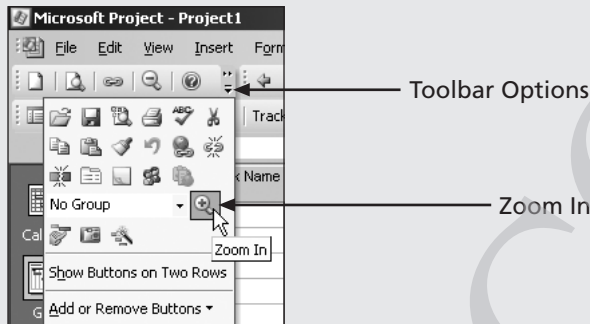


Figure A-11. Adding the Zoom In and Zoom Out Buttons to the Toolbar



You can select the Add or Remove Buttons option to add or remove several toolbar buttons at once.

Figure A-12 shows several commonly used buttons, such as the Link Tasks, Zoom In, Zoom Out, and Indent buttons. Below the toolbar is the Entry bar, which displays entries you make in the Entry table, located right below the Entry text box. The Gantt chart calendar display appears on the right of the split bar, which separates the Entry table and the Gantt chart. Use the Entry table to enter WBS task information. The column to the left of the Task Name column is the Indicators column. The Indicators column displays indicators or symbols related to items associated with each task, such as task notes or hyperlinks to other files.

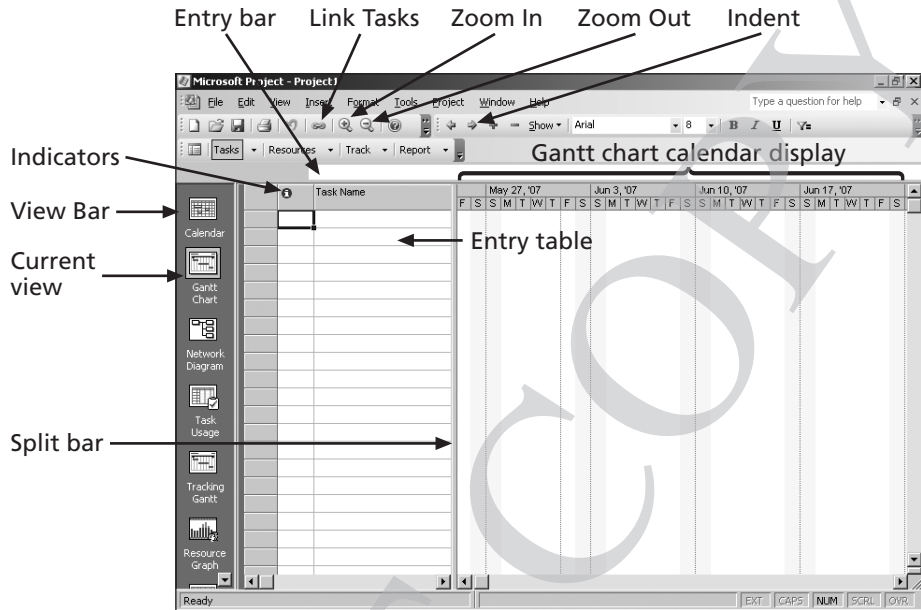


Figure A-12. Project 2003 Main Screen Elements



Many features in Project 2003 are similar to features in other Windows programs. For example, to collapse or expand tasks, click the appropriate symbols to the left of the task name. To access shortcut items, right-click in either the Entry table area or the Gantt chart. Many of the Entry table operations in Project 2003 are very similar to operations in Excel. For example, to adjust a column width, click and drag or double-click between the column heading titles.

If you select another view and want to return to the Gantt Chart view, you can click the Gantt Chart button on the View Bar on the left of the screen, or select View from the menu bar, and click Gantt Chart, as shown in Figure A-13. If the Entry table on the left appears to be different, select View from the menu bar, point to Table: Entry, and then click Entry to return to the default Entry table view.

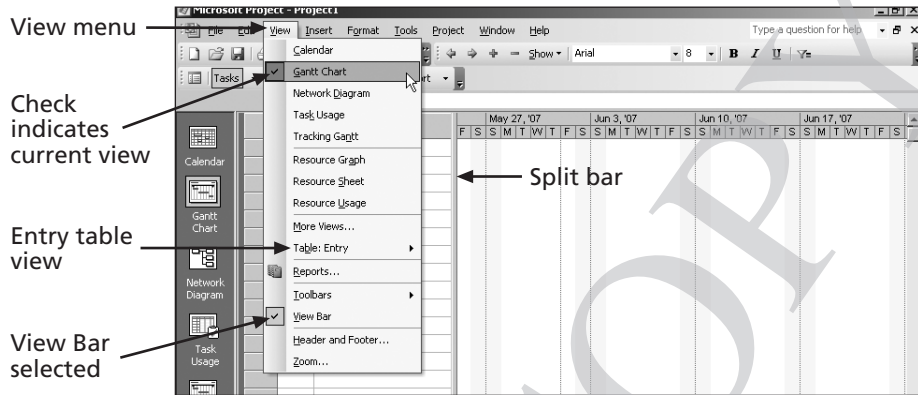


Figure A-13. Project 2003 View Menu Options

Notice the split bar that separates the Entry table from the Gantt chart. When you move the mouse over the split bar, your cursor changes to the resize pointer. Clicking and dragging the split bar to the right reveals other task information in the Entry table, including the Duration, Start date, Finish date, Predecessors, and Resource Names columns.

Next, you'll open a template file to explore more screen elements. Project 2003 comes with several template files, and you can also access templates on Microsoft's Web site. To open template files on your computer, click File on the menu bar, and then click New. In the New Project task pane, click the "On my computer" option under Templates, as shown in Figure A-14. You can also access templates on Office Online or from your own Web sites.

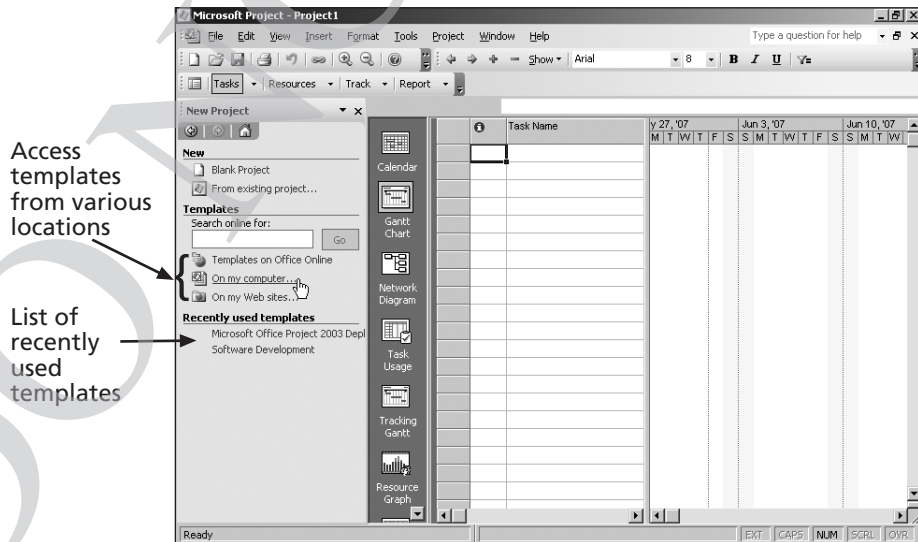


Figure A-14. Opening a Template File



To access template files on your computer, you must do a full or custom install of Project 2003.

Figure A-15 shows results from searching for templates that contain the word “Project” using the “Templates on Office Online” option. Note that the templates found will vary based on the date of access.

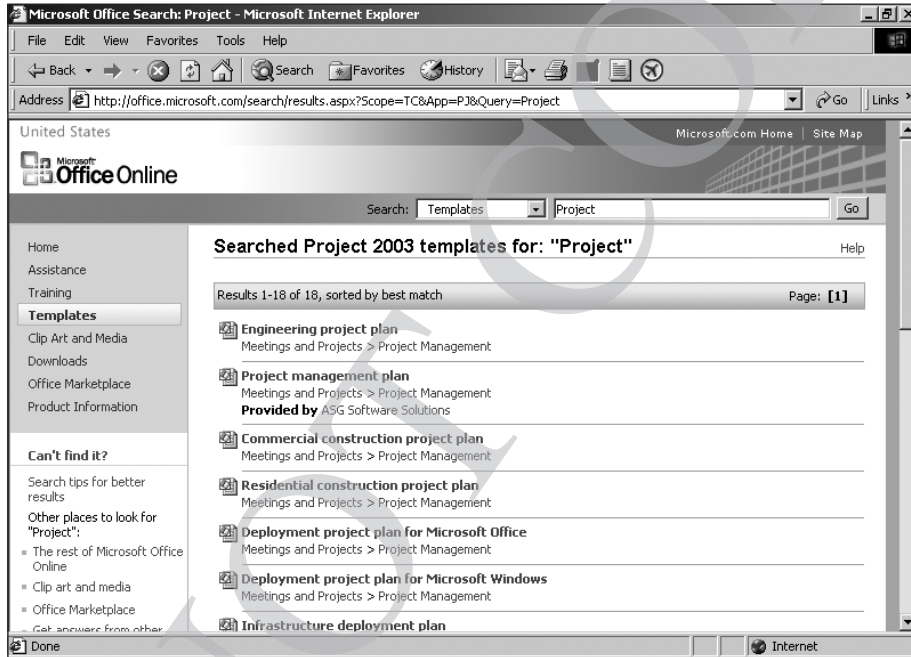



Figure A-15. Finding Templates Using Office Online

To open a template file and adjust Project 2003 screen elements:

1. *Open a template file.* Click the **Open button**  on the Standard toolbar, browse to find the file named **PRJ03DPL.mpp** that you copied from the companion Web site for this text, and then double-click the filename to open the file. This file provides a template for a project to deploy Microsoft Office Project 2003 in a corporate environment. Note that you are simply opening this file instead of accessing it from the template options shown in Figure A-14.
2. *View the Note.* Move your mouse over the **Notes icon** in the Indicators column and read its contents. It's a good idea to provide a short note describing the purpose of project files. Your screen should resemble Figure A-16.

Indicators column

Notes icon

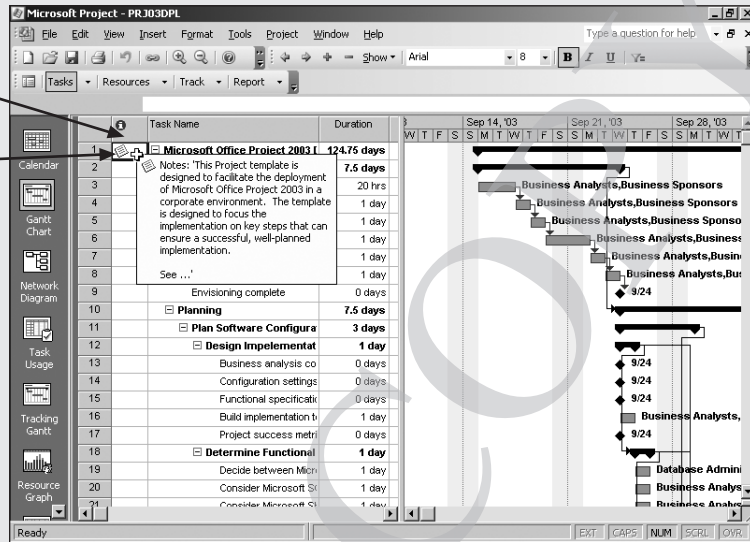




Figure A-16. The PRJ03DPL.mpp Template File



After you open template files, those filenames will appear on your screen under the New from Template section. For example, Figure A-14 shows that the template file for Software Deployment was recently accessed on this user's screen. You can also see recently opened files from the File menu.

3. *Adjust the timescale.* Click the **Zoom Out** button  on the toolbar *three times* to display the timescale in quarters. If you cannot find the Zoom Out button, you can add it to the Standard toolbar by clicking the **Toolbar Options** button, as described earlier.
4. *Select Outline Level 2 to display WBS level 1 tasks.* On the Standard toolbar, click the **Show** button's list arrow , and then click **Outline Level 2**, as shown in Figure A-17. Notice that only the level 1 WBS items display in the Entry table after you select Outline Level 2, and the timescale shows quarters. The black bars on the Gantt chart represent the summary tasks. This file included a summary task for the entire project as the Outline Level 1 task. Recall from Chapter 5, Project Scope Management that the entire project is normally referred to as WBS level zero.

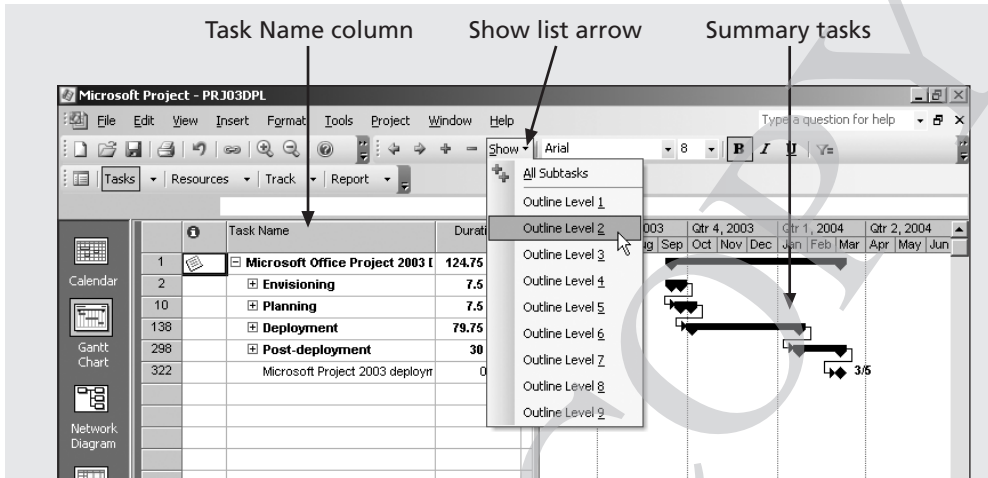



Figure A-17. Viewing Summary Tasks Using the Show Button

5. *Widen the Task Name column.* Move the cursor over the right-column gridline in the Task Name column heading until you see the resize pointer , and then double-click the **left mouse** button to resize the column width automatically to show all the text.
6. *Move the split bar to reveal more Entry table columns.* Move the split bar to the right to reveal the entire Duration column. Your screen should resemble Figure A-18.

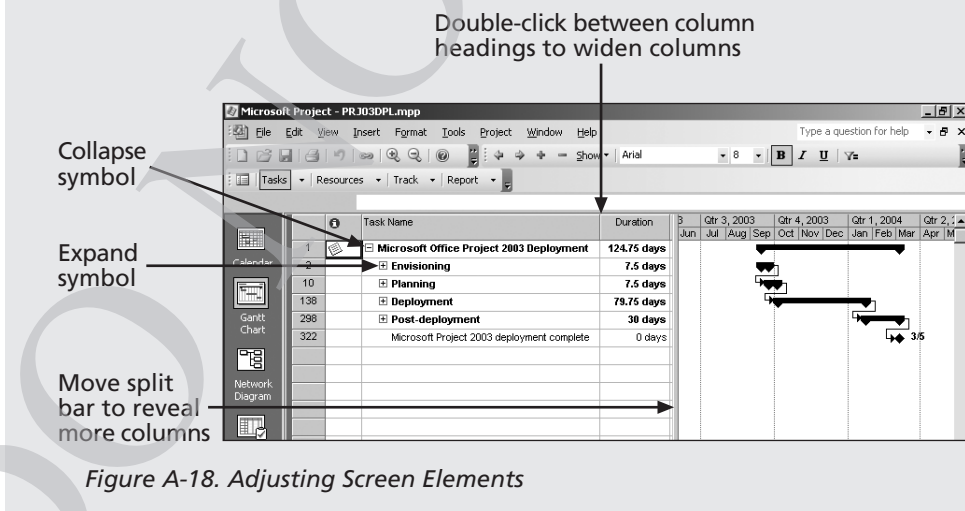




Figure A-18. Adjusting Screen Elements

7. *Expand a task.* Click the **expand symbol**  to the left of Task 2, Envisioning, to see its subtasks. Click the **collapse symbol**  to hide its subtasks.

Project 2003 Views

In Project 2003, there are many ways to display project information. These displays are called views. To the left of the Entry table is the View Bar. Instead of using commands on the View menu to change views, you can click buttons on the View Bar. Several views discussed in the main text are on the default View Bar: Gantt Chart, Network Diagram, Tracking Gantt, and Resource Graph. Other views include Calendar, Task Usage, Resource Sheet, Resource Usage, and an option to display More Views. These different views allow you to examine project information in different ways, which helps you analyze and understand what is happening on your project.

To save screen space, you can hide the View Bar by selecting View from the menu bar and deselecting View Bar. When the View Bar is not visible, a gray line (or blue line in Windows XP) with the name of the current view appears to the far left of the main screen. When you right-click this gray line, a shortcut menu appears, which gives you quick access to the other views.

The View menu also provides access to different tables and reports that display information in a variety of ways. Some tables that you can access from the View menu include Schedule, Cost, Tracking, and Earned Value. Some reports you can access from the View menu include Overview, Current Activities, Costs, Assignments, and Workload.

Some Project 2003 views, such as the Gantt Chart view, present a broad look at the entire project, whereas others, such as the Form views, focus on specific pieces of information about each task. Three main categories of views are available:

- **Graphical:** A chart or graphical representation of data using bars, boxes, lines, and images.
- **Task Sheet or Table:** A spreadsheet-like representation of data in which each task appears as a new row, and each piece of information about the task is represented by a column. Different tables are applied to a task sheet to display different kinds of information.
- **Form:** A specific view of information for one task. Forms are used to focus on the details of one task.




Table A-1 describes some of the predesigned views within each category that Project 2003 provides to help you display the project or task information that you need.

Table A-1: Common Project 2003 Views

CATEGORY OF VIEW	VIEW NAME	DESCRIPTION OF VIEW
<i>Graphical</i>	Gantt Chart	Standard format for displaying project schedule information that lists project tasks and their corresponding start and finish dates in a calendar format. Shows each task as a horizontal bar with the length and position corresponding to the timescale at the top of the Gantt chart.
	Network Diagram	Schematic display of the logical relationships or sequencing of project activities. Shows each task as a box with linking lines between tasks to show sequencing. Critical tasks appear in red.
<i>Task Sheet or Table</i>	Entry Table	Default table view showing columns for Task Name and Duration. By revealing more of the Entry table, you can enter start and end dates, predecessors, and resource names.
	Schedule Table	Displays columns for Task Name, Start, Finish, Late Start, Late Finish, Free Slack, and Total Slack.
	Cost Table	Displays columns for Task Name, Fixed Cost, Fixed Cost Accrual, Total Cost, Baseline, Variance, Actual, and Remaining.
	Tracking Table	Displays columns for Task Name, Actual Start, Actual Finish, % Complete, Physical % Complete, Actual Duration, Remaining Duration, Actual Cost, and Actual Work.
	Earned Value	Displays columns for Task Name, BCWS, BCWP, ACWP, SV, CV, EAC, BAC, and VAC. See Chapter 7, Project Cost Management, for descriptions of these earned value terms.
<i>Form</i>	Task Details Form	Displays detailed information about a single task in one window.
	Task Name Form	Displays columns for Task Name, Resources, and Predecessors for a single task.

Next, you will use the same Microsoft Office Project 2003 Deployment template file (PRJ03DPL.mpp) to access and explore some of the views available in Project 2003. As mentioned earlier, you can configure the toolbars and toolbar buttons in different ways, as with other Office 2003 products.

To access and explore different views:

1. *Show all subtasks.* Click the **Show** button  on the toolbar, and then click **All Subtasks**.
2. *Explore the Network Diagram view.* Click the **Network Diagram** button  on the View Bar, and then click the **Zoom Out** button  on the toolbar *three times*. Your screen should resemble Figure A-19.

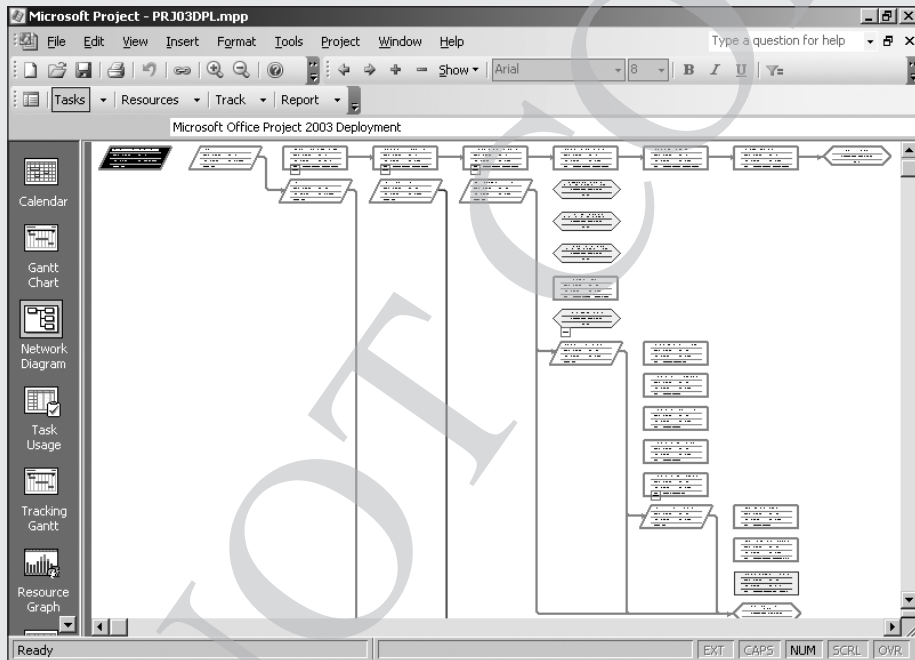


Figure A-19. Network Diagram View of Project 2003 Deployment File

3. *Explore the Calendar view.* Click the **Calendar** button  on the View Bar. Your screen should resemble Figure A-20.

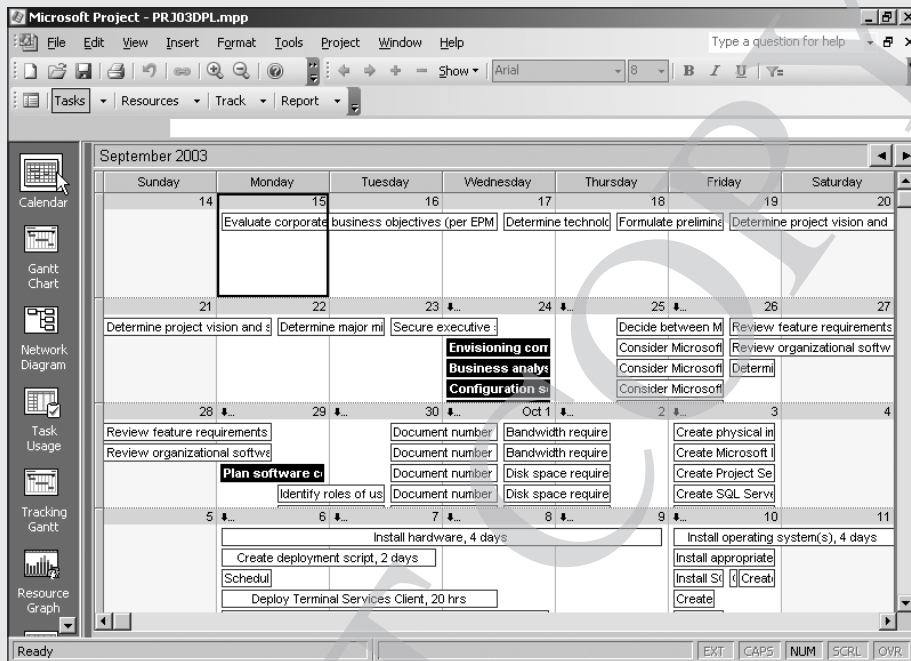




Figure A-20. Calendar View of Project 2003 Deployment File

4. *Examine columns in the Entry table.* Click the **Gantt Chart** button  on the View Bar, and then move the split bar by moving your mouse between the Entry table and Gantt chart until you see the resize pointer . Click and drag your mouse to the right almost to the end of the screen to reveal other columns in the Entry table.
5. *Examine the Table: Schedule view.* Click **View** on the menu bar, move your mouse to **Table: Entry**, and then click **Schedule** in the cascading menu to the right. Notice that the columns to the left of the Gantt chart now display more detailed schedule information.
6. *Right-click the Select All button to access different table views.* Move your mouse to the **Select All** button to the left of the Task Name column symbol, and then **right-click** with your mouse. A shortcut menu to different table views displays, as shown in Figure A-21. Experiment with other table views, then return to the Table: Entry view.

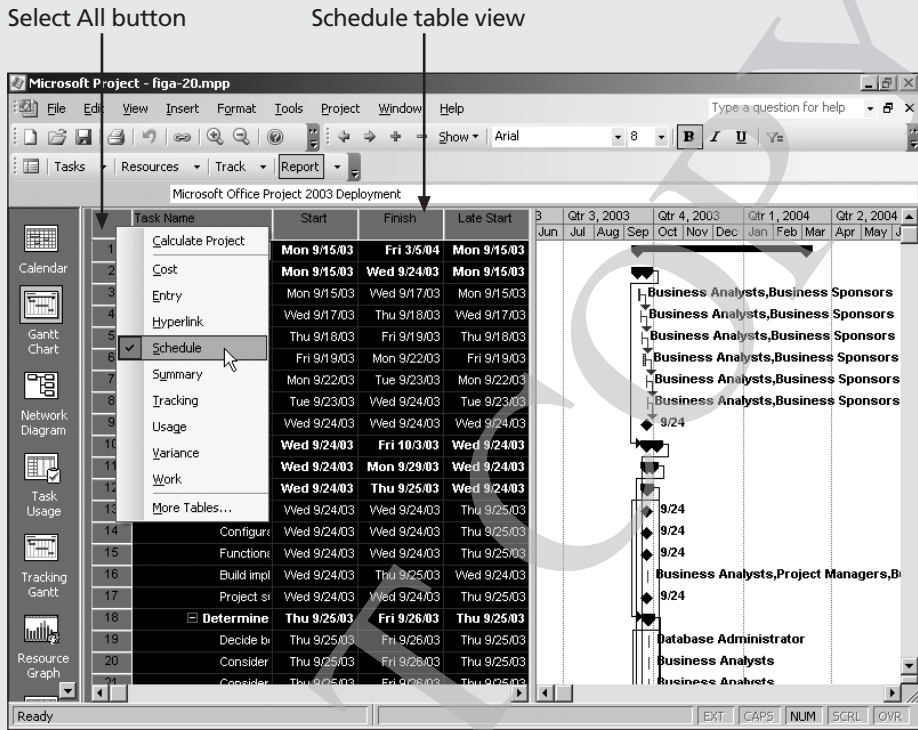


Figure A-21. Changing Table Views

7. Explore the Reports feature. Click **View** on the menu bar, and then click **Reports**. The Reports dialog box displays, as shown in Figure A-22.



Figure A-22. Reports Dialog Box

8. *View the Project Summary report.* Double-click **Overview** from the Reports dialog box, and then double-click **Project Summary** in the Overview Reports dialog box. Notice that the insertion point now resembles a magnifying glass. Click inside the report to **Zoom In** or **Zoom Out**. Click the **Close** button to close this report, and then experiment with viewing other reports. You will use several reports and other views throughout this appendix.
9. *Close the Reports feature.* Click **Close** to close the Reports dialog box and return to the Gantt Chart view.

Project 2003 Filters

Project 2003 uses an underlying relational database to filter, sort, store, and display information. This database is compatible with Microsoft Access, and it is relatively easy to import information from and export information to other applications. Project 2003 is an Object Linking and Embedding for Databases (OLE-DB) provider, meaning that it has low-level connectivity between multiple types of data sources. For example, you can import or export data to other applications such as Excel, Access, Oracle, and so on.

You can filter information by clicking the Filter text box list arrow, as shown in Figure A-23. You can access more filter options by using the scroll bar.

Filter text box list arrow

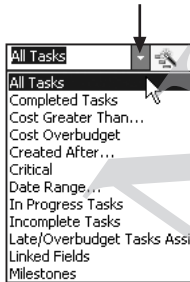



Figure A-23. Filter List Options

Filtering project information is very useful. For example, if a project includes hundreds of tasks, you might want to view only summary or milestone tasks to get an overview of the project. To get this type of overview of a project, select the Milestones or Summary Tasks filter from the Filter list. If you are concerned about the schedule, you can select a filter that shows only tasks on the critical

path. Other filters include Completed Tasks, Late/Overbudget Tasks, and Date Range, which displays tasks based on dates you provide. As shown earlier, you can also click the Show list arrow on the toolbar to display different levels in the WBS quickly. For example, Outline Level 1 shows the highest-level items in the WBS, Outline Level 2 shows the next level of detail in the WBS, and so on.

To explore Project 2003 filters:

1. *Apply a filter to see only milestone tasks.* From the Table: Entry view in the Microsoft Office Project 2003 Deployment file, click the **Toolbar Options** button  on the toolbar, and then click the **Filter** list arrow, as shown in Figure A-24.

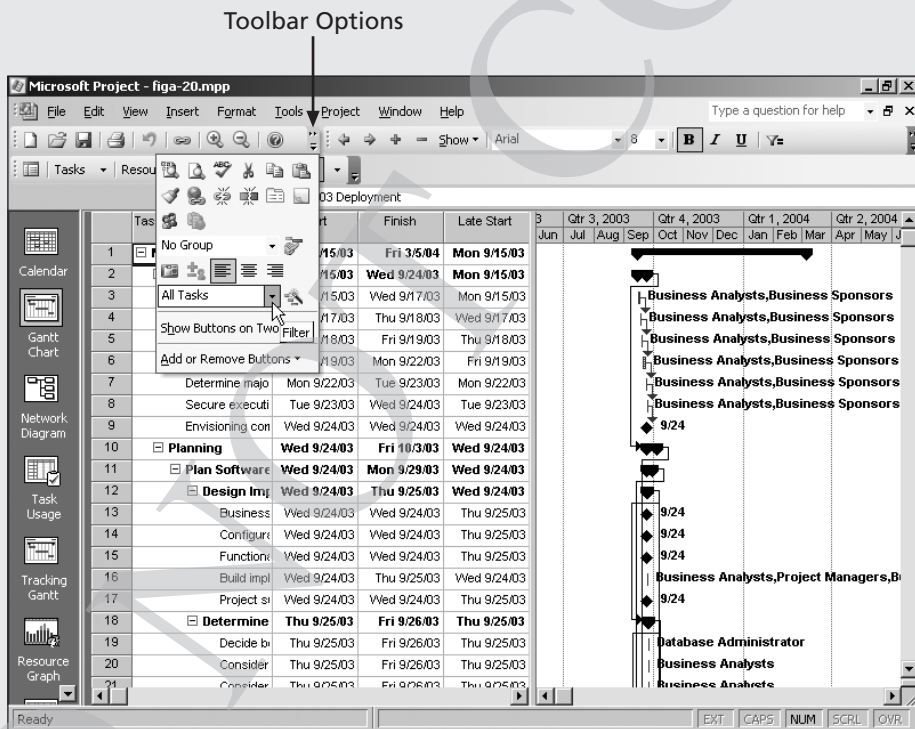


Figure A-24. Using a Filter

2. *Filter to show specific tasks.* Click **Milestones** in the list of filters. Your screen should resemble Figure A-25. Recall from Chapter 6, Project Time Management, that the black diamond symbol represents a milestone, a significant event on a project.

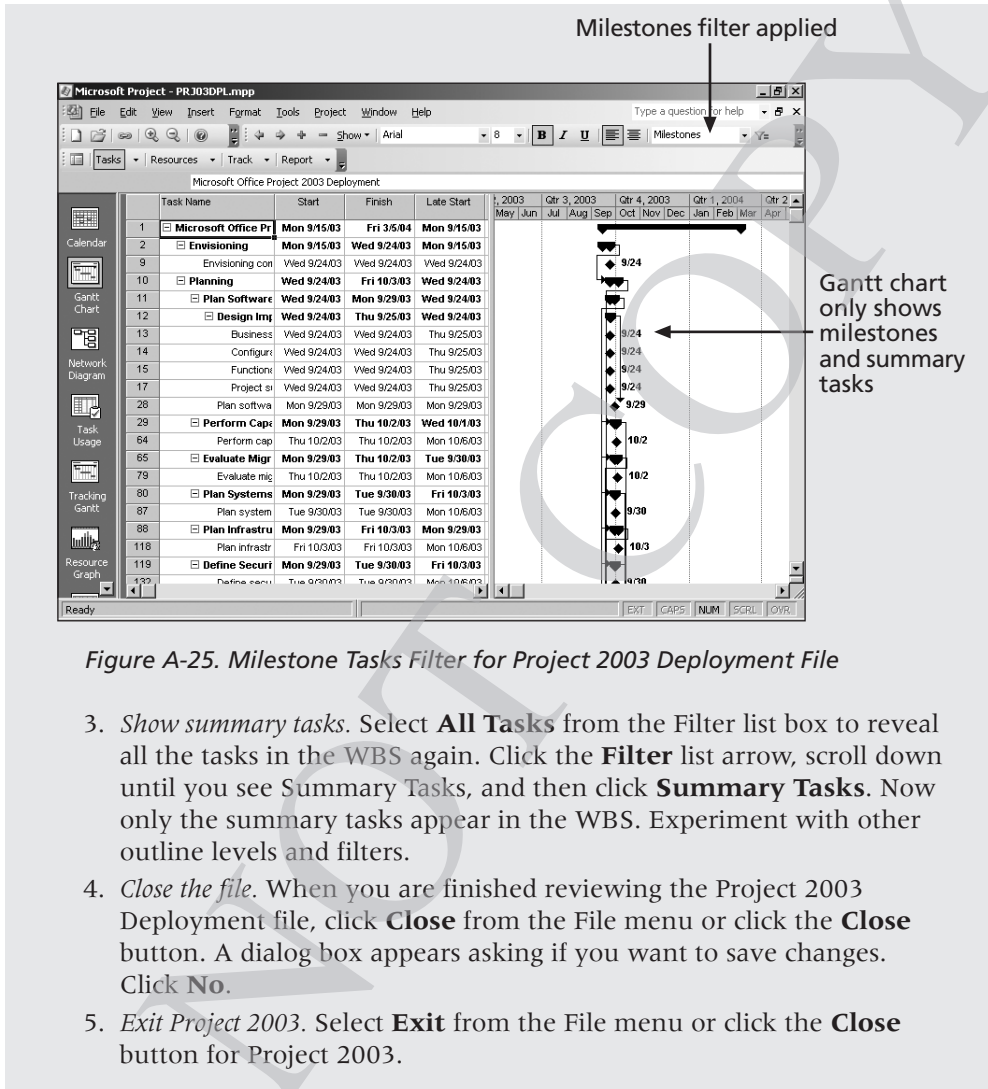


Figure A-25. Milestone Tasks Filter for Project 2003 Deployment File

3. *Show summary tasks.* Select **All Tasks** from the Filter list box to reveal all the tasks in the WBS again. Click the **Filter** list arrow, scroll down until you see **Summary Tasks**, and then click **Summary Tasks**. Now only the summary tasks appear in the WBS. Experiment with other outline levels and filters.
4. *Close the file.* When you are finished reviewing the Project 2003 Deployment file, click **Close** from the File menu or click the **Close** button. A dialog box appears asking if you want to save changes. Click **No**.
5. *Exit Project 2003.* Select **Exit** from the File menu or click the **Close** button for Project 2003.

Now that you are familiar with Project 2003 main screen elements, views, and filters, you will learn how to use Project 2003 to assist in project scope management by creating a new project file, developing a WBS, and setting a baseline.

PROJECT SCOPE MANAGEMENT

Project scope management involves defining the work to perform to carry out the project. To use Project 2003, you must first determine the scope of the project. To begin determining the project's scope, create a new file with the project name and start date. Develop a list of tasks that need to be done to carry out the project. This list of tasks becomes the work breakdown structure (WBS; see Chapter 5). If you intend to track actual project information against the initial plan, you must set a baseline. In this section, you will learn how to create a new project file, develop a WBS, and set a baseline to help plan and manage the Project Tracking Database project. To start, you will enter the scope-related information.



In this section, you will go through several steps to create a Project 2003 file named `scope.mpp`. If you want to download the completed file to check your work or continue to the next section, a copy of `scope.mpp` is available on the companion Web site for this text or from your instructor. You should try to complete an entire section of this appendix (project scope management, project time management, and so on) in one sitting to create the complete file.

Creating a New Project File

To create a new project file:

1. *Create a blank project.* Open Project 2003, and close the Getting Started pane and the following Tasks pane. A blank project file automatically opens when you start Project 2003. The default filenames are `Project1`, `Project2`, and so on. If Project 2003 is already open and you want to open a new file, click the **New** button on the toolbar, as with other Office programs.
2. *Open the Project Information dialog box.* Click **Project** on the menu bar, and then click **Project Information** to display the Project Information dialog box, as shown in Figure A-26. The Project Information dialog box enables you to set dates for the project, select the calendar to use, and view project statistics. The project start date will default to today's date.

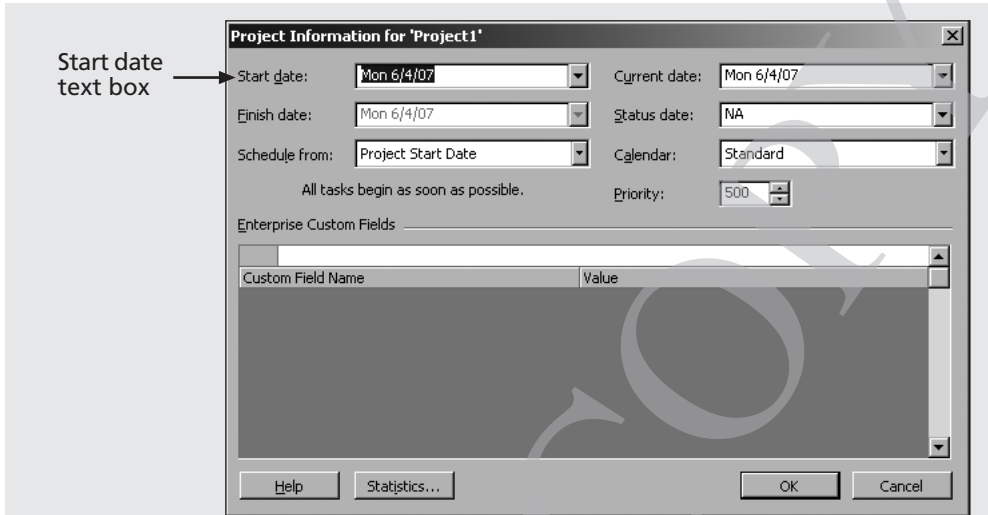


Figure A-26. Project Information Dialog Box

3. *Enter the project start date.* In the Start date text box, enter **6/4/07**. Setting your project start date to 6/4/07 will ensure that your work matches the results that appear in this appendix. Leave the Finish date, Current date, and other information at the default settings. Click **OK**.



Project 2003 uses American date formats. For example, 6/4/07 represents June 4, 2007. Be sure to enter dates in this format.

4. *Enter project properties.* Click **File** on the menu bar, and then click **Properties**.



Any command that you click in the expanded menu is added immediately to the personalized (short) version of the menu. If you stop using a command for a while, Project 2003 stops showing it on the short version of the menu.

5. *Enter project information.* Type **Project Tracking Database** in the Title text box, type **Terry Dunlay** in the Author text box, as shown in Figure A-27, and then click **OK**. Note that you may have some default information entered in the Project Properties dialog box, such as your company's name. Keep this file open for the next set of steps.

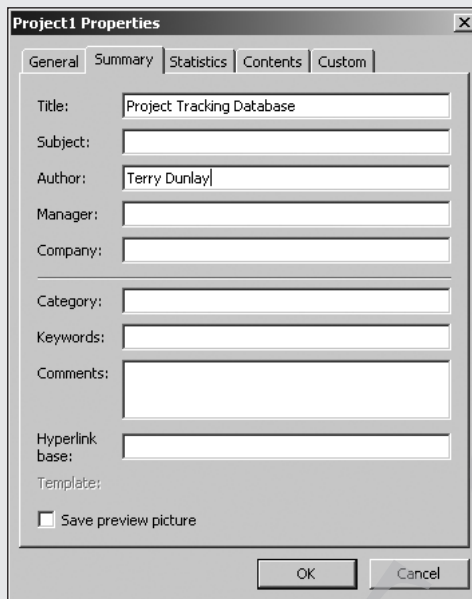


Figure A-27. Project Properties Dialog Box

Developing a Work Breakdown Structure

Before using Project 2003, you must develop a work breakdown structure (WBS) for your project. Developing a good WBS takes time, and it will make entering tasks into the Entry table easier if you develop the WBS first. It is also a good idea to establish milestones before entering tasks in Project 2003. See Chapter 5, Project Scope Management, for more information on creating a WBS and determining milestones. You will use the information in Table A-2 to enter tasks for the Project Tracking Database project. Be aware that this example is much shorter and simpler than most WBSs.

To develop a work breakdown structure and enter milestones for the Project Tracking Database project:

1. *Enter task names.* Enter the twenty tasks in Table A-2 into the Task Name column in the order shown. Do not worry about durations or any other information at this time. Type the name of each task into the Task Name column of the Entry table, beginning with the first row. Press **Enter** or the **down arrow** key on your keyboard to move to the next row.




If you accidentally skip a task, highlight the task row and select **Insert** from the menu bar, then select **New Task**, to insert a blank row. To edit a task entry, click the text for that task, click the Entry bar under the formatting toolbar, and either type over the old text or edit the existing text.

Table A-2: Project Tracking Database Tasks

ORDER	TASKS	ORDER	TASKS
1	Initiating	11	Design
2	Kickoff meeting	12	Implementation
3	Develop project charter	13	System implemented
4	Charter signed	14	Controlling
5	Planning	15	Report performance
6	Develop project plans	16	Control changes
7	Review project plans	17	Closing
8	Project plans approved	18	Prepare final project report
9	Executing	19	Present final project
10	Analysis	20	Project completed



Entering tasks into Project 2003 and editing the information is similar to entering and editing data in an Excel spreadsheet. Project 2003, like Project 2002, includes a feature called a Smart Tag, which appears, for example, when you delete a row. The Smart Tag clarifies whether you want to delete the entire task or only clear the contents of a cell.




2. *Move the split bar to reveal more columns.* If necessary, move the split bar to the right to reveal the entire Task Name and Duration columns.
3. *Adjust the Task Name column width, as needed.* To make all the text display in the Task Name column, move the mouse over the right-column gridline in the Task Name column heading until you see the resize pointer , then click the **left mouse** button and drag the line to the right to make the column wider, or double-click to adjust the column width automatically.

This WBS separates tasks according to the project management process groups of initiating, planning, executing, controlling, and closing. These tasks will be the level 1 items in the WBS for this project. It is a good idea to include all of these process groups, because there are important tasks that must be done under each of them. Recall that the WBS should include *all* of the work required for the project. In the Project Tracking Database WBS, the tasks will purposefully be left at a high WBS level (level 2). You will create these levels, or the WBS hierarchy, next when you create summary tasks. For a real project, you would usually break the WBS into even more levels to provide more details to describe all the work involved in the project. For example, analysis tasks for a database project might be broken down further to include preparing entity relationship diagrams for the database and developing guidelines for the user interface. Design tasks might be broken down to include preparing prototypes, incorporating user feedback, entering data, and testing the database. Implementation tasks might include more levels, such as installing new hardware or software, training the users, fully documenting the system, and so on.

Creating Summary Tasks

After entering the WBS tasks listed in Table A-2 into the Entry table, the next step is to show the WBS levels by creating summary tasks. The summary tasks in this example are Tasks 1 (initiating), 5 (planning), 9 (executing), 14 (controlling), and 17 (closing). You create summary tasks by highlighting and indenting their respective subtasks.

To create the summary tasks:

1. *Select lower-level or subtasks.* Highlight **Tasks 2** through **4** by clicking the cell for Task 2 and dragging the mouse through the cells to Task 4.
2. *Indent subtasks.* Click the **Indent** button  on the Formatting toolbar, so your screen resembles Figure A-28. After the subtasks (Tasks 2 through 4) are indented, notice that Task 1 automatically becomes boldface, which indicates that it is a summary task. A collapse symbol  appears to the left of the new summary task name. Clicking the collapse symbol will collapse the summary task and hide the subtasks beneath it. When subtasks are hidden, an expand symbol  appears to the left of the summary task name. Clicking the expand symbol will expand the summary task. Also, notice that the symbol for the summary task on the Gantt chart has changed from a blue line to a black line with arrows indicating the start and end dates.

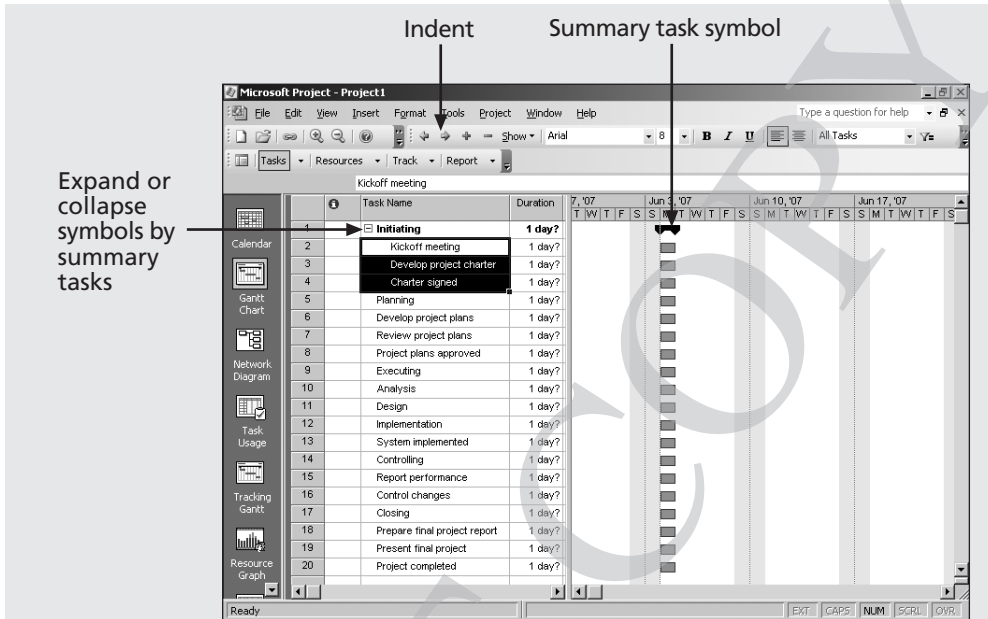



Figure A-28. Indenting Tasks to Create the WBS Hierarchy

3. Create other summary tasks and subtasks. Create subtasks and summary tasks for Tasks 5, 9, 14, and 17 by following the same steps. Indent **Tasks 6 through 8** to make Task 5 a summary task. Indent **Tasks 10 through 13** to make Task 9 a summary task. Indent **Tasks 15 through 16** to make Task 14 a summary task. Indent **Tasks 18 through 20** to make Task 17 a summary task.



Tip To change a task from a subtask to a summary task or to change its level in the WBS, you can “outdent” the task. Click the cell of the task or tasks you want to change, and then click the Outdent button  on the Formatting toolbar. Remember that the tasks in Project 2003 should be entered in an appropriate WBS format with several levels in the hierarchy.

Numbering Tasks

Depending on how Project 2003 is set up on your computer, you may or may not see numbers associated with tasks as you enter and indent them.

To display automatic numbering of tasks, using the standard tabular numbering system for a WBS:

1. *Display the Options dialog box.* Click **Tools** on the menu bar, and then click **Options**. The Options dialog box opens.
2. *Show outline numbers.* Click the **View** tab, if necessary. Check **Show outline number** in the “Outline options for Project1” section of the View tab. Click **OK** to close the dialog box. Figure A-29 shows the Options dialog box and resulting outline numbers applied to the WBS tasks.

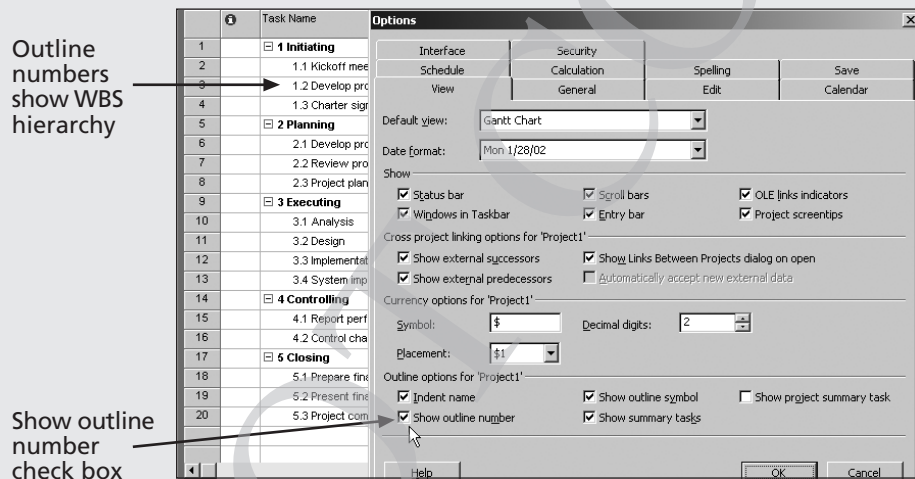



Figure A-29. Adding Outline Numbers

Saving Project Files With or Without a Baseline

An important part of project management is tracking performance against a baseline, or approved plan. Project 2003, like Project 2002, does not prompt you to save a file with or without a baseline each time you save it, as previous versions did. The default is to save without a baseline. It is important to wait until you are ready to save your file with a baseline, because Project 2003 will show changes against a baseline. Because you are still developing your project file for the Project Tracking Database project, you want to save the file without a baseline. Later in this appendix, you will save the file with a baseline by selecting Tools, Tracking, and then Set Baseline. You will then enter actual information to compare planned and actual performance data.

To save a file without a baseline:

1. *Save your file.* Click **File** on the menu bar and then click **Save**, or click the **Save** button  on the Standard toolbar.
2. *Enter a filename.* In the Save As dialog box, type **scope** in the File name text box. Save the file in your personal folder, on a floppy disk, or in the C:\temp folder, depending on how your computer is set up. Click **Save**. Your Project 2003 file should look like Figure A-30. (You can adjust the timescale to show months by clicking Zoom In or Zoom Out.)



If you want to download the Project 2003 file `scope.mpp` to check your work or continue to the next section, a copy is available on the companion Web site for this text or from your instructor.

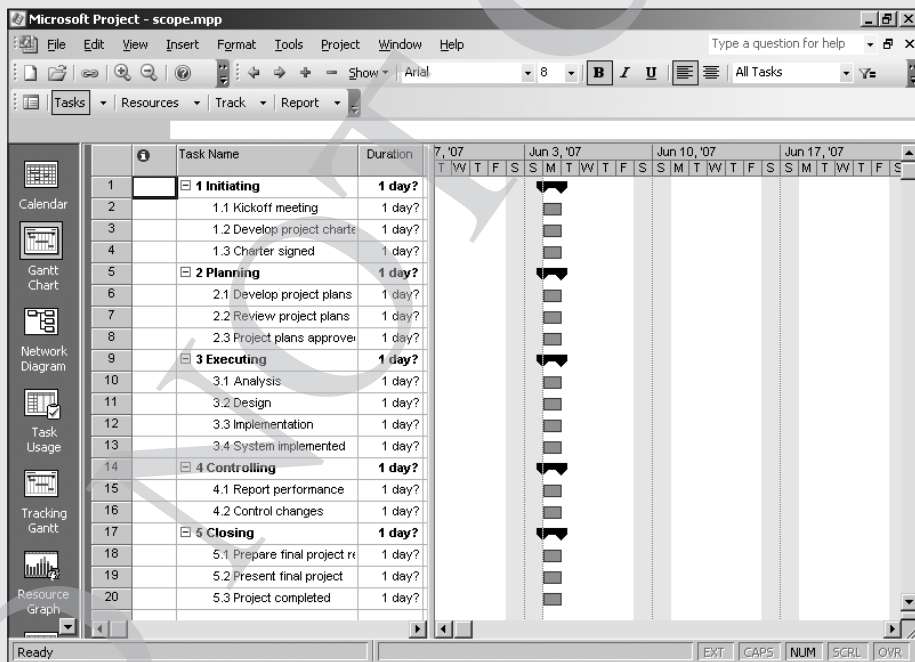


Figure A-30. Project 2003 Scope File

Project 2003 now includes the Visio WBS Chart Wizard. This wizard helps you to create a graphical view of your WBS, similar to the samples provided in Chapter 5. If you want to create a WBS in a chart format first and then import it into Project 2003, you can use several add-in products that provide that capability. Figure A-31 shows the Help information available from Project 2003 on creating a Visio WBS chart.

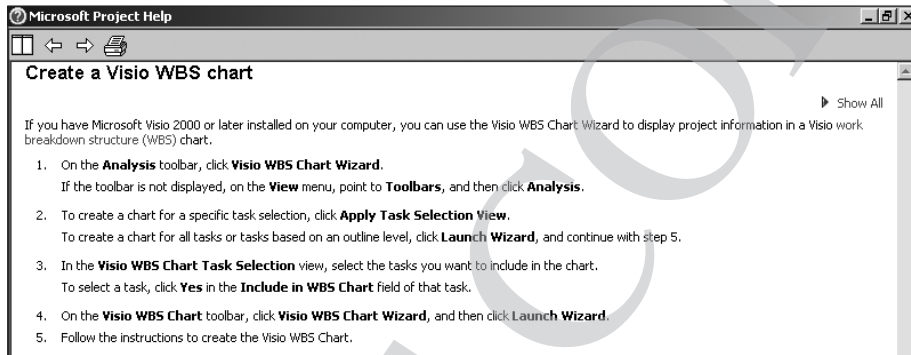


Figure A-31. Help on Creating a Visio WBS Chart

To create a WBS using the Visio WBS Chart Wizard:



You must have Microsoft Visio 2000 or later installed on your computer to use this wizard. If you do not have Visio installed, skip the following steps.

1. *Show the analysis toolbar.* Click **View** on the menu bar, select **Toolbars**, and then click **Analysis**.
2. *Open the wizard.* Click **Visio WBS Chart Wizard** on the Analysis toolbar, and then click **Launch Wizard**.
3. *View the wizard options.* Click **Next** in Step 1 of the wizard, and then review the options in Step 2, as shown in Figure A-32. Notice that you can select which tasks or level of tasks you want to include, and include a second display field. Select the second radio button, if needed, and then set the outline level to 2. Uncheck the second Display Field option, so your screen resembles Figure A-32.

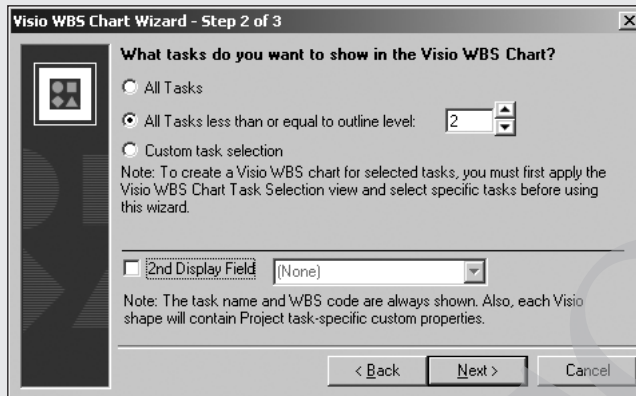


Figure A-32. Visio WBS Chart Wizard - Step 2 of 3

4. *Run the wizard.* Click **Next** to go to Step 3, click **Finish**, and then click **OK**. If you are prompted to automatically download and display the links, click No.
5. *Open the resulting file in Visio.* Click the **Visio** button that should now appear on your Windows 2000 or Windows XP Task Launch bar, and then close the Organization Chart toolbar, if necessary. Your screen should resemble Figure A-33, showing the WBS in Visio.

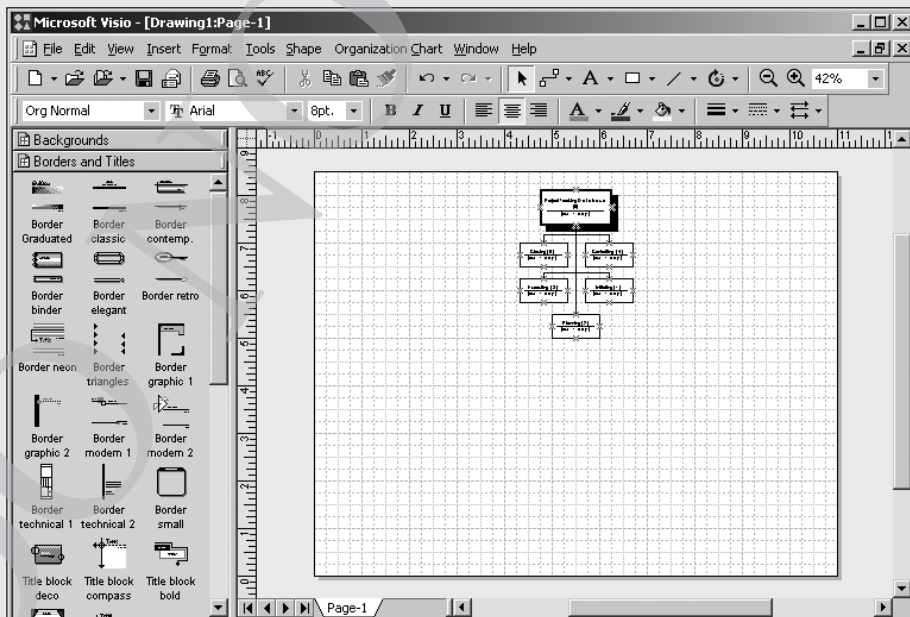



Figure A-33. WBS in Microsoft Visio

6. *Close Visio.* Click the **Close** button, and then click **No** when prompted to save the file to close Microsoft Visio.
7. *Hide the Analysis toolbar.* Click **View** on menu bar, select **Toolbars**, and then click **Analysis**.
8. *Save the file.* Click **File** on the menu bar and then click **Save**, or click the **Save** button  on the Standard toolbar.

Now that you have finished entering all twenty tasks, created the summary tasks and subtasks, set the options to show the standard WBS tabular numbering system, saved your file, and explored the Visio WBS Chart Wizard, you will learn how to use the Project 2003 time management features.

PROJECT TIME MANAGEMENT

Many people use Project 2003 for its time management features. The first step in using these features, after entering the WBS for the project, is to enter durations for tasks or specific dates when tasks will occur. Entering durations or specific dates will automatically update the Gantt chart. To use Project 2003 to adjust schedules automatically and to do critical path analysis, you must also enter task dependencies. After entering durations and task dependencies, you can view the network diagram and critical path information. This section describes how to use each of these time management features.

Entering Task Durations

When you enter a task, Project 2003 automatically assigns to it a default duration of one day, followed by a question mark. To change the default duration, type a task's estimated duration in the Duration column. If you are unsure of an estimate and want to review it again later, enter a question mark after it. For example, you could enter 5d? for a task with an estimated duration of five days that you want to review later. You can then use the Tasks With Estimated Durations filter to quickly see the tasks for which you need to review duration estimates.

To indicate the length of a task's duration, you must type both a number and an appropriate duration symbol. If you type only a number, Project 2003 automatically enters days as the duration unit. Duration unit symbols include:

- d = days (default)
- w = weeks
- m = minutes
- h = hours

- mo or mon = months
- ed = elapsed days
- ew = elapsed weeks

For example, to enter one week for a task duration, type 1w in the Duration column. (You can also type wk, wks, week, or weeks, instead of just w.) To enter two days for a task duration, type 2d in the Duration column. The default unit is days, so if you enter 2 for the duration, it will be entered as 2 days. You can also enter elapsed times in the Duration column. For example, 2ed means two elapsed days, and 2ew means two elapsed weeks. You would use an elapsed duration for a task like "Allow paint to dry." The paint will dry in exactly the same amount of time regardless of whether it is a workday, a weekend, or a holiday.



If the Duration column is not visible, drag the split bar to the right until the Duration column is in view.

Entering time estimates or durations might seem like a straightforward process. However, you must follow a few important procedures:

- As you saw in the previous section, when you enter a task in the Task Name column, 1 day? appears in the Duration column. The question mark means that you are unsure of the duration or want to go back to it. Be sure to enter the durations you want to appear.
- Do not enter durations for summary tasks. Summary task durations are calculated automatically, based on the subtasks. If you enter a duration for a task and then make it a summary task, its duration will automatically change to match the durations of its subtasks. Project 2003 will not allow you to enter or change the duration of a summary task. Think of it as entering durations for work packages, the lowest-level items in your WBS. The other items are really the WBS hierarchy. Let Project 2003 do the duration calculations for you.
- To mark a task as a milestone, enter 0 for the duration. You can also mark tasks that have a non-zero duration as milestones by checking the Mark task as milestone option in the Task Information dialog box on the Advanced tab. The milestone symbol for those tasks will appear at their start date. Double-click a task to access the Task Information dialog box.
- To enter recurring tasks, such as weekly meetings or monthly status reports, select Recurring Task from the Insert menu. Enter the task name, the duration, and when the task occurs. Project 2003 will automatically insert appropriate subtasks based on the length of the project and the number of tasks required for the recurring task. For example, if you enter a recurring task for monthly review meetings that occur on the first day of

every month for a twelve-month project, Project 2003 will enter a summary task for monthly review meetings and twelve subtasks—one meeting for each month.

- You can enter the exact start and finish dates for activities, instead of entering durations. To enter start and finish dates, move the split bar to the right to reveal the Start and Finish columns. Enter start and finish dates only when those dates are certain. If you want task dates to adjust according to any other task dates, do not enter exact start and finish dates. Instead, you should enter a duration and then establish a dependency to related tasks. *The real scheduling power of Project 2003 comes from setting up dependencies or relationships among tasks, as described in the next section.*
- Project 2003 uses a default calendar with standard workdays and hours. Duration estimates will vary according to the calendar you use. For example, entering 5d in the standard calendar may result in more than five days on the Gantt chart if the time period includes Saturday or Sunday. You can change specific working and nonworking days, or the entire project calendar, by selecting Change Working Time from the Tools menu.
- You often need to adjust the timescale on the Gantt chart to see your project's schedule in different time frames, such as weeks, months, quarters, or years. You expand the timescale by clicking the Zoom Out button. The Zoom In button collapses the timescale. You can also change the format of the timescale by having three tiers instead of two or by formatting dates differently by double-clicking the timescale section of the Gantt chart.

Next, you will set task durations in your Project Tracking Database file (scope.mpp), created in the previous section. If you did not create the file named scope.mpp, you can download it from the companion Web site for this text. You will create a new recurring task and enter its duration, and then you will enter other task durations. First, create a new recurring task called Status Reports above Task 15, Report Performance.

To create a new recurring task:

1. *Insert a recurring task above Task 15, Report performance.* Open scope.mpp, if necessary, and then click **Report performance** (Task 15) in the Task Name column to select that task. Click **Insert** on the menu bar, and then click **Recurring Task**. The Recurring Task Information dialog box opens.
2. *Enter task and duration information for the recurring task.* Type **Status Reports** as the task title in the Task Name text box. Type **1h** in the Duration text box. Select the **Weekly** radio button under Recurrence Pattern. Click the **week on** list arrow and select **every** from the list. Select the **Wednesday** check box. In the Range of Recurrence section, type **6/13/07** in the Start text box, click the **End by** radio button, and

then type **10/31/07** in the End by text box. Click the **End by** list arrow to see the calendar, as shown in Figure A-34. You can use the calendar to enter the Start and End by dates. The new recurring task will appear above Task 15, Report Performance, when you are finished.



Tip You can also enter a number of occurrences instead of an End by for a recurring task. You might need to adjust the End by date after you enter all of your task durations and dependencies. Remember that the date on your computer determines the date listed as Today in the calendar.

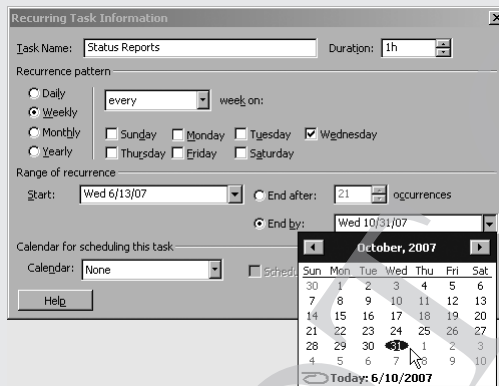



Figure A-34. Recurring Task Information Dialog Box

3. *View the new summary task and its subtasks.* Click **OK**. Project 2003 inserts a new Status Reports subtask in the Task Name column. Note that this new subtask is boldface and has an expand symbol **+** to the left of the task name. Expand the new subtask by clicking **+** to the left of the words Status Reports. To collapse the recurring task, click the **collapse symbol** **-**.
4. *Adjust column widths and the timescale.* Notice the # signs that appear in the Duration column for the Status Reports task. Like Excel, Project 2003 uses these symbols to denote that the column width needs to be increased. With the recurring task expanded, increase the Task Name column heading by moving the mouse to the right of the Task Name column heading until you see a resize pointer **+**. Double-click to adjust the column width and display the entire task name. Move the split bar to the right to reveal the entire Duration column, and then increase the Duration column's width by double-clicking to the right of the Duration column heading. Click the **Zoom Out**  button on the toolbar three times to display the Gantt chart in quarters. Your screen should resemble Figure A-35. Notice that the recurring task appears on the appropriate dates on the Gantt chart.

14	4 Controlling	107.13 days
15	4.1 Status Reports	100.13 days
16	4.1.1 Status Reports 1	1 hr
17	4.1.2 Status Reports 2	1 hr
18	4.1.3 Status Reports 3	1 hr
19	4.1.4 Status Reports 4	1 hr
20	4.1.5 Status Reports 5	1 hr
21	4.1.6 Status Reports 6	1 hr
22	4.1.7 Status Reports 7	1 hr
23	4.1.8 Status Reports 8	1 hr

Figure A-35. Expanding a Recurring Task

Use the information in Table A-3 to enter durations for the other tasks for the Project Tracking Database project. The Project 2003 row number is shown to the left of each task name in the table. Remember that you already entered a duration for the recurring task. Also, remember that you should *not* enter durations for summary tasks. Durations for summary tasks are automatically calculated to match the durations and dependencies of subtasks, as described further in the next section, “Establishing Task Dependencies.”

Table A-3: Durations for Project Tracking Database Tasks


TASK NUMBER/ROW	TASK NAME	DURATION
2	Kickoff meeting	2h
3	Develop project charter	10d
4	Charter signed	0d
6	Develop project plans	3w
7	Review project plans	4mo
8	Project plans approved	0d
10	Analysis	1mo
11	Design	2mo
12	Implementation	1mo
13	System implemented	0d
37	Report performance	5mo
38	Control changes	5mo
40	Prepare final project report	2w
41	Present final project	1w
42	Project completed	0d

To enter task durations for the other tasks:

1. *Enter the duration for Task 2.* Click the **Duration** column for row 2, Kickoff meeting, type **2h**, and then press **Enter**.
2. *Enter the duration for Task 3.* In the **Duration** column for row 3, Develop project charter, type **10d**, then press **Enter**. You can also just type 10, since d or days is the default duration.
3. *Enter remaining task durations.* Continue to enter the durations, using information in Table A-3.
4. *Save your file and name it.* Click **File** on the menu bar, and then click **Save As**. Enter **time** as the filename, and then save the file to the desired location on your computer or network. Keep this file open for the next set of steps.

Establishing Task Dependencies

To use Project 2003 to adjust schedules automatically and to do critical path analysis, you *must* determine the dependencies or relationships among tasks (see Chapter 6, Project Time Management). Project 2003 provides three methods for creating task dependencies: using the Link Tasks button; using the Predecessors column of the Entry table; or clicking and dragging the Gantt chart symbols for tasks with dependencies.


To create dependencies using the Link Tasks button, highlight tasks that are related and then click the Link Tasks button  on the toolbar. For example, to create a finish-to-start dependency between Task 1 and Task 2, click any cell in row 1, drag down to row 2, and then click the Link Tasks button. The default type of link is finish-to-start. In the Project Tracking Database example, all the tasks use this default relationship. You will learn about other types of dependencies later in this appendix.



Selecting tasks is similar to selecting cells in Microsoft Excel. To select adjacent tasks, you can click and drag the mouse. You can also click the first task, hold down the Shift key, and then click the last task. To select nonadjacent tasks, hold down the Control (Ctrl) key as you click tasks in order of their dependencies.

When you use the Predecessors column of the Entry table to create dependencies, you must manually enter the information. To create dependencies manually, type the task row number of the preceding task in the Predecessors column of the Entry table. For example, Task 3 in Table A-3 has Task 2 as a predecessor, which can be entered in the Predecessors column, meaning that

Task 3 cannot start until Task 2 is finished. To see the Predecessors column of the Entry table, move the split bar to the right.

You can also create task dependencies by clicking the Gantt chart symbol for a task and then dragging to the Gantt chart symbol for a task that succeeds it. For example, you could click the Milestone symbol  for Task 4, hold down the left mouse button, and drag to the Task Bar symbol for Task 6 to create a dependency, as shown in the Gantt chart in Figure A-36. Note the Finish-to-Start Link dialog box that appears when you use this method.

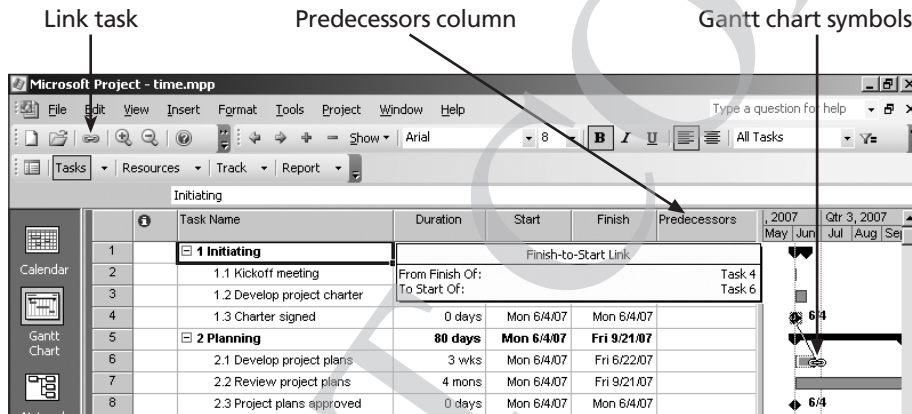




Figure A-36. Creating Task Dependencies

Next, you will use information from Figure A-37 to enter the predecessors for tasks as indicated. You will create some dependencies by manually typing the predecessors in the Predecessors column, some by using the Link Tasks button, some by using the Gantt chart symbols, and the remaining dependencies by using whichever method you prefer.

To link tasks or establish dependencies for the Project Tracking Database project:

1. *Display the Predecessors column in the Entry table.* Move the split bar to the right to reveal the Predecessors column in the time.mpp file. Widen the Task Name or other columns, if needed.
2. *Highlight the cell where you want to enter a predecessor, and then type the task number for the preceding task.* Click the **Predecessors** cell for Task 3, type **2**, and press **Enter**.
3. *Enter predecessors for Task 4.* Click the **Predecessors** cell for Task 4, type **3**, and press **Enter**. Notice that as you enter task dependencies, the Gantt chart changes to reflect the new schedule.

4. *Establish dependencies using the Link Tasks button.* To link Tasks 10 through 13, click the task name for Task 10 in the Task Name column and drag down through Task 13. Then, click the **Link Tasks** button  on the toolbar. Alternately, you can also click **Edit** on the menu bar, and then click **Link Tasks**.
5. *Create a dependency using Gantt chart symbols.* Click the **Milestone** symbol  for Task 4 on the Gantt chart, hold down the **left mouse** button, and drag to the **Task Bar** symbol for Task 6. (See Figure A-36 to see this step in progress.)
6. *Enter remaining dependencies.* Link the other tasks by manually entering the predecessors into the Predecessors column, or by using the Link Tasks button, or clicking and dragging the Gantt chart symbols. You can view the dependencies in Figure A-37. For example, Task 8 has Task 6 as a predecessor, Task 10 has Task 8 as a predecessor, and so on. If you have entered all data correctly, the project should end on 11/19/07.
7. *Adjust screen elements.* Click **View** from the menu bar, select **View Bar** to collapse the View Bar, and then drag the resize line between the Indicator column and the Task Name column to the left to remove the Indicator column, if needed. Click **View** on the menu bar, select **Toolbars**, and then click **Project Guide** to hide the Project Guide toolbar. When you finish, your screen should resemble Figure A-37. Double-check your screen to make sure you entered the dependencies correctly.

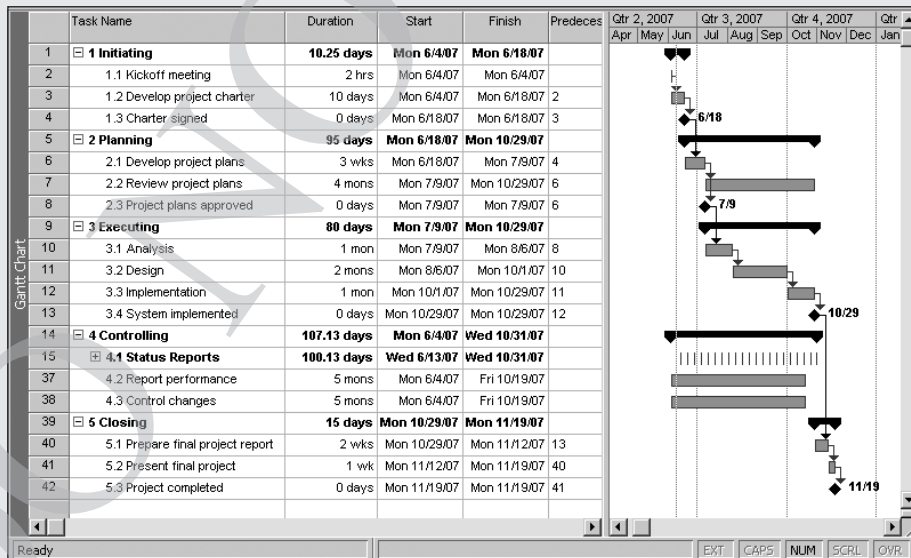





Figure A-37. Project Tracking Database File with Durations and Dependencies Entered

8. *Preview and save your file.* Click **File** on the menu bar, and then select **Print Preview**, or click the **Print Preview** button  on the Standard toolbar. When you are finished, close the Print Preview and save your file again by clicking the **Save** button  on the Standard toolbar. If you desire, print your file by clicking the **Print** button  on the Standard toolbar, or by selecting Print from the File menu. Keep the file open for the next set of steps.



The entire Predecessors column must be visible in the Gantt Chart view for it to show up in the Print Preview. Close the Print Preview and move the split bar to reveal the column fully, and then select Print Preview again. Also, check your timescale to make sure you are not wasting paper by having a timescale too detailed. You should not print your file until the Print Preview displays the desired information.

Changing Task Dependency Types and Adding Lead or Lag Time

A task dependency or relationship describes how a task is related to the start or finish of another task. Project 2003 allows for four task dependencies: finish-to-start (FS), start-to-start (SS), finish-to-finish (FF), and start-to-finish (SF). You can find detailed descriptions of these dependencies in Chapter 6, Project Time Management. By using these dependencies effectively, you can modify the critical path and shorten your project schedule. The most common type of dependency is finish-to-start (FS). All of the dependencies in the Project Tracking Database example are FS dependencies. However, sometimes you need to establish other types of dependencies. This section describes how to change task dependency types. It also explains how to add lead or lag times between tasks. You will shorten the duration of the Project Tracking Database project by adding lead time between some tasks.

To change a dependency type, open the Task Information dialog box for that task by double-clicking the task name. On the Predecessors tab of the Task Information dialog box, select a new dependency type from the Type column list arrow.

The Predecessors tab also allows you to add lead or lag time to a dependency. You can enter both lead and lag time using the Lag column on the Predecessors tab. Lead time reflects an overlap between tasks that have a dependency. For example, if Task B can start when its predecessor, Task A, is half-finished, you can specify a finish-to-start dependency with a lead time of 50 percent for the successor task. Enter lead times as negative numbers. In this example, enter -50% in the first cell of the Lag column. Adding lead times is also called fast tracking and is one way to compress a project's schedule (see Chapter 6).

Lag time is the opposite of lead time—it is a time gap between tasks that have a dependency. If you need a two-day delay between the finish of Task C and the start of Task D, establish a finish-to-start dependency between Tasks C and D and specify a two-day lag time. Enter lag time as a positive value. In this example, type 2d in the Lag column.

In the Project Tracking Database example, notice that work on design tasks does not begin until all the work on the analysis tasks has been completed (see Rows 10 and 11 on the WBS), and work on implementation tasks does not begin until all the work on the design tasks has been completed (see Rows 11 and 12 on the WBS). In reality, it is rare to wait until all of the analysis work is complete before starting any design work, or to wait until all of the design work is finished before starting any implementation work. It is also a good idea to add some additional time, or a buffer, before crucial milestones, such as a system being implemented. To create a more realistic schedule, add lead times to the design and implementation tasks and lag time before the system implemented milestone.

To add lead and lag times:

1. *Open the Task Information dialog box for Task 11, Design.* In the Task Name column, double-click the text for Task 11, **Design**. The Task Information dialog box opens. Click the **Predecessors** tab.
2. *Enter lead time for Task 11.* Type **-10%** in the Lag column, as shown in Figure A-38. Click **OK**. You could also type a value such as -5d to indicate a five-day overlap. In the resulting Gantt chart, notice that the bar for this task has moved slightly to the left. Also, notice that the project completion date has moved from 11/19 to 11/15.

Task Information

General Predecessors Resources Advanced Notes Custom Fields

Name: Design Duration: 2mo Estimated

Predecessors:

ID	Task Name	Type	Lag
10	Analysis	Finish-to-Start (FS)	-10%

Buttons: Help, OK, Cancel

Figure A-38. Adding Lead or Lag Time to Task Dependencies

3. Enter lead time for Task 12. Double-click the text for Task 12, **Implementation**, type **-3d** in the Lag column, and click **OK**. Notice that the project now ends on 11/12 instead of 11/15.
4. Enter lag time for Task 13. Double-click the text for Task 13, **System Implemented**, type **5d** in the Lag column for this task, and click **OK**. Move the split bar to the right, if necessary, to reveal the Predecessors column. When you are finished, your screen should resemble Figure A-39. Notice the slight overlap in the taskbars for Tasks 10 and 11 and the short gap between the taskbars for Tasks 12 and 13. You can zoom in to see the gap more clearly. The project completion date should be 11/19.

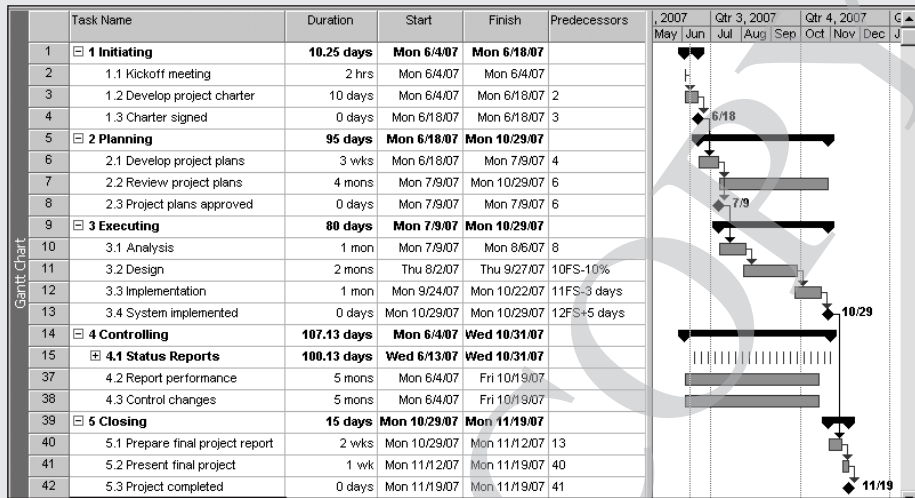


Figure A-39. Schedule for Project Tracking Database File with Lead and Lag Times

5. Save your file. Click **File** on the menu bar, and then click **Save**. Or, click the **Save** button  on the Standard toolbar. Keep this file open for the next set of steps.





You can enter or modify lead or lag times directly in the Predecessors column of the Entry table. Notice how the predecessors appear for Tasks 11, 12, and 13. For example, the Predecessors column for Task 11 shows 10FS-10%. This notation means that Task 11 has a finish-to-start (FS) dependency with Task 10 and a 10 percent lead. You can enter lead or lag times to task dependencies directly into the Predecessors column of the Entry table by using this same format: task row number, followed by type of dependency, followed by the amount of lead or lag.

Gantt Charts

Project 2003 shows a Gantt chart as the default view to the right of the Entry table. Gantt charts show the timescale for a project and all of its activities. In Project 2003, dependencies between tasks are shown on the Gantt chart by the arrows between tasks. Many Gantt charts, however, do not show any dependencies. Instead, as you might recall, network diagrams or PERT charts are used to show task dependencies. See Chapter 6 for more information about Gantt charts and network diagrams. This section explains important information about

Gantt charts and describes how to make critical path information more visible in the Gantt Chart view.

You must follow a few important procedures when working with Gantt charts:

- To adjust the timescale, click the Zoom Out button  or the Zoom In button . Clicking these buttons automatically makes the dates on the Gantt chart show more or less information. For example, if the timescale for the Gantt chart is showing months and you click the Zoom Out button, the timescale will adjust to show quarters. Clicking Zoom Out again will display the timescale in years. Similarly, each time you click the Zoom In button, the timescale changes to display more detailed time information— from years to quarters, quarters to months, and months to weeks.
- You can also adjust the timescale and access more formatting options by selecting Timescale from the Format menu. Adjusting the timescale enables you to see the entire Gantt chart on one screen and in the time increments that you desire.
- A Gantt Chart Wizard is available on the Format menu. This wizard helps you adjust the format of the Gantt chart. For example, you can select an option to display critical path information on the Gantt chart, and those items on the critical path will automatically display using a red bar.
- You can view a tracking Gantt chart by setting a baseline for your entire project or for selected tasks and then entering actual durations for tasks. The Tracking Gantt view displays two taskbars, one above the other, for each task. One taskbar shows planned or baseline start and finish dates, and the other taskbar shows actual start and finish dates. You will find a sample tracking Gantt chart later in this appendix, after you enter actual information for the Project Tracking Database project.

Because you have already created task dependencies, you can now find the critical path for the Project Tracking Database project. You can view the critical tasks by changing the color of those items on the critical path in the Task Name column. You can also change the color of bars on the Gantt chart. Tasks on the critical path will automatically be red in the Network Diagram view, as described in the following section.

To make the text for the critical path tasks appear in red in the Entry table and on the Gantt chart:

1. *Open the Text Styles dialog box.* Click **Format** on the menu bar, and then click **Text Styles**. The Text Styles dialog box opens.
2. *Change the critical tasks color option to red.* Click the **Item to Change** list arrow, and then select **Critical Tasks**. Click the **Color** list arrow, and then select **Red**, as shown in Figure A-40. Click **OK** to accept the changes to the text styles.

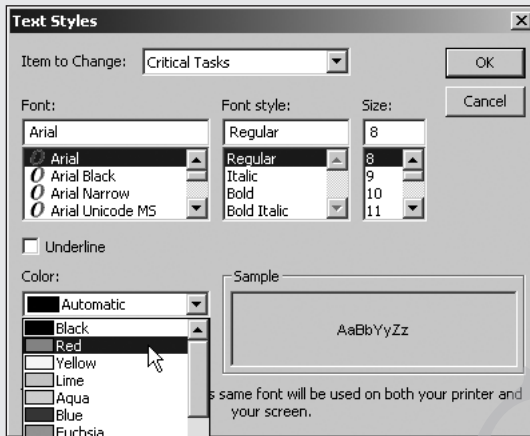



Figure A-40. Text Styles Dialog Box Settings to Display Critical Tasks in Red

3. Open the Gantt Chart Wizard. Click **Format** on the menu bar and then select **Gantt Chart Wizard**. Alternately, you can click the Gantt Chart Wizard button  on the Formatting toolbar. The Gantt Chart Wizard opens. Click **Next**, and the next step of the wizard appears.
4. Select the Critical Path option. Click the **Critical path** radio button, as shown in Figure A-41. Notice that the sample Gantt chart in the Gantt Chart Wizard displays some bars in red, representing tasks on the critical path. Click **Finish** to proceed to the next step in the Gantt Chart Wizard.

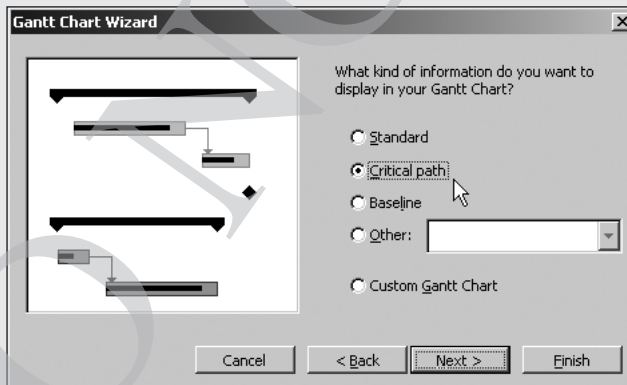




Figure A-41. Gantt Chart Wizard Showing Critical Path Format

5. *Format the Gantt chart.* Click **Format It**, and then click **Exit Wizard**. Critical taskbars on the Gantt chart will now be red. Your screen should resemble Figure A-39, but now task information and bars for all the critical tasks are displayed in red.
6. *Save your file without a baseline.* Click **File** on the menu bar, and then click **Save**. Or, click the **Save** button  on the Standard toolbar to save your file. Keep this file open for the next set of steps.

Network Diagrams

The network diagrams in Project 2003 use the precedence diagramming method, with tasks displayed in rectangular boxes and relationships shown by lines connecting the boxes. In the Network Diagram view, tasks on the critical path are automatically shown in red.

To view the network diagram for the Project Tracking Database project:

1. *View the network diagram.* Click **View** on the menu bar, and then click **View Bar**. Click the **Network Diagram** button  on the View Bar or select **Network Diagram** from the View menu.
2. *Adjust the Network Diagram view.* To see more tasks in the Network Diagram view, click the **Zoom Out** button  twice. You can also use the scroll bars to see different parts of the network diagram. Figure A-42 shows several of the tasks in the Project Tracking Database network diagram. Note that milestone tasks, such as Charter signed, appear as pointed rectangular boxes, while other tasks appear as rectangles. Tasks on the critical path automatically appear in red, while noncritical tasks appear in blue. Each task in the network diagram also shows information such as the start and finish dates, task ID, and duration. Move your mouse over any of the boxes to see them in a larger view. A dashed line on a network diagram represents a page break. You often need to change some of the default settings for the Network Diagram view before printing it.

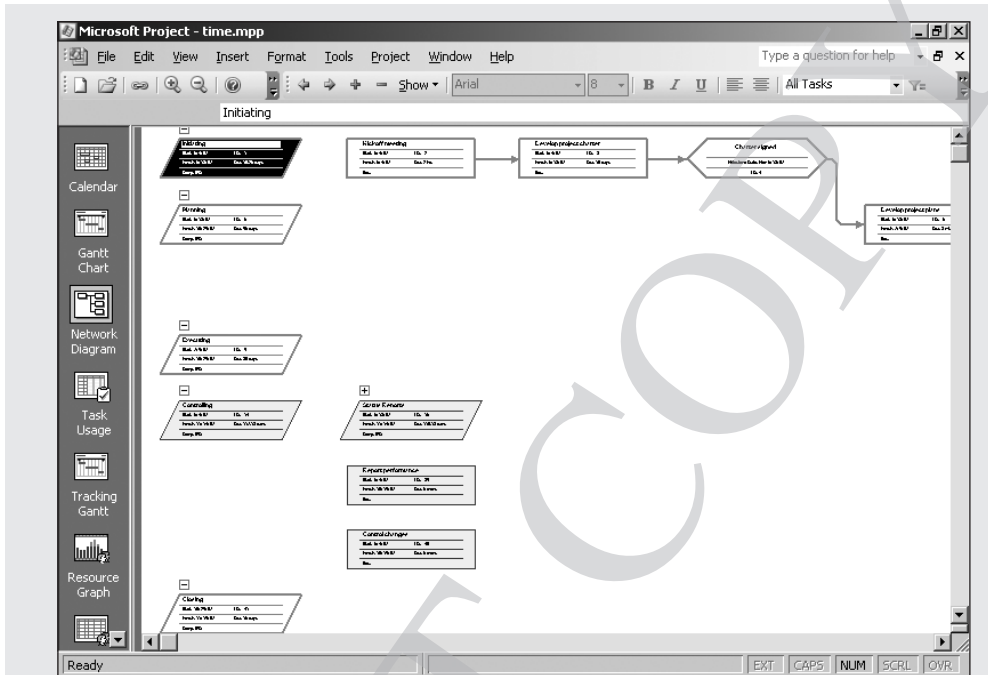



Figure A-42. Network Diagram View

- View the *Help* topic on rearranging network diagram boxes. Click the **Microsoft Project Help** button  on the Standard toolbar or press **F1** to display the Office Assistant. Type **How do I rearrange the network diagram?** in the text box and then press **Enter**. Click the resulting Help topic called **Rearrange Network Diagram boxes**. Figure A-43 shows the resulting Project 2003 Help window. Note that you can change several layout options for the network diagram, hide fields, and manually position boxes. Close the Help window, and then close the Search Results window.

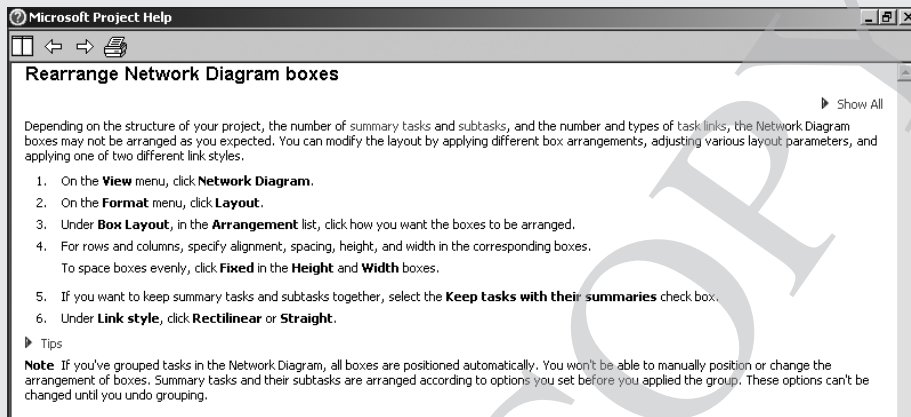


Figure A-43. Project 2003 Help Window for Rearranging the Network Diagram Boxes

4. Return to *Gantt Chart* view. Click the **Gantt Chart** button  on the View Bar to return to Gantt Chart view. Alternately, you can select **Gantt Chart** from the View menu on the menu bar. Keep this file open for the next set of steps.



Some people create new Project 2003 files or add tasks to existing files in *Network Diagram* view instead of *Gantt Chart* view. To add a new task or node in *Network Diagram* view, select **New Task** from the **Insert** menu, or press the **Insert** key on your keyboard. Double-click the new node to add a task name and other information. Create **finish-to-start** dependencies between tasks in *Network Diagram* view by clicking the preceding node and dragging to the succeeding node. To modify the type of dependency and add **lead** or **lag** time, double-click the arrow between the dependent nodes.

Critical Path Analysis

Recall that the critical path is the path through the network diagram with no slack or the least amount of slack; it represents the shortest possible time to complete the project (see Chapter 6). If a task on the critical path takes longer than planned, the project schedule will slip unless time is reduced on a task later on the critical path. Sometimes you can shift resources between tasks to help keep a project on schedule. Project 2003 has several views and reports to help analyze critical path information.

Two particularly useful features are the Schedule table view and the Critical Tasks report. The Schedule table view shows the early and late start dates for each task, the early and late finish dates for each task, and the free and total slack for each task. This information shows how flexible the schedule is and helps in making schedule compression decisions. The Critical Tasks report lists only tasks that are on the critical path for the project. If meeting schedule deadlines is essential for a project, project managers will want to monitor tasks on the critical path closely.

To access the Schedule table view and view the Critical Tasks report for a file:

1. *View the Schedule table.* Right-click the **Select All** button to the left of the Task Name column heading and select **Schedule**. Alternatively, you can click **View** on the menu bar, point to **Table: Entry**, and then click **Schedule**. The Schedule table replaces the Entry table to the left of the Gantt chart.
2. *Reveal all columns in the Schedule table.* Move the split bar to the right until you see the entire Schedule table. Your screen should resemble Figure A-44. This view shows the start and finish (meaning the early start and early finish) and late start and late finish dates for each task, as well as free and total slack. Right-click the **Select all** button and select **Entry** to return to the Entry table view.

Select All button

Task Name	Start	Finish	Late Start	Late Finish	Free Slack	Total Slack
1 Initiating	Mon 6/4/07	Mon 6/18/07	Mon 6/4/07	Mon 6/18/07	0 days	0 days
1.1 Kickoff meeting	Mon 6/4/07	Mon 6/4/07	Mon 6/4/07	Mon 6/4/07	0 hrs	0 hrs
3 4.2 Develop projec	Mon 6/4/07	Mon 6/18/07	Mon 6/4/07	Mon 6/18/07	0 days	0 days
4 1.3 Charter signed	Mon 6/18/07	Mon 6/18/07	Mon 6/18/07	Mon 6/18/07	0 days	0 days
5 2 Planning	Mon 6/18/07	Mon 10/29/07	Mon 6/18/07	Mon 11/19/07	0 days	0 days
6 2.1 Develop projec	Mon 6/18/07	Mon 7/9/07	Mon 6/18/07	Mon 7/9/07	0 wks	0 wks
7 2.2 Review projec	Mon 7/9/07	Mon 10/29/07	Mon 7/30/07	Mon 11/19/07	0.75 mons	0.75 mons
8 2.3 Project plans a	Mon 7/9/07	Mon 7/9/07	Mon 7/9/07	Mon 7/9/07	0 days	0 days
9 3 Executing	Mon 7/9/07	Mon 10/29/07	Mon 7/9/07	Mon 10/29/07	0 days	0 days
10 3.1 Analysis	Mon 7/9/07	Mon 8/6/07	Mon 7/9/07	Mon 8/6/07	0 mons	0 mons
11 3.2 Design	Thu 8/2/07	Thu 9/27/07	Thu 8/2/07	Thu 9/27/07	0 mons	0 mons
12 3.3 Implementation	Mon 9/24/07	Mon 10/22/07	Mon 9/24/07	Mon 10/22/07	0 mons	0 mons
13 3.4 System implem	Mon 10/29/07	Mon 10/29/07	Mon 10/29/07	Mon 10/29/07	0 days	0 days
14 4 Controlling	Mon 6/4/07	Wed 10/31/07	Mon 7/2/07	Mon 11/19/07	13.13 days	13.13 days
15 4.1 Status Repor	Wed 6/13/07	Wed 10/31/07	Mon 11/19/07	Mon 11/19/07	13.13 days	13.13 days
37 4.2 Report perform	Mon 6/4/07	Fri 10/19/07	Mon 7/2/07	Mon 11/19/07	1.01 mons	1.01 mons
38 4.3 Control change	Mon 6/4/07	Fri 10/19/07	Mon 7/2/07	Mon 11/19/07	1.01 mons	1.01 mons
39 5 Closing	Mon 10/29/07	Mon 11/19/07	Mon 10/29/07	Mon 11/19/07	0 days	0 days
40 5.1 Prepare final p	Mon 10/29/07	Mon 11/12/07	Mon 10/29/07	Mon 11/12/07	0 wks	0 wks
41 5.2 Present final pi	Mon 11/12/07	Mon 11/19/07	Mon 11/12/07	Mon 11/19/07	0 wks	0 wks
42 5.3 Project comple	Mon 11/19/07	Mon 11/19/07	Mon 11/19/07	Mon 11/19/07	0 days	0 days

Figure A-44. Schedule Table View

3. Open the Reports dialog box. Click **View** on the menu bar, and then click **Reports**. Double-click **Overview** to open the Overview Reports dialog box. Your screen should resemble Figure A-45.

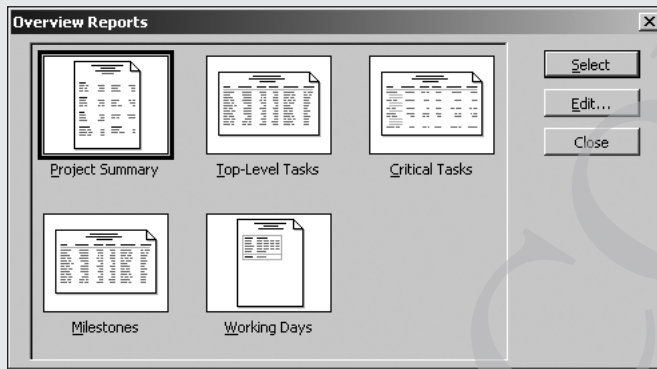



Figure A-45. Accessing the Critical Tasks Report

4. Display the Critical Tasks report. Double-click **Critical Tasks**. A Critical Tasks report as of today's date is displayed.
5. Close the report and save your file. When you are finished examining the Critical Tasks report, click **Close**. Click **Close** on the Reports dialog box. Click the **Save** button  on the Standard toolbar to save your file. Close Project 2003 if you are not continuing to the next section.



If you want to download the completed time.mpp file to check your work or continue to the next section, a copy is available on the companion Web site for this text or from your instructor.

Now that you have entered task durations, established task dependencies, and reviewed the network diagram and critical path information, you are ready to explore some of the Project 2003 cost management features.

PROJECT COST MANAGEMENT

Many people do not use Project 2003 for cost management. Most organizations have more established cost management software products and procedures in place, and many people simply do not know how to use the cost features. Using the cost features of Project 2003, however, makes it possible to integrate

total project information more easily. This section offers brief instructions for entering fixed and variable cost estimates and actual cost and time information after establishing a baseline plan. It also explains how to use Project 2003 for earned value management. More details on these features are available in Project 2003 Help, online tutorials, or other books.



To complete the steps in this section, you need to download the Project 2003 file resource.mpp from the companion Web site for this book and save it on a floppy disk or with your other project files on your hard drive.

Fixed and Variable Cost Estimates

The first step to using the cost features of Project 2003 is entering cost-related information. You enter costs as fixed or variable based on per-use material costs, or variable based on the type and amount of resources used. Costs related to personnel are often a significant part of project costs.

Entering Fixed Costs in the Cost Table

The Cost table allows you to enter fixed costs related to each task. To access the Cost table, right-click the Select All button and select Cost or select Table: Cost from the View menu. Figure A-46 shows the resulting view for the Project Tracking Database project using time.mpp. You can also assign a per-use cost to a resource that represents materials or supplies and use it as a base for calculating the total materials or supplies cost of a task. See Project 2003 Help for details on this feature.

Task Name	Fixed Cost	Fixed Cost Accrual	Total Cost	Baseline	Variance	Actual	Re
1 Initiating	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
1.1 Kickoff meeting	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
3 1.2 Develop project charter	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
4 1.3 Charter signed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
5 2 Planning	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
6 2.1 Develop project plans	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
7 2.2 Review project plans	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
8 2.3 Project plans approved	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
9 3 Executing	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
10 3.1 Analysis	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
11 3.2 Design	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
12 3.3 Implementation	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
13 3.4 System implemented	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
14 4 Controlling	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
15 4.1 Status Reports	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
39 4.2 Report performance	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
40 4.3 Control changes	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
41 5 Closing	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
42 5.1 Prepare final project report	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
43 5.2 Present final project	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	
44 5.3 Project completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	

Figure A-46. Cost Table View

Entering Human Resource Costs

Human resources represent a major part of the costs on many projects. By defining and then assigning human resources and their related costs to tasks in Project 2003, you can calculate human resource costs, track how people are used, identify potential resource shortages that could force you to miss deadlines, and identify underutilized resources. It is often possible to shorten a project's schedule by reassigning underutilized resources. This section focuses on entering human resource costs and assigning resources to tasks. The following section describes other features of Project 2003 related to human resource management.

There are several methods for entering resource information in Project 2003. One of the easiest is to enter basic resource information in the Resource Sheet. Access the Resource Sheet from the View Bar, or by selecting Resource Sheet from the View menu. The Resource Sheet allows you to enter the resource name, initials, resource group, maximum units, standard rate, overtime rate, cost/use, accrual method, base calendar, and code. Entering data into the Resource Sheet is similar to entering data into an Excel spreadsheet, and you

can easily sort items by selecting Sort from the Project menu. In addition, you can use the Filter list on the Formatting toolbar to filter resources. Once you have established resources in the Resource Sheet, you can assign those resources to tasks in the Entry table with the list arrow that appears when you click a cell in the Resource Names column. The Resource Names column is the last column of the Entry table. You can also use other methods for assigning resources, as described below.

Next, you will use the Project 2003 file time.mpp, which you saved in the preceding section, to assign resources to tasks. (If you did not save your file, download it from the companion Web site for this text.) Assume that there are four people working on the Project Tracking database project. Assume that the only costs for this project are for these human resources: Kathy is the project manager; John is the business analyst; Mary is the database analyst; and Chris is an intern or trainee.

To enter basic information about each person into the Resource Sheet:


1. *Display the Resource Sheet view.* Open your Project 2003 file, time.mpp, if necessary. Click the **Resource Sheet** button  on the View Bar (you may need to scroll to see it), or click **View** on the menu bar, and then click **Resource Sheet**.
2. *Enter resource information.* Enter the information from Table A-4 into the Resource Sheet. Type the information as shown and press the **Tab** key to move to the next field. Notice that you are putting abbreviated job titles in the Initials column: PM stands for project manager; BA stands for business analyst; DA stands for database analyst; and IN stands for intern. When you type the standard and overtime rates, you can just type 50, and Project 2003 will automatically enter \$50.00/hr. The standard and overtime rates entered are based on hourly rates. You can also enter annual salaries by typing the annual salary number followed by /y for “per year.” Leave the default values for the other columns in the Resource Sheet as they are. Your screen should resemble Figure A-47 when you are finished entering the resource data.

Table A-4: Project Tracking Database Resource Data

RESOURCE NAME	INITIALS	GROUP	STAND. RATE	OVT. RATE
Kathy	PM	1	\$50.00/h	\$60.00/h
John	BA	1	\$40.00/h	\$50.00/h
Mary	DA	1	\$40.00/h	\$50.00/h
Chris	IN	1	\$20.00/h	\$25.00/h

	Resource Name	Type	Material Label	Initials	Group	Max. Units	Std. Rate	Ovt. Rate	Cost
1	Kathy	Work		PM	1	100%	\$50.00/hr	\$60.00/hr	
2	John	Work		BA	1	100%	\$40.00/hr	\$50.00/hr	
3	Mary	Work		DA	1	100%	\$40.00/hr	\$50.00/hr	
4	Chris	Work		IN	1	100%	\$20.00/hr	\$25.00/hr	

Figure A-47. Resource Sheet View with Resource Data Entered



If you know that some people will be available for a project only part-time, enter their percentage of availability in the Max Units column of the Resource Sheet. Project 2003 will then automatically assign those people based on their maximum units. For example, if someone can work only 25 percent of their time on a project throughout most of the project, enter 25% in the Max Units column for that person. When you enter that person as a resource for a task, his or her default number of hours will be 25 percent of a standard eight-hour workday, or two hours per day.

Adjusting Resource Costs

To make a resource cost adjustment, such as a raise, for a particular resource, double-click the person's name in the Resource Name column, select the Costs tab in the Resource Information dialog box, and then enter the effective date and raise percentage. You can also adjust other resource cost information, such as standard and overtime rates.

To give the project manager a 10 percent raise starting 8/1/07:

1. *Open the Resource Information dialog box.* In Resource Sheet view, double-click **Kathy** in the Resource Name column. The Resource Information dialog box opens.
2. *Enter an effective date for a raise.* Select the **Costs** tab, and then select **tab A**, if needed. Type **8/1/07** in the second cell in the Effective Date column and press **Enter**. Alternately, click the **list arrow** in the second cell and use the calendar that appears to enter the effective date.
3. *Enter the raise percentage.* Type **10%** in the second cell for the Standard Rate column, and then press **Enter**. The Resource Information screen should resemble Figure A-48. Notice that Project 2003 calculated the 10% raise to be \$55.00/h. Click **OK**.

Resource Information

General Working Time Costs Notes Custom Fields

Resource Name: Kathy

Cost rate tables

For rates, enter a value or a percentage increase or decrease from the previous rate. For instance, if a resource's Per Use Cost is reduced by 20%, type -20%.


Effective Date	Standard Rate	Overtime Rate	Per Use Cost
--	\$50.00/h	\$60.00/h	\$0.00
Wed 8/1/07	\$55.00/h	\$60.00/h	\$0.00

Cost accrual: Prorated

Help Details... OK Cancel

Figure A-48: Adjusting Resource Costs

Assigning Resources to Tasks

For Project 2003 to calculate resource costs, you must assign the appropriate resources to tasks in your WBS. There are several methods for assigning resources. The Resources column in the Entry table allows you to select a resource using a list. You can, however, use this method to assign only one resource to a task full-time. You often need to use other methods to assign resources, such as the Assign Resources button  on the Resource Management toolbar or the Resource Cost window, to ensure that Project 2003 captures resource assignments as you intend them. Next, you will use these three methods for assigning resources to the Project Tracking Database project.

Assigning Resources Using the Entry Table


To assign resources using the Entry table:

1. Select the task to which you want to assign resources. Click the **Gantt Chart** button on the View Bar. Click **View** on the menu bar, and then click **Table: Entry**, if necessary, to return to the Entry table.

2. *Reveal the Resource Names column of the Entry table.* Move the split bar to the right to reveal the entire Resource Names column in the Entry table.
3. *Select a resource from the Resource Names column.* In the Resource Names column, click the cell associated with Task 2, **Kickoff meeting**. Click the cell's **list arrow**, and then click **Kathy** to assign her to Task 2. Notice that the resource choices are based on information that you entered in the Resource Sheet. If you had not entered any resources, you would not have a list arrow or any choices to select.
4. *Try to select another resource for Task 2.* Again, click the cell's **list arrow** in the Resource Names column for Task 2, click **John**, and then press **Enter**. Notice that only John's name appears in the Resource Names column. You can assign only one resource to a task using this method.
5. *Clear the resource assignment.* Right-click the **Resource Names** column for Task 2, and then select **Clear Contents** to remove the resource assignments.

Assigning Resources Using the Toolbar

To assign resources using the Resource Management toolbar:

1. *Select the task to which you want to assign resources.* Click the task name for Task 2, **Kickoff meeting**, in the second row of the Task Name column.
2. *Open the Assign Resources dialog box.* Click the **Assign Resources** button  on the Resource Management toolbar. (If the Assign Resources button is not visible, click the **Toolbar Options** button on the Resource Management toolbar, and then click the **Assign Resources** button.) The Assign Resources dialog box, which lists the names of the people assigned to the project, is displayed, as shown in Figure A-49. This dialog box remains open while you move from task to task to assign resources. Click the **expand symbol** to the left of **Resource list options**.

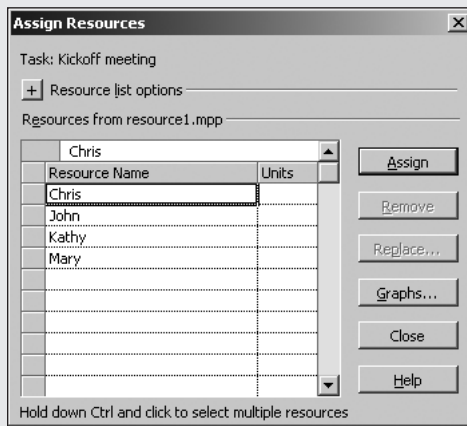


Figure A-49. Assign Resources Dialog Box

3. *Assign Kathy to Task 2.* Click **Kathy** in the Resource Name column of the Assign Resources dialog box, and then click **Assign**. Notice that the duration estimate for Task 2 remains at 2 hours, and Kathy's name appears on the Gantt chart by the bar for Task 2.
4. *Assign John to Task 2.* Click **John** in the Resource Name column of the Assign Resources dialog box, and then click **Assign**. The duration for Task 2 changes to 1 hour, *but you do not want this change to occur*. Click **Close** in the Assign Resources dialog box.
5. *Clear the resource assignments.* Right-click the **Resource Names** column for Task 2, and then select **Clear Contents** to remove the resource assignments.
6. *Reenter the duration for Task 2.* Type **2h** in the Duration column for Task 2 and press **Enter**.

Assigning Resources Using the Split Window and Resource Cost View

Even though using the Assign Resources button seems simpler, it is often better to use a split window and the Resource Cost view when assigning resources. When you assign resources using the split view, the durations of tasks will not automatically change when you assign more resources, and you have more control over how you enter information. Project 2003 Help offers more information on different options for resource assignment.

To assign both Kathy and John to attend the two-hour kickoff meeting:

1. *Split the window to reveal more information.* Click **Window** on the menu bar, and then click **Split**. The Gantt Chart view is displayed at the top of the screen and a resource information table is displayed at the bottom of the screen.
2. *Open the Resource Cost window.* Right-click anywhere in the bottom window and select **Resource Cost**.
3. *Assign Kathy to Task 2.* Select Task 2, **Kickoff meeting** in the top window, and then click the first cell in the **Resource Name** column in the Resource Cost window. Click the cell's **list arrow** and select **Kathy**. Press **Enter**.
4. *Assign John to Task 2.* Click the cell's **list arrow** and select **John**. Press **Enter**.
5. *Enter the resource assignment and review the Gantt chart.* Click **OK** in the Resource Cost window. Your screen should resemble Figure A-50. Notice that the duration for Task 2 is still two hours, and both Kathy and John are assigned to that task 100%. You can also enter a different percentage under the Units column if resources will not work 100 percent of their available time on a task. Note that the default settings are that tasks are effort driven and the Task type is Fixed Units. You will learn more about these settings later.

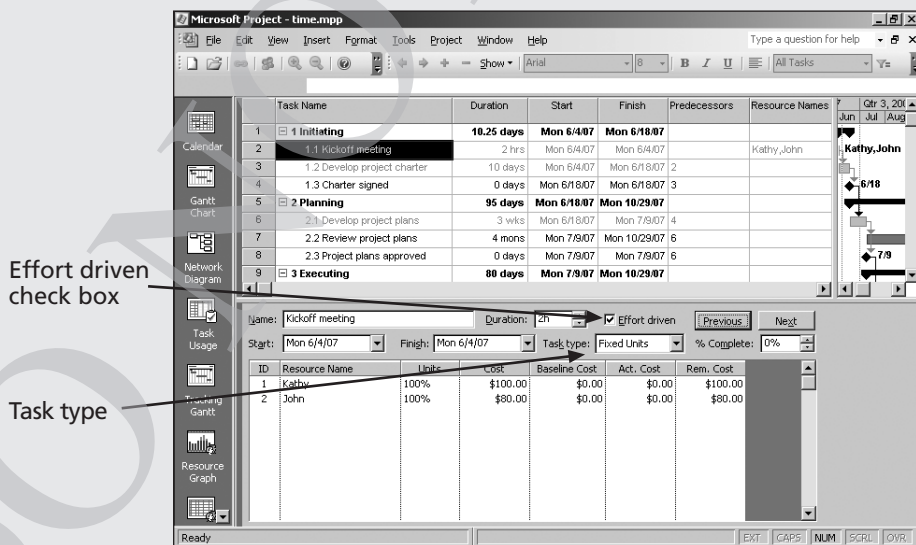


Figure A-50. Split Screen View for Entering Resource Information

6. *Open the Resource Schedule window.* Right-click anywhere in the lower window and select **Resource Schedule**. Notice that Kathy and John are assigned to Task 2 for two hours, as you intended. You can also enter resource information using the Resource Schedule option.
7. *Close the file and do not save it.* Close the file, but do not save the changes you made. Other resource information has been entered for you in the Project 2003 file named resource.mpp, available on the companion Web site for this text.



A copy of the Project 2003 file resource.mpp is available on the companion Web site for this text or from your instructor. You must use this file to continue the steps in the next section.

As you can see, you must be careful when assigning resources. Project 2003 assumes that the durations of tasks are not fixed, but are effort-driven, and this assumption can create some problems when you are assigning resources. Figure A-51 shows the results of adding resources with different settings. The first four task entries assume the task, Design, is effort-driven. When you assign one resource to the Design task, John, the duration is one month. If you later assign two resources, John and Mary, to that same task without changing any settings, Project 2003 automatically adjusts the duration of that task to half its original duration, or 0.5 months. If you change the task type to be Fixed Duration and assign two resources, the duration remains at one month and each resource is assigned 50 percent to the task. If you change the type to Fixed Work and assign two resources, the duration is cut in half and the resources are assigned full-time. The bottom part of Figure A-51 shows the results when a task is not effort-driven or when you assign the Fixed Work task type. You must be very careful when entering resource information to make sure the task duration and work hours reflect what you want.

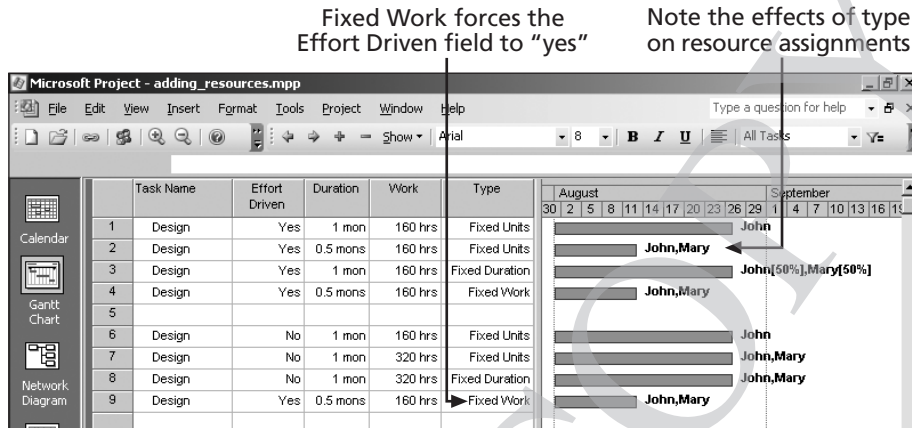


Figure A-51. Results of Adding Resources With Various Task Types

Viewing Project Cost Information

Once you enter resource information, Project 2003 automatically calculates resource costs for the project. There are several ways to view project cost information. You can view the Cost table to see cost information, or you can run various cost reports. Next, you will view cost information for the Project Tracking Database project.

To view cost information:

1. *Open resource.mpp.* Download **resource.mpp** from the companion Web site for this text or get it from your instructor. Open the file.
2. *Open the Cost table.* Right-click the **Select All** button and click **Cost**, or click **View** on the menu bar, point to **Table: Entry**, and then click **Cost**. The Cost table displays cost information and the Gantt chart. Move the split bar to the right to reveal all of the columns. Your screen should resemble Figure A-52. Note that by assigning resources, costs have been automatically calculated for tasks. You could also enter fixed costs for tasks in the cost table, but there are no fixed costs associated with this project.

	Task Name	Fixed Cost	Fixed Cost Accrual	Total Cost	Baseline	Variance	Actual	Remaining
1	1 Initiating	\$0.00	Prorated	\$2,710.00	\$0.00	\$2,710.00	\$0.00	\$2,710.00
2	1.1 Kickoff meeting	\$0.00	Prorated	\$190.00	\$0.00	\$190.00	\$0.00	\$190.00
3	1.2 Develop project charter	\$0.00	Prorated	\$2,520.00	\$0.00	\$2,520.00	\$0.00	\$2,520.00
4	1.3 Charter signed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5	2 Planning	\$0.00	Prorated	\$7,460.00	\$0.00	\$7,460.00	\$0.00	\$7,460.00
6	2.1 Develop project plans	\$0.00	Prorated	\$5,700.00	\$0.00	\$5,700.00	\$0.00	\$5,700.00
7	2.2 Review project plans	\$0.00	Prorated	\$1,760.00	\$0.00	\$1,760.00	\$0.00	\$1,760.00
8	2.3 Project plans approved	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
9	3 Executing	\$0.00	Prorated	\$30,400.00	\$0.00	\$30,400.00	\$0.00	\$30,400.00
10	3.1 Analysis	\$0.00	Prorated	\$7,920.00	\$0.00	\$7,920.00	\$0.00	\$7,920.00
11	3.2 Design	\$0.00	Prorated	\$12,000.00	\$0.00	\$12,000.00	\$0.00	\$12,000.00
12	3.3 Implementation	\$0.00	Prorated	\$10,480.00	\$0.00	\$10,480.00	\$0.00	\$10,480.00
13	3.4 System implemented	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
14	4 Controlling	\$0.00	Prorated	\$6,564.35	\$0.00	\$6,564.35	\$0.00	\$6,564.35
15	4.1 Status Reports	\$0.00	Prorated	\$3,484.35	\$0.00	\$3,484.35	\$0.00	\$3,484.35
37	4.2 Report performance	\$0.00	Prorated	\$880.00	\$0.00	\$880.00	\$0.00	\$880.00
38	4.3 Control changes	\$0.00	Prorated	\$2,200.00	\$0.00	\$2,200.00	\$0.00	\$2,200.00
39	5 Closing	\$0.00	Prorated	\$2,640.00	\$0.00	\$2,640.00	\$0.00	\$2,640.00
40	5.1 Prepare final project report	\$0.00	Prorated	\$2,200.00	\$0.00	\$2,200.00	\$0.00	\$2,200.00
41	5.2 Present final project	\$0.00	Prorated	\$440.00	\$0.00	\$440.00	\$0.00	\$440.00
42	5.3 Project completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Figure A-52. Cost Table for the Resource File

3. Open the Cost Reports dialog box. Click **View** on the menu bar, and then click **Reports**. Double-click **Costs** to display the Cost Reports dialog box.
4. Set the time units for the report. Click **Cash Flow**, if necessary, and then click **Edit**. The Crosstab Report dialog box is displayed. Click the **Column** list arrow and select **Months**, as shown in Figure A-53. Click **OK**.

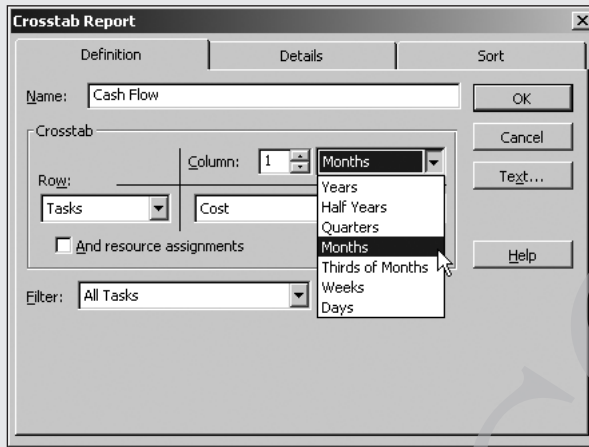


Figure A-53. Crosstab Report Dialog Box

5. View the Cash Flow report. Click **Select** in the Cost Reports dialog box. A Cash Flow report for the Project Tracking Database project appears, as shown in Figure A-54. Click **Close**.

	June	July	August	September	October	November	Total
Initiating							
Kickoff meeting		\$190.00					\$190.00
Develop project charter		\$2,520.00					\$2,520.00
Charter signed							
Planning							
Develop project plans		\$3,705.00	\$1,995.00				\$5,700.00
Review project plans			\$368.50	\$506.00	\$440.00	\$445.50	\$1,760.00
Project plans approved							
Executing							
Analysis			\$6,833.00	\$1,287.00			\$7,920.00
Design			\$6,525.00	\$5,475.00			\$12,000.00
Implementation				\$2,489.00	\$7,991.00		\$10,480.00
System implemented							
Controlling							
Status Reports		\$462.40	\$765.60	\$800.40	\$696.00	\$769.95	\$3,484.35
Report performance		\$176.00	\$193.60	\$202.40	\$176.00	\$132.00	\$880.00
Control changes		\$440.00	\$484.00	\$506.00	\$440.00	\$330.00	\$2,200.00
Closing							
Prepare final project report					\$605.00	\$1,595.00	\$2,200.00
Present final project						\$440.00	\$440.00
Project completed							
total		\$7,483.40	\$10,439.70	\$9,826.80	\$9,716.00	\$10,273.45	\$2,035.00
							\$49,774.35

Figure A-54. Cash Flow Report

6. *View the Project Summary report.* In the Reports dialog box, double-click **Overview**, and then double-click **Project Summary**. A Project Summary report for the Project Tracking Database project is displayed, listing information such as project baseline start and finish dates; actual start and finish dates; summaries of duration, work hours, and costs; as well as variance information. Since you have not yet saved the file as a baseline, much of this information is blank in the report. The Project Summary report provides a high-level overview of a project. Click **Close** to close the report after reviewing it. Click **Close** on the Reports dialog box. Keep this file open for the next set of steps.



You can edit many of the report formats in Project 2003. Instead of double-clicking the report, highlight the desired report, and then click **Edit**.

The total estimated cost for this project, based on the information entered, should be \$49,774.35, as shown in the Cash Flow and Project Summary reports. In the next section, you will save this data as a baseline plan and enter actual information.

Baseline Plan, Actual Costs, and Actual Times

Once you complete the initial process of creating a plan—entering tasks, establishing dependencies, assigning costs, and so on—you are ready to set a baseline plan. By comparing the information in your baseline plan to an updated plan during the course of the project, you can identify and solve problems. After the project ends, you can use the baseline and actual information to plan similar, future projects more accurately. To use Project 2003 to help control projects, you must establish a baseline plan, enter actual costs, and enter actual durations.

Establishing a Baseline Plan

An important part of project management is setting a baseline plan. If you plan to compare actual information such as durations and costs, you must first save the Project 2003 file as a baseline. The procedure involves selecting Tracking, and then Save Baseline from the Tools menu. Before setting a baseline, you must complete the baseline plan by entering time, cost, and human resources information. Be careful not to save a baseline until you have completed the baseline plan. If you do save a baseline before completing the baseline plan, Project 2003 allows you to save up to ten baselines. You can then clear unwanted baseline plans.

Even though you can clear a baseline plan or save multiple baselines, it is a good idea to save a separate, backup file of the original baseline for your project. Enter actuals and save that information in the main file, but always keep a backup baseline file without actuals. Keeping separate baseline and actual files will allow you to return to the original file in case you ever need to use it again.

To rename resource.mpp and then save it as a baseline plan in Project 2003:

1. *Save resource.mpp as a new file named baseline.mpp.* Click **File** on the menu bar, and then click **Save As**. Type **baseline** as the filename, and then click **Save**.
2. *Open the Save Baseline dialog box.* Click **Tools** on the menu bar, select **Tracking**, and then click **Save Baseline**. The Save Baseline dialog box is displayed. Click the **Baseline** list arrow to reveal multiple baselines, as shown in Figure A-55.

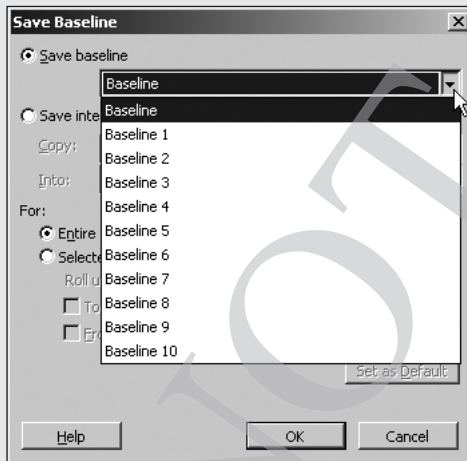


Figure A-55. Save Baseline Dialog Box Showing Ability to Save Multiple Baselines

3. *Review the Save Baseline options, and save the entire project as a baseline.* If necessary, click the **Save baseline** radio button and the **Entire project** radio button. Use the default option of the first Save baseline name of just Baseline. These options should be the default settings in Project 2003. Click **OK**.













Tip

Notice that there are several options in the Save Baseline dialog box, as shown in Figure A-55. You can save the file as an interim plan if you anticipate several versions of the plan. You can also select the entire project or selected tasks when saving a baseline or interim plan. As mentioned above, you can save up to ten baselines with Project 2003.

Entering Actual Costs and Times

After you set the baseline plan, it is possible to track information on each of the tasks as the project progresses. You can also adjust planned task information for tasks still in the future. The Tracking table displays tracking information, and the Tracking toolbar helps you enter this information. Figure A-56 describes each button on the Tracking toolbar. The 100% button and the Update as Scheduled button are the most commonly used buttons for entering actual information. Note that the functions of these buttons have not changed from Project 2002 except that the Collaborate Toolbar button is no longer available.


BUTTON	NAME	DESCRIPTION
	Project Statistics	Provides summary information about the project baseline, the actual project start and finish dates, and overall project duration, costs, and work
	Update as Scheduled	Updates the selected tasks to indicate that actual dates, costs, and work match the scheduled dates, costs, and work
	Reschedule Work	Schedules the remaining duration for a task that is behind schedule so that it will continue from the status date
	Add Progress Line	Displays a progress line on the Gantt chart from a date that you select on the time scale
	0% Complete	Marks the selected tasks as 0% complete as of the status date (Actual date, work, and duration data is updated)
	25% Complete	Marks the selected tasks as 25% complete as of the status date (Actual date, work, and duration data is updated)
	50% Complete	Marks the selected tasks as 50% complete as of the status date (Actual date, work, and duration data is updated)
	75% Complete	Marks the selected tasks as 75% complete as of the status date (Actual date, work, and duration data is updated)
	100% Complete	Marks the selected tasks as 100% complete as of the status date (Actual date, work, and duration data is updated)
	Update Tasks	Displays the Update Tasks dialog box for the selected tasks so that you can enter their percentages completed, actual durations, remaining durations, or actual start or finish dates

Bunin, Rachel. (2004) *New Perspectives on Microsoft Office Project 2003, Introductory*, Course Technology (253).

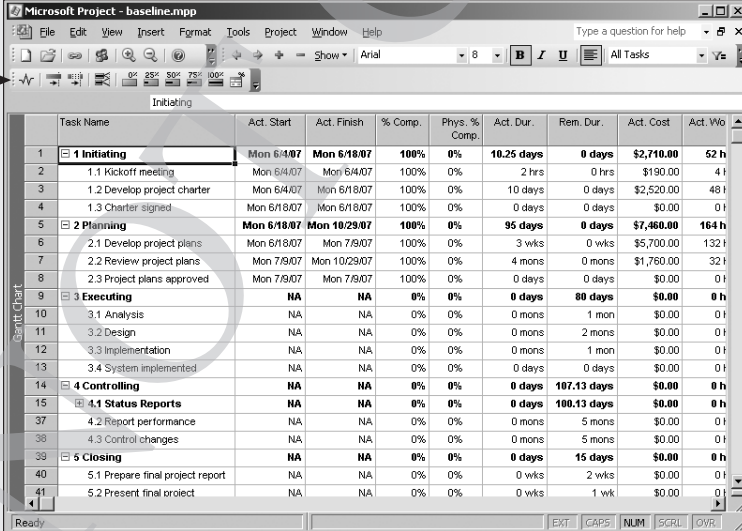
Figure A-56. Buttons on the Tracking Toolbar

To practice entering actual information, enter just a few changes to the baseline. Assume that Tasks 1 through 8 were completed as planned, but that Task 10 took longer than planned.

To enter actual information for tasks that were completed as planned:


1. *Display the Tracking toolbar.* Click **View** on the menu bar, select **Toolbars**, and then click **Tracking**. Move the toolbar as desired.
2. *Display the Tracking table.* Right-click the **Select All** button, and then click **Tracking** to see more information as you enter actual data. Widen the Task Name column to see all of the text, and then move the split bar to reveal all the columns in the Tracking table.
3. *Mark Tasks 1 through 8 as 100% complete.* Click the Task Name for Task 1, **Initiating**, and drag down through Task 8 to highlight the first eight tasks. Click the **100% Complete** button  on the Tracking toolbar. The columns with dates, durations, and cost information should now contain data instead of the default values, such as NA or 0. The % Comp column should display 100%. Adjust column widths if needed. Your screen should resemble Figure A-57.

Tracking toolbar



Task Name	Act. Start	Act. Finish	% Comp.	Phys. % Comp.	Act. Dur.	Rem. Dur.	Act. Cost	Act. Wk
1 1 Initiating	Mon 6/4/07	Mon 6/18/07	100%	0%	10.25 days	0 days	\$2,710.00	52 h
2 1.1 Kickoff meeting	Mon 6/4/07	Mon 6/4/07	100%	0%	2 hrs	0 hrs	\$190.00	4 h
3 1.2 Develop project charter	Mon 6/4/07	Mon 6/18/07	100%	0%	10 days	0 days	\$2,520.00	48 h
4 1.3 Charter signed	Mon 6/18/07	Mon 6/18/07	100%	0%	0 days	0 days	\$0.00	0 h
5 2 Planning	Mon 6/18/07	Mon 10/29/07	100%	0%	95 days	0 days	\$7,460.00	164 h
6 2.1 Develop project plans	Mon 6/18/07	Mon 7/9/07	100%	0%	3 wks	0 wks	\$5,700.00	132 h
7 2.2 Review project plans	Mon 7/9/07	Mon 10/29/07	100%	0%	4 mons	0 mons	\$1,760.00	32 h
8 2.3 Project plans approved	Mon 7/9/07	Mon 7/9/07	100%	0%	0 days	0 days	\$0.00	0 h
9 3 Executing	NA	NA	0%	0%	0 days	80 days	\$0.00	0 h
10 3.1 Analysis	NA	NA	0%	0%	0 mons	1 mon	\$0.00	0 h
11 3.2 Design	NA	NA	0%	0%	0 mons	2 mons	\$0.00	0 h
12 3.3 Implementation	NA	NA	0%	0%	0 mons	1 mon	\$0.00	0 h
13 3.4 System implemented	NA	NA	0%	0%	0 days	0 days	\$0.00	0 h
14 4 Controlling	NA	NA	0%	0%	0 days	107.13 days	\$0.00	0 h
15 4.1 Status Reports	NA	NA	0%	0%	0 days	100.13 days	\$0.00	0 h
37 4.2 Report performance	NA	NA	0%	0%	0 mons	5 mons	\$0.00	0 h
38 4.3 Control changes	NA	NA	0%	0%	0 mons	5 mons	\$0.00	0 h
39 5 Closing	NA	NA	0%	0%	0 days	15 days	\$0.00	0 h
40 5.1 Prepare final project report	NA	NA	0%	0%	0 wks	2 wks	\$0.00	0 h
41 5.2 Present final project	NA	NA	0%	0%	0 wks	1 wk	\$0.00	0 h

Figure A-57. Tracking Table Information

4. *Enter actual completion dates for Task 10.* Click the Task Name for Task 10, **Analysis**, and then click the **Update Tasks** button  on the far right side of the Tracking toolbar. The Update Tasks dialog box opens. For Task 10, enter the Actual Start date as **7/11/07** and the Actual Finish date as **8/16/07**, as shown in Figure A-58. Click **OK**.

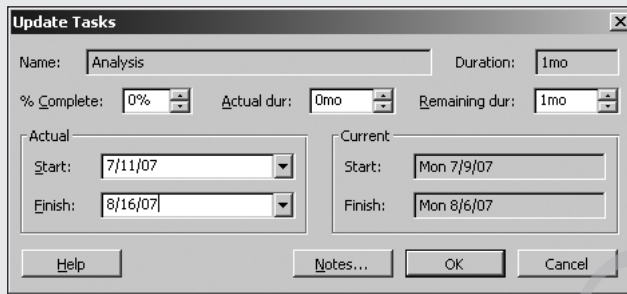


Figure A-58. Update Tasks Dialog Box

5. *Display the Indicators column.* Click **Insert** on the menu bar, and then click **Column**. The Column Definition dialog box opens. Click the **Field name** list arrow, select **Indicators**, and then click **OK**. The Indicators column is displayed, showing a check mark by completed tasks.
6. *Review changes in the Gantt chart.* Move the split bar to the left to reveal more of the Gantt chart. Notice that the Gantt chart bars for completed tasks have changed. Gantt chart bars for completed tasks appear with a black line drawn through the middle.




You can hide the Indicators column by dragging the right border of the column heading to the left.

You can also view actual and baseline schedule information more clearly with the Tracking Gantt view. See Chapter 6 for descriptions of the symbols on a Tracking Gantt chart.

To display the Tracking Gantt chart:

1. *View the Tracking Gantt chart.* Click **View** on the menu bar, and then click **Tracking Gantt**. Alternatively, you can click the **Tracking Gantt** button on the View Bar, if it is displayed. Use the horizontal scroll bar in the Gantt chart window, if necessary, to see symbols on the Tracking Gantt chart.

2. Display Gantt chart information in months. Click **Zoom Out**  twice to display information in months. Your screen should resemble Figure A-59. (The Tracking toolbar was turned off in this figure to display the entire schedule). Notice that the delay in this one task on the critical path has caused the planned completion date for the entire project to slip. A good project manager would take corrective action to make up for this lost time or renegotiate the completion date.

Notice the analysis task started late and took longer than planned to complete

This one delay could cause the project completion date to slip unless corrective action is taken

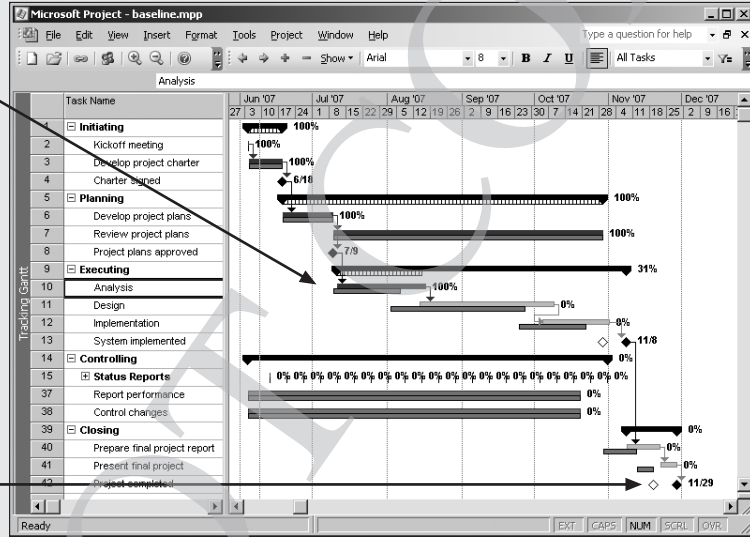


Figure A-59. Tracking Gantt Chart View

3. Save your file as a new file named *mytracking.mpp*. Click **File** on the menu bar, and then click **Save As**. Name the file **mytracking**, and then click **Save**.

Notice the additional information available on the Tracking Gantt chart. Completed tasks have 100% by their symbols on the Tracking Gantt chart. Tasks that have not started yet display 0%. Tasks in progress, such as Task 9,

show the percentage of the work completed (31% in this example). Also, note that the project completion date has moved to 11/29 since several tasks depended on the completion of Task 10, which took longer than planned. Recall from Chapter 6 that a white diamond represents a slipped milestone. Viewing the Tracking Gantt chart allows you to easily see your schedule progress against the baseline plan.

After you have entered some actuals, you can review earned value information for the initiating tasks of this project.

Earned Value Management

Earned value management (see Chapter 7, Project Cost Management) is an important project management technique for measuring project performance. Because you have entered actual information for the initiating tasks in the Project Tracking Database project, you can now view earned value information in Project 2003.

To view earned value information:

1. *View the Earned Value table.* Open **tracking.mpp**, which you downloaded from the companion Web site. Click **View** on the menu bar, point to **Table: Entry**, and then select **More Tables**. The More Tables dialog box opens. Double-click **Earned Value**.
2. *Display all the Earned Value table columns.* Move the split bar to the right to reveal all of the columns. Note that the Earned Value table includes columns for each earned value term described in Chapter 7. Also note that the EAC (Estimate at Completion) is higher than the BAC (Budget at Completion) starting with Task 9, where the task took longer than planned to complete (Figure A-60). Task 9 shows a VAC (Variance at Completion) of (\$2,772.00), meaning the project is projected to cost \$2,772 more than planned at completion at that point in time. Remember that not all of the actual information has been entered yet.

Task Name	BCWS	BCWP	ACWP	SV	CV	EAC	BAC	VAC
1 Initiating	\$1,387.00	\$1,387.00	\$1,387.00	\$0.00	\$0.00	\$2,710.00	\$2,710.00	\$0.00
2 Kickoff meeting	\$190.00	\$190.00	\$190.00	\$0.00	\$0.00	\$190.00	\$190.00	\$0.00
3 Develop project charter	\$1,197.00	\$1,197.00	\$1,197.00	\$0.00	\$0.00	\$2,520.00	\$2,520.00	\$0.00
4 Charter signed	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5 Planning	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$7,460.00	\$7,460.00	\$0.00
6 Develop project plans	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$5,700.00	\$5,700.00	\$0.00
7 Review project plans	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,760.00	\$1,760.00	\$0.00
8 Project plans approved	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
9 Executing	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$33,172.00	\$30,400.00	(\$2,772.00)
10 Analysis	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$10,692.00	\$7,920.00	(\$2,772.00)
11 Design	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$12,000.00	\$12,000.00	\$0.00
12 Implementation	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$10,480.00	\$10,480.00	\$0.00
13 System implemented	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
14 Controlling	\$154.00	\$0.00	\$0.00	(\$154.00)	\$0.00	\$6,564.35	\$6,564.35	\$0.00
15 Status Reports	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$3,484.35	\$3,484.35	\$0.00
37 Report performance	\$44.00	\$0.00	\$0.00	(\$44.00)	\$0.00	\$880.00	\$880.00	\$0.00
38 Control changes	\$110.00	\$0.00	\$0.00	(\$110.00)	\$0.00	\$2,200.00	\$2,200.00	\$0.00
39 Closing	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,640.00	\$2,640.00	\$0.00
40 Prepare final project report	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,200.00	\$2,200.00	\$0.00
41 Present final project	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$440.00	\$440.00	\$0.00
42 Project completed	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Figure A-60. Earned Value Table



Project 2003 uses earned value terms from the 1996 PMBOK® Guide. The *PMBOK® Guides 2000* and *2004* use simpler acronyms for earned value terms. See Chapter 7 for explanations of all the earned value terms.

3. *Save and close the file.* Click the **Save** button on the Standard toolbar, and then close the tracking.mpp file.



If you want to check your work or continue to the next section, copies of the files baseline.mpp and tracking.mpp are available on the companion Web site for this text or from your instructor.

Further information on earned value is available from Project 2003 Help or in Chapter 7, Project Cost Management. To create an earned value chart, you must export data from Project 2003 into Excel. There are also add-in products you can use with Project 2003 to do more with earned value information. Consult Project 2003 Help and Microsoft's Web site for Project 2003 (www.microsoft.com/project) for more details.

Now that you have entered and analyzed various project cost information, you will examine some of the human resource management features of Project 2003.


PROJECT HUMAN RESOURCE MANAGEMENT

In the project cost management section, you learned how to enter resource information into Project 2003 and how to assign resources to tasks. Two other helpful human resource features include resource calendars and histograms. In addition, it is important to know how to use Project 2003 to assist in resource leveling.

Resource Calendars

When you created the Project Tracking Database file, you used the standard Project 2003 calendar. This calendar assumes that standard working hours are Monday through Friday, from 8:00 a.m. to 5:00 p.m., with an hour for lunch starting at noon. Rather than using this standard calendar, you can create a different calendar that takes into account each project's unique requirements. You can create a new calendar by using the Tasks pane or by changing the working time under the Tools menu.

To create a new base calendar:

1. *Open a new file.* Click the **New** button  on the Standard toolbar to open a new Project 2003 file. The Tasks pane opens on the left side of your screen.
2. *Use the Tasks pane to create a new calendar.* Click **Define general working times** in the Tasks pane. A calendar wizard appears, as shown in Figure A-61.

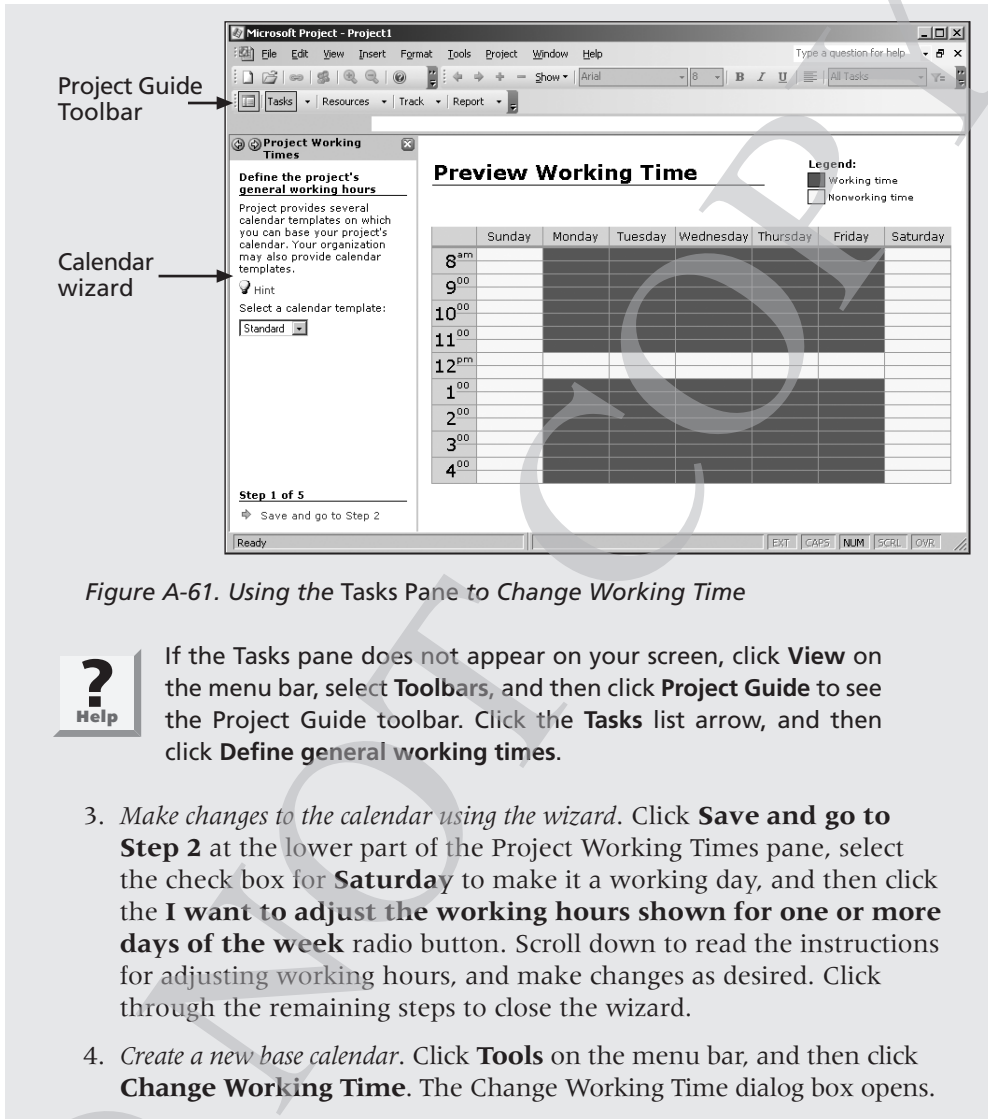


Figure A-61. Using the Tasks Pane to Change Working Time



If the Tasks pane does not appear on your screen, click **View** on the menu bar, select **Toolbars**, and then click **Project Guide** to see the Project Guide toolbar. Click the **Tasks** list arrow, and then click **Define general working times**.

3. *Make changes to the calendar using the wizard.* Click **Save and go to Step 2** at the lower part of the Project Working Times pane, select the check box for **Saturday** to make it a working day, and then click the **I want to adjust the working hours shown for one or more days of the week** radio button. Scroll down to read the instructions for adjusting working hours, and make changes as desired. Click through the remaining steps to close the wizard.
4. *Create a new base calendar.* Click **Tools** on the menu bar, and then click **Change Working Time**. The Change Working Time dialog box opens.

5. *Name the new base calendar.* In the Change Working Time dialog box, click **New**. The Create New Base Calendar dialog box opens. Click the **Create new base calendar** radio button, type **Mine** as the name of the new calendar in the **Name** text box, and then click **OK**. Click **OK** to close the Change Working Time dialog box.

You can use this new calendar for the whole project, or you can assign it to specific resources on the project.

To assign the new calendar to the whole project:

1. *Open the Project Information dialog box.* Click **Project** on the menu bar, and then click **Project Information**. The Project Information dialog box opens.
2. *Select a new calendar.* Click the **Calendar** list arrow to display a list of available calendars. Select your new calendar named **Mine** from this list, and then click **OK**.

To assign a specific calendar to a specific resource:

1. *Assign a new calendar.* Click **View** on the menu bar, and then click **Resource Sheet**. Type **Me** in the Resource Name column, press **Enter**, and then select the word **Me**.
2. *Select the calendar.* Click the **Base Calendar** cell for that resource name. If the Base Calendar column is not visible, click the horizontal scroll bar to view more columns. Click the **Base Calendar** list arrow, and then select **Mine**.
3. *Block off vacation time.* Double-click the resource name **Me** to display the Resource Information dialog box, and then click the **Working Time** tab. You can block off vacation time for people by selecting the appropriate days on the calendar and marking them as nonworking days, as shown in Figure A-62. Close the Resource Information dialog box.
4. *Close the file without saving it.* Click **File** on the menu bar, and then click **Close**. Click **No** when you are prompted to save the file.

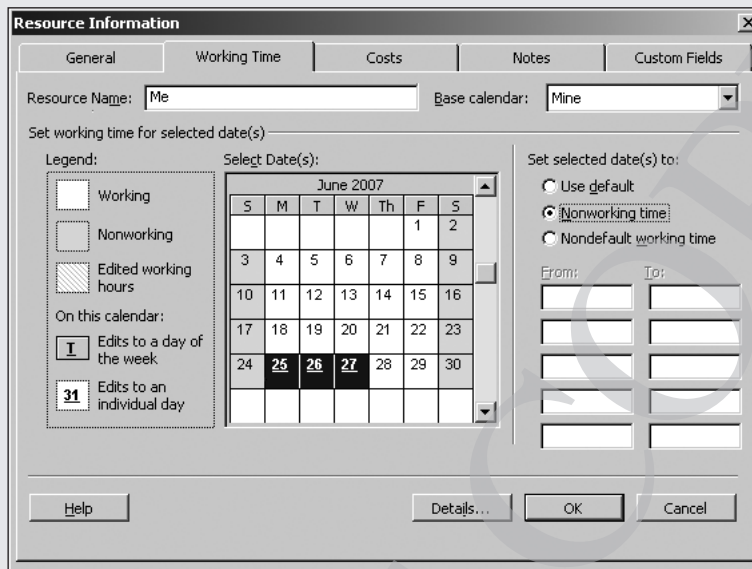



Figure A-62. Blocking Off Vacation Time

Resource Histograms

A resource histogram is a type of chart that shows the number of resources assigned to a project over time (see Chapter 9, Project Human Resource Management). A histogram by individual shows whether a person is over- or underallocated during certain periods. To view histograms in Project 2003, select Resource Graph from the View Bar or select Resource Graph from the View menu. The Resource Graph helps you see which resources are overallocated, by how much, and when. It also shows you the percentage of capacity each resource is scheduled to work, so you can reallocate resources, if necessary, to meet the needs of the project.

To view resource histograms for the Project Tracking Database project:

1. *View the Resource Graph.* Open the **baseline.mpp** file, and open the View Bar, if necessary. Click the **Resource Graph** button  on the View Bar. If you cannot see the Resource Graph button, you may need to click the up or down arrows on the View Bar. Alternatively, you can click **View** on the menu bar, and then click **Resource Graph**. A histogram for Kathy appears, as shown in Figure A-63. Notice that the screen is divided into two sections. The left pane

displays a person's name and the right pane displays a resource histogram for that person. You may need to click the right scroll bar to get the histogram to appear on your screen. Notice that Kathy is overallocated slightly in the month of June, since the column for that month goes above the 100% line.

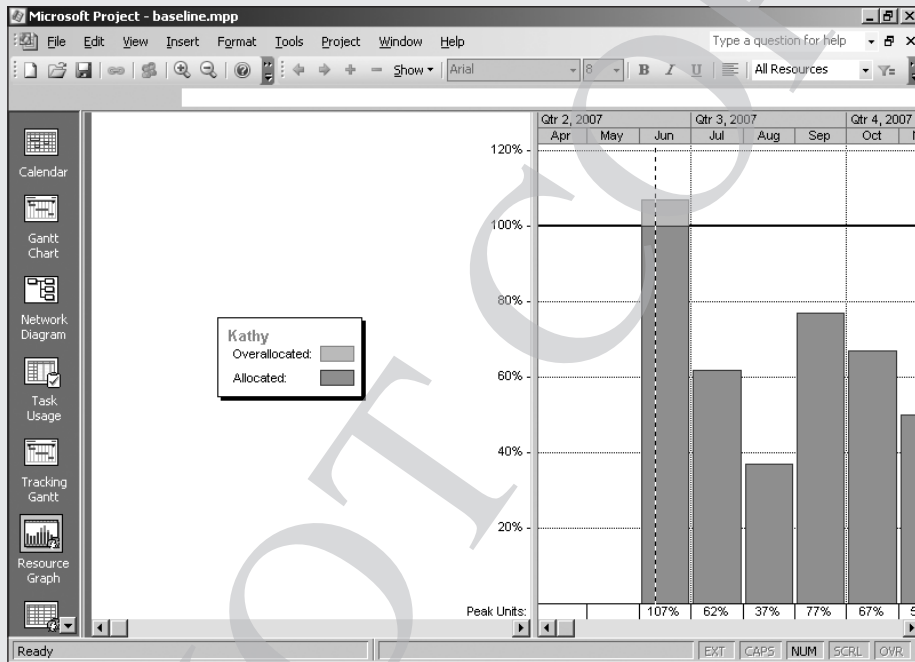





Figure A-63. Resource Histogram View

2. Adjust the histogram's timescale. Click **Zoom Out**  or **Zoom In** , if necessary, to adjust the timescale for the histogram so that it appears in quarters and then months, as shown in Figure A-63.
3. View the next resource's histogram. Click the **right scroll arrow** at the bottom of the resource name pane on the left side of the screen. The resource histogram for the next person appears. View the resource histograms for all four people, and then go back to the first one for Kathy.

Notice that Kathy's histogram has a partially red bar in June 2007. This red portion of the bar means that she has been overallocated during that month. The percentages at the bottom of each bar show the percentage each resource is assigned to work. For example, Kathy is scheduled to work 107% of her

available time in June, 62% of her available time in July, and so on. Project 2003 has two tools that enable you to see more details about resource overallocation: the Resource Usage view and the Resource Management toolbar.

To see more details about an overallocated resource using the Resource Usage view:

1. *Display the Resource Usage view.* Click the **Resource Usage** button  from the View Bar or click **View** on the menu bar, and then click **Resource Usage**.
2. *Adjust the information displayed.* On the right side of the screen, click the **right scroll arrow** to display the hours Kathy is assigned to work each day, starting on June 3rd. You may also need to click the scroll down arrow to see all of Kathy's hours. If you need to adjust the timescale to display weeks, click **Zoom Out** or **Zoom In**. When you are finished, your screen should resemble Figure A-64.

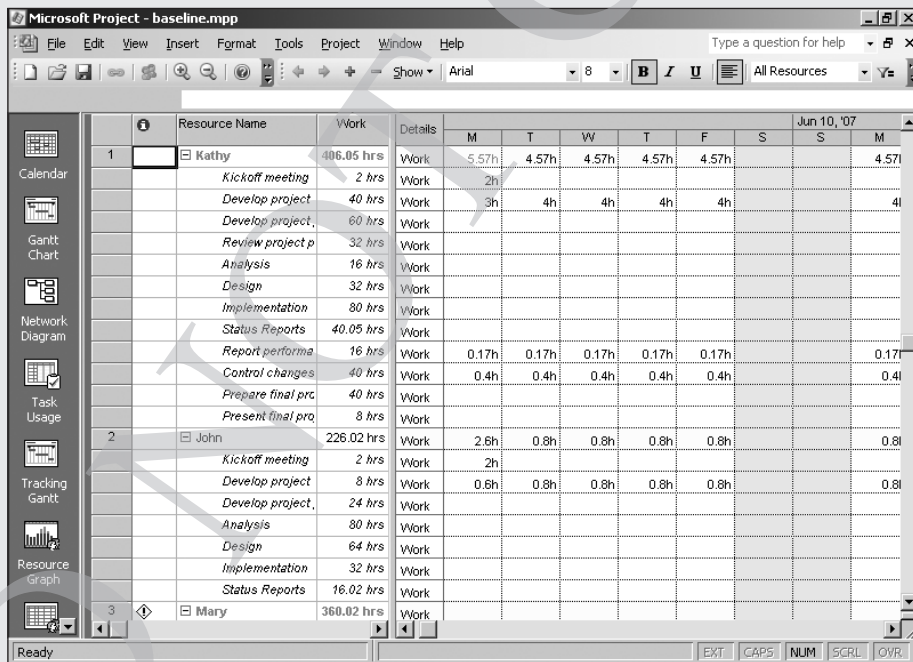



Figure A-64. Resource Usage View

3. *Examine overallocation information.* Notice that Kathy's name appears in red, as does the value 5.57h in the column for Monday. Although Kathy is not scheduled to work more than eight hours on Monday, some of the tasks were entered as hours, and Project 2003 assumes those hours start as soon as possible, thus causing the scheduling conflict. You'll remove the conflict using hour by hour leveling later in this section.

To learn more about an overallocated resource, you can also use the Resource Management toolbar for resource allocation.

To see more resource allocation information:

1. *View the Resource Management toolbar.* Click **View** on the menu bar, select **Toolbars**, and then click **Resource Management**. The Resource Management toolbar displays below the Formatting toolbar.
2. *Select the Resource Allocation view.* Click the **Resource Allocation View** button  on the Resource Management toolbar. The Resource Allocation view appears, showing the Resource Usage view at the top of the screen and the Gantt Chart view at the bottom of the screen. Figure A-65 shows this view with Kathy's information highlighted.

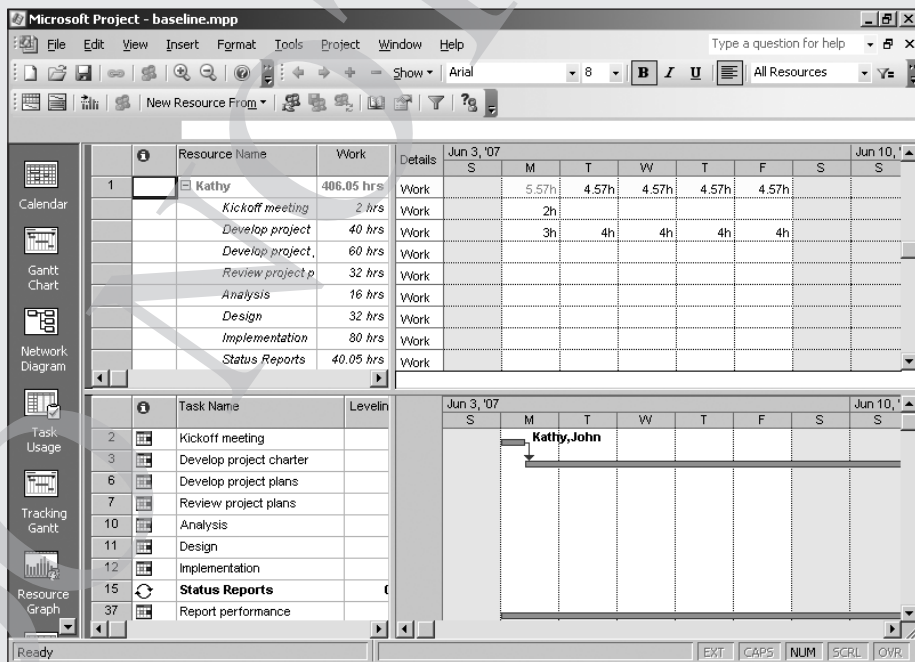


Figure A-65. Resource Allocation View


3. *Close the file, but do not save any changes.* Click **File** on the menu bar, and then click **Close**. Click **No** when you are prompted to save changes.

The Resource Allocation view can help you identify the source of a resource overallocation. It is not obvious that Kathy has an overallocation the first day of the project because she is only assigned to work a total of 5.57 hours. The problem in this case is that she is assigned to several tasks that day that were entered with durations of hours, and Project 2003 assumes each of those tasks starts as soon as possible, thus resulting in the overallocation on an hourly basis. You could ignore this problem or fix it with resource leveling, as shown in the next section. By using the scroll bar, you can view information for other resources. If you scroll down to look at Mary's resource allocation information and scroll to the right to reveal August and September, you can see that overlapping the design and implementation tasks may have caused another overallocation problem. To fix the problem, you can have Mary work overtime, assign another resource to help, or reschedule the implementation task to reduce the overlap. You can also see if resource leveling, as described in the next section, will help solve the problem.

Resource Leveling

Resource leveling is a technique for resolving resource conflicts by delaying tasks. Resource leveling also creates a smoother distribution of resource usage. You can find detailed information on resource leveling in Chapter 9, Project Human Resource Management, and in Project 2003 Help.

To use resource leveling:

1. *Reopen the baseline file.* Click the **Open** button  on the Standard toolbar, navigate to **baseline.mpp**, and open it. Right-click the **Select All** button and click **Entry**. Move the split bar to see more of the Gantt chart. Notice that the project completion date is 11/19/07.
2. *Open the Resource Leveling dialog box.* Click **Tools** on the menu bar, and then click **Level Resources**. The Resource Leveling dialog box opens, as shown in Figure A-66. Uncheck the **Level only within available slack** option, if necessary.

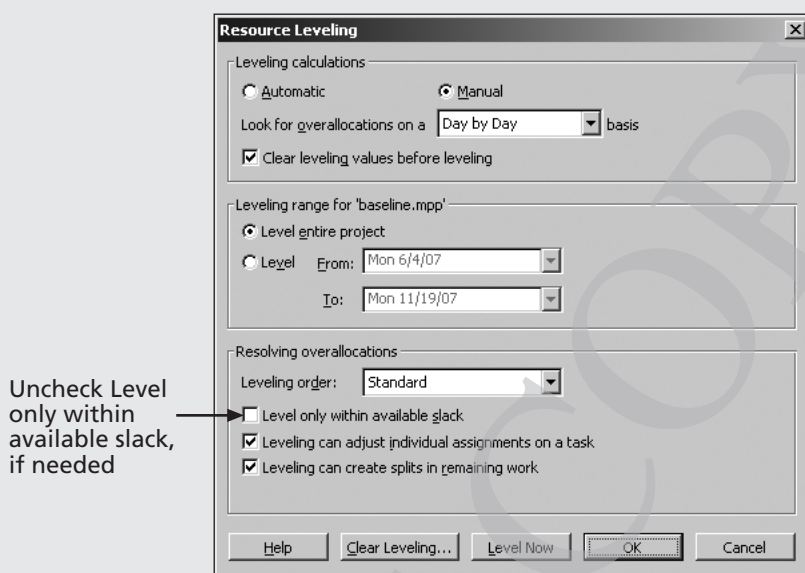





Figure A-66. Resource Leveling Dialog Box

3. *Level the file and review the date changes.* Click the **Level Now** button. In this example, resource leveling moved the project completion date from 11/19 to 11/22, as shown on the Gantt chart milestone symbol for Task 42, Project completed.
4. *View Kathy's Resource Graph again.* Click the **Resource Graph** button  on the View Bar. If necessary, use the scroll bar in the resource histogram pane to display June 2007. Notice that Kathy is still overallocated in June 2007.
5. *Level using the Hour by Hour option.* Click **Tools** on the menu bar, and then click **Level Resources**. Change the basis for leveling from Day by Day to **Hour by Hour**, click the **Level Now** button, keep the default option of Entire pool in the Level Now dialog box, and then click **OK**. Notice that Kathy's overallocation disappears. Click the right scroll arrow in the resource name pane twice to reveal information about Mary. Remember that the left pane displays different resources, and the right pane reveals the resource histogram over time. Mary's overallocations are also gone, because of this resource leveling.
6. *View the Gantt chart again.* Click the **Gantt Chart** button  on the View Bar and move the split bar to review the Gantt chart, if necessary. The project completion date has been moved back to 11/26 because of the resource leveling.

7. View the Leveling Gantt chart. Click **View** on the menu bar, click **More Views**, and then double-click **Leveling Gantt**. Click the **Zoom Out** button , if necessary, to adjust the timescale to show quarters and months, and scroll to the right in the Gantt chart to reach June 2007. Your screen should resemble Figure A-67. Project 2003 adds a green bar to the Gantt chart to show leveled tasks.

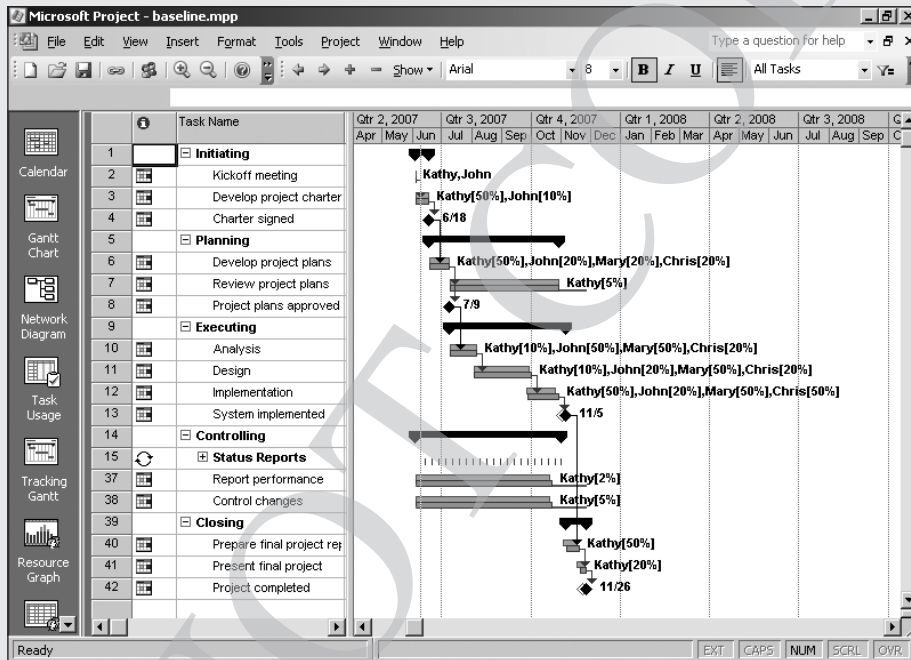



Figure A-67. Leveling Gantt Chart View

8. Save the file as level.mpp. Click **File** on the menu bar, click **Save As**, type **level** as the filename, and then click **Save**. Close the file.



If you want to undo the leveling, immediately click the Undo button  on the Standard toolbar. Alternatively, you can return to the Resource Leveling dialog box, and click the Clear Leveling button.



If you want to check your work, a copy of level.mpp is available on the companion Web site for this text or from your instructor.

Consult the Project 2003 Help feature and use the key word “level” for more information on resource leveling. Also, be careful when setting options for this feature, so that the software adjusts resources only when it should. For example, the end date for the Project Tracking Database project was pushed back because you set the leveling options to allow the dates to slip. In this case, the project manager might prefer to ask her team to work a little overtime to remain on schedule.

Now that you have learned how to change resource calendars, view resource histograms, and level resources, you are ready to learn how to use Project 2003 to assist in project communications management.

PROJECT COMMUNICATIONS MANAGEMENT

Project 2003 can help you generate, collect, disseminate, store, and report project information. There are many different tables, views, and reports to aid in project communications, as you have seen in the previous sections. This section highlights some common reports and views. It also describes how to use templates and insert hyperlinks from Project 2003 into other project documents, how to save Project 2003 files as Web pages, and how to use Project 2003 in a workgroup setting.

Common Reports and Views

To use Project 2003 to enhance project communications, it is important to know when to use the many different ways to collect, view, and display project information. Table A-5 provides a brief summary of Project 2003 features and their functions, which will help you understand when to use which feature. Examples of most of these features are provided as figures in this appendix.

You can see from Table A-5 that many different reports are available in Project 2003. The overview reports provide summary information that top management might want to see, such as a project summary or a report of milestone tasks. Current activities reports help project managers stay abreast of and control project activities. The reports of unstarted tasks and slipping tasks alert project managers to problem areas. Cost reports provide information related to the cash flow for the project, budget information, overbudget items, and earned value management.

Assignment reports help the entire project team by providing different views of who is doing what on a project. You can see who is overallocated by running the Overallocated Resources report or by viewing the two workload reports. You can also create custom reports based on any project information you have entered into Project 2003.

Table A-5: Functions of Project 2003 Features

FEATURE	FUNCTION
Gantt Chart view, Entry table	Enter basic task information.
Network Diagram view	View task dependencies and critical path graphically.
Schedule table	View schedule information in a tabular form.
Cost table	Enter fixed costs or view cost information.
Resource Sheet view	Enter resource information.
Resource Information and Gantt Chart split view	Assign resources to tasks.
Save Baseline	Save project baseline plan.
Tracking toolbar	Enter actual information.
Earned Value table	View earned value information.
Resource Graph	View resource allocation.
Resource Usage	View detailed resource usage.
Resource Management	View resource usage and Gantt chart to find toolbar overallocation problems.
Resource Leveling	Level resources.
Overview Reports	View project summary, top-level tasks, critical tasks, milestones, working days.
Current Activities Reports	View unstarted tasks, tasks starting soon, tasks in progress, completed tasks, should have started tasks, slipping tasks.
Cost Reports	View cash flow, budget, overbudget tasks, overbudget resources, earned value.
Assignment Reports	View who does what, who does what when, to-do list, overallocated resources.
Workload Reports	View task usage, resource usage.
Custom Reports	Allow customization of each type of report.
Save as Web page	Save files as HTML documents.
Insert Hyperlink	Insert hyperlinks to other files or Web sites.

Using Templates and Inserting Hyperlinks and Comments

Chapter 10, Project Communications Management, and several other chapters provide examples of templates that you can use to improve project communications. Because it is often difficult to create good project plans, some organizations,

such as Northwest Airlines, Microsoft, and various government agencies, keep a repository of sample Project 2003 files. As shown earlier in this appendix, Project 2003 includes several template files, and you can also access several templates online. You must load the template files when installing Project 2003 or access templates via the Internet.

To access the Project 2003 templates:

1. *Open the New Project task pane.* Start Project 2003, if necessary, click **File** on the menu bar, and then click **New** to display the New Project task pane, as shown in Figure A-68.

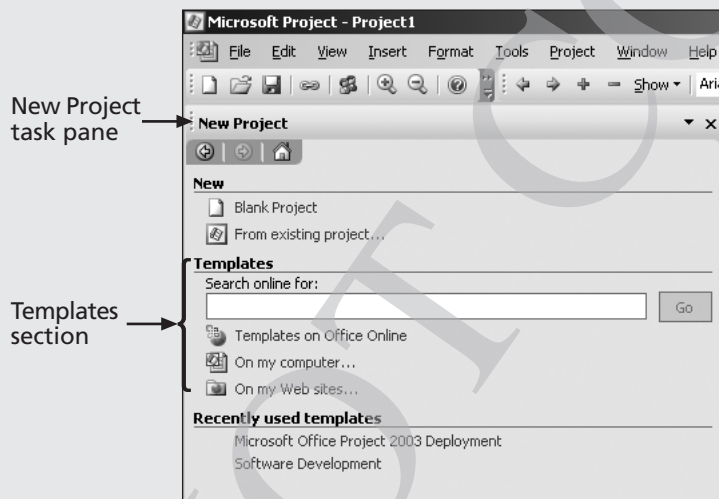


Figure A-68. Opening Templates

2. *Open the Templates dialog box.* Click the **On my computer** link below the **Templates** section in the New Project task pane. The Templates dialog box is displayed. Click the **Project Templates** tab, as shown in Figure A-69. As you can see, there are many templates available. You can also access additional templates from the **Templates on Office Online** link from the New Project task pane, from other Web sites, or from your own organization.

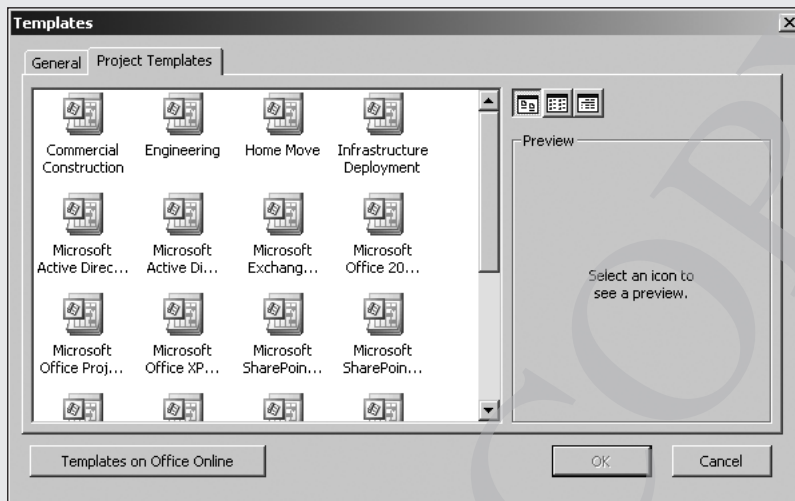


Figure A-69. Project Templates on My Computer



If you do not have any templates loaded on your computer, you will not see the files displayed in Figure A-69. You must load the template files when installing Project 2003.

3. *Open the Microsoft Office Templates Gallery.* Click **Cancel** in the Templates dialog box, and then click the **Templates on Office Online** link in the New Project task pane. The resulting screen should resemble Figure A-70. Experiment with searching for various template files.

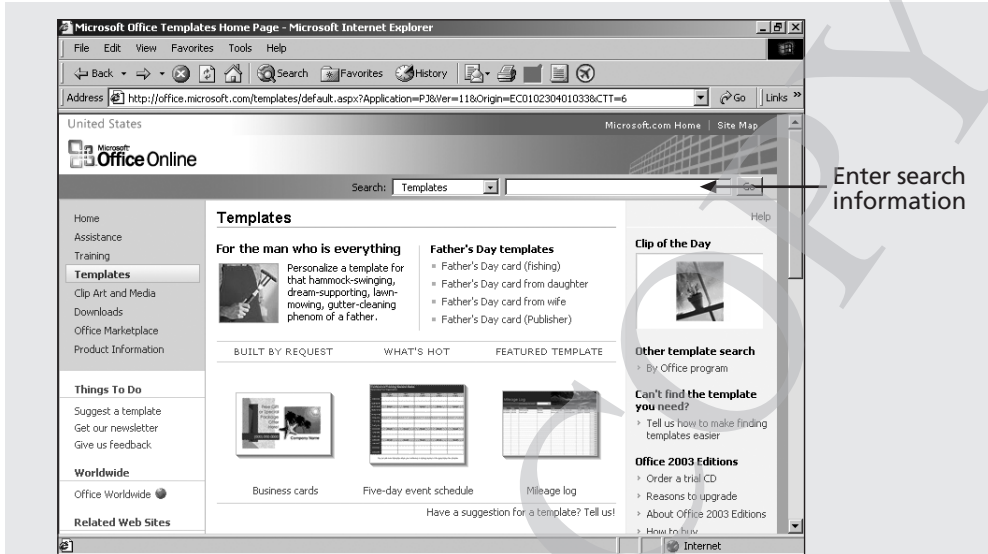


Figure A-70. Microsoft Office Online Web Site

4. Close your browser and the open Project file. Click the **Close** button  on your browser and then close the file in Project 2003.

Using templates can help you prepare your project files, but be careful to address the unique needs of your project and organization. For example, even though the Home Move template file can provide guidance in preparing a Project 2003 file for a specific home move project, you need to tailor the file for your particular situation and schedule. You can also create your own Project 2003 templates by saving your file as a template using the Save As option from the File menu. Simply change the Save As Type option to Template. Project 2003 then gives the file an .mpt extension (Microsoft Project Template) to identify the file as a template.

In addition to using templates for Project 2003 files, it is helpful to use templates for other project documents and insert hyperlinks to them from Project 2003. For example, your organization might have templates for meeting agendas, project charters, status reports, and project plans. See Appendix D and the companion Web site for examples of other template files. Next, you will create hyperlinks to some template files created in other applications.

To insert a hyperlink within a Project 2003 file:

1. *Display the Entry table.* Open the **baseline.mpp** file. Right-click the **Select All** button and click **Entry** to return to the Entry table view.

2. Select the task in which you want to insert a hyperlink. Click the Task Name for Task 2, **Kickoff meeting**.
3. Open the Insert Hyperlink dialog box. Click **Insert** on the menu bar, and then click **Hyperlink**. Alternatively, you can right-click the task name and select **Hyperlink**. The Insert Hyperlink dialog box opens, as shown in Figure A-71. You may have different folders visible based on your computer's directory structure.

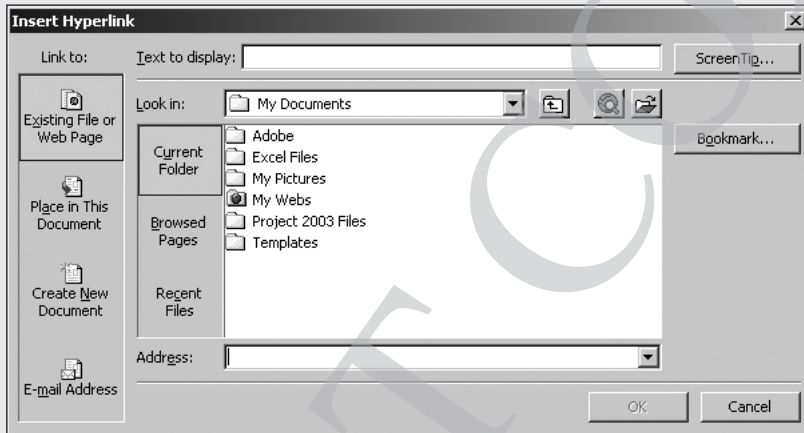





Figure A-71. Insert Hyperlink Dialog Box

4. Enter the filename of the hyperlink file. Click the **Browse for File** button  to browse for the kickoffmeeting.doc file you downloaded from the companion Web site for this text. Double-click **kickoffmeeting.doc**, and then click **OK**.
5. Reveal the Indicators column. Click **Insert** on the menu bar, and then click **Column**. Click the **Field Name** list arrow, select **Indicators**, and then click **OK**. A Hyperlink button  appears in the Indicators column to the left of the Task Name for Task 2. Move your mouse over the hyperlink button until the mouse pointer changes to the Hand symbol  to reveal the name of the hyperlinked file.

Clicking the Hyperlink button in the Indicators column will automatically open the hyperlinked file. Using hyperlinks is a good way to keep all project documents organized.

It is also a good idea to insert notes or comments into Project 2003 files to provide more information on specific tasks.

To insert a note for Task 3:

1. *Open the Task Information dialog box for Task 3.* Double-click the Task Name for Task 3, **Develop project charter**. Click the **Notes** tab.
2. *Enter your note text.* Type **The charter was developed as a joint effort.** in the Notes text box, as shown in Figure A-72.

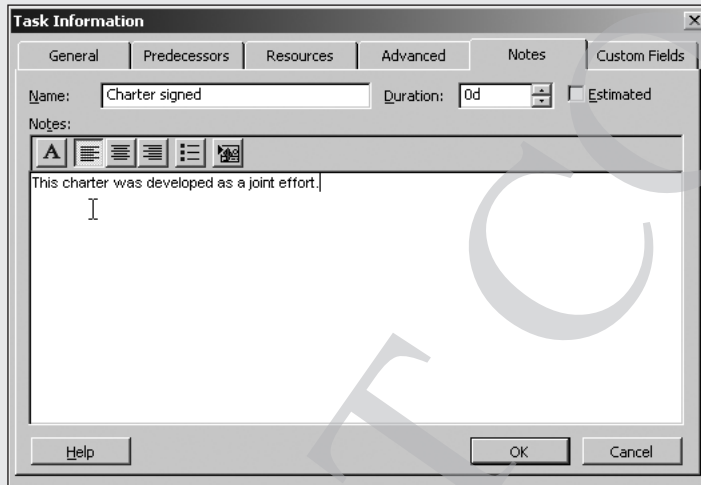



Figure A-72. Task Information Dialog Box Notes Tab

3. *See the resulting Notes icon.* Click **OK** to enter the note. The Notes icon  appears in the Indicators column next to Task 3.
4. *Open the note.* Double-click the **Notes** icon in the Indicators column for Task 3 to view the note, and then click **OK**.
5. *Close the file without saving it.* Click **File** on the menu bar, and then click **Close**. Click **No** when you are prompted to save the file.

Saving Files as Web Pages

Many organizations use the Web to disseminate information to employees and to communicate with customers. Project 2003 includes a feature that enables you to save project information as a Web page. As with most Microsoft applications, this feature in Project 2003 is available by selecting Save As Web Page from the File menu. You can create Web pages in several standard formats, including Compare to Baseline, Cost Data By Task, Earned Value Information, Top Level Tasks List, a “Who Does What” Report, and more. You can also design your own formats for information to be saved as Web pages.

To save project information as a Web page:

1. *Open the Save As dialog box for Web pages.* Open **baseline.mpp**. Click **File** on the menu bar, and then click **Save As Web Page**.
2. *Name the Web page file.* Type **taskinfo** in the File name text box as the new filename, select the location where you'll save the file, and then click **Save**. The Export Wizard dialog box appears. Click **Next** to go to the next step of the Export Wizard, click the option to **Use existing map**, and then click **Next**, so your screen resembles Figure A-73.

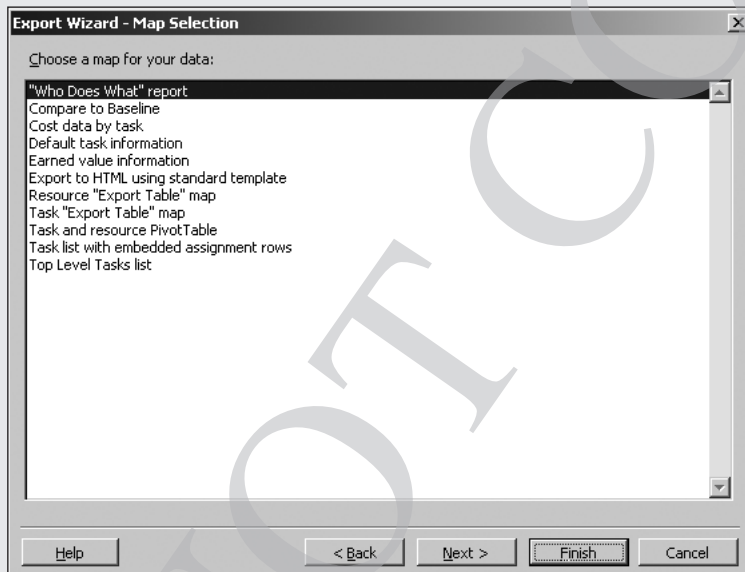


Figure A-73. Export Wizard — Map Selection Dialog Box

3. *Select the import/export map.* Click **Default task information** from the import/export map list, and then click **Finish**. Project 2003 saves an HTML version of task information from **baseline.mpp**. The name of the new Web page is **taskinfo.html**.

To see the new Web page, you must open the new HTML file you created.

To open the **taskinfo.html** file:

1. *Open Windows Explorer.* Click the **Start** button on the taskbar, point to **Programs** (or **All Programs** in Windows XP), point to **Accessories**, and then click **Windows Explorer**. Navigate your folders to find the **taskinfo.html** file. You can also use other methods to open Windows

Explorer or use My Computer to find the desired file. Alternatively, start your Web browser, and use the Open Page feature from the File menu to open the file.

2. Open the *taskinfo.html* file in your Web browser. Double-click **taskinfo.html** to open it in your Web browser. The file extension for the file may not appear, depending on your settings. Figure A-74 shows part of the *taskinfo.html* file in Microsoft Internet Explorer.

Project Tracking Database

Project Start Date: Mon 6/4/07
Project Finish Date: Mon 11/19/07

Task_Data

ID	Task_Name	Duration	Start_Date	Finish_Date	Predecessors	Resource_Names
1	Initiating	10.25 days	Mon 6/4/07	Mon 6/18/07		
2	Kickoff meeting	2 hrs	Mon 6/4/07	Mon 6/4/07		Kathy,John
3	Develop project charter	10 days	Mon 6/4/07	Mon 6/18/07	2	Kathy[50%],John[10%]
4	Charter signed	0 days	Mon 6/18/07	Mon 6/18/07	3	
5	Planning	95 days	Mon 6/18/07	Mon 10/29/07		
6	Develop project plans	3 wks	Mon 6/18/07	Mon 7/9/07	4	Kathy[50%],John[20%],Mary[20%],Chris[20%]
7	Review project plans	4 mons	Mon 7/9/07	Mon 10/29/07	6	Kathy[5%]
-	Project plans					

Figure A-74. Default Task Information HTML File

3. Close the *taskinfo.html* and *baseline.mpp* files. Click **Close** to close your browser, and then go back to your Project 2003 window and close the *baseline.mpp* file without saving it.



There are several ways to change or customize the standard HTML documents in Project 2003. The Export Wizard allows you to change formats for existing maps, and you can also create your own map. Consult the Project 2003 Help topic "HTML" to find more information on HTML features of Project 2003 and saving your files as Web pages.

Saving project information as Web pages includes text and numerical information, but not graphic information. You can create Web displays of graphic views, such as Gantt charts or network diagrams, but the process often requires knowledge of how to include images in Web pages.

Using the Copy Picture to Office Wizard

The Copy Picture to Office Wizard is a new feature in Project 2003 that helps you easily create and copy graphical images. After answering a few questions in the wizard, you can quickly display project data as a static picture in Office applications, including PowerPoint, Word, and Visio. You can access this wizard on the Analysis toolbar.

To use the Copy Picture to Office Wizard:

1. *Prepare the file you want to copy.* Open **baseline.mpp**. Drag the split bar to the left so that only the entire Task Name column is showing. Click the **collapse symbol**  for Task 1, Initiating. You should be able to see the entire Gantt chart on your screen.
2. *View the Analysis Toolbar.* Click **View** on the menu bar, select **Toolbars**, and then click **Analysis** to display the Analysis toolbar.
3. *Open the Copy Picture to Office Wizard.* Click the **Copy Picture to Office Wizard** button  on the Analysis toolbar. Click **Next** at each step of the wizard until you reach Step 4. You have now accepted the default settings to copy the entire picture of the screen to PowerPoint. Click **Finish**, and then click **Close** when the wizard is complete. Your screen should resemble Figure A-75. The wizard has created a picture of your screen in Project 2003 and copied it into PowerPoint.

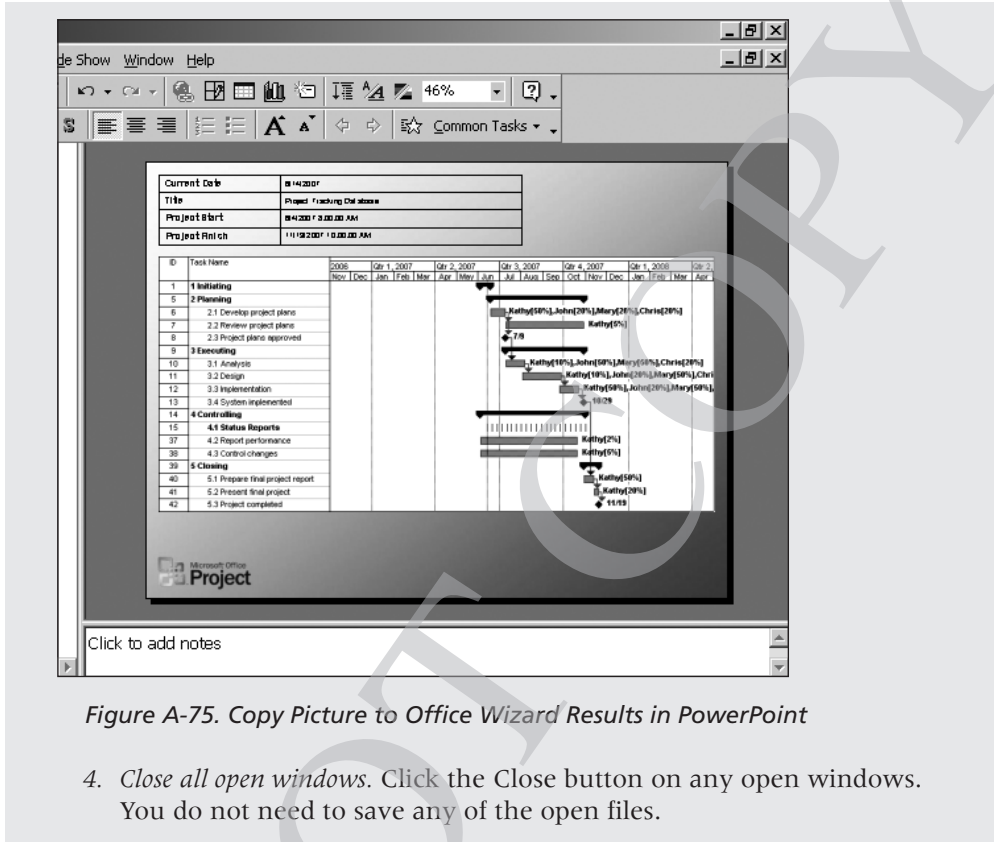


Figure A-75. Copy Picture to Office Wizard Results in PowerPoint

4. Close all open windows. Click the Close button on any open windows. You do not need to save any of the open files.

As you can see, Project 2003 is a very powerful tool. If used properly, it can greatly help users successfully manage projects.

DISCUSSION QUESTIONS

1. What are some new features of Project 2003 Standard and how do they differ from previous versions of Microsoft Project?
2. How do you use Project 2003 to create a WBS hierarchy?
3. Summarize how you use Project 2003 to assist in time management. How do you enter durations, link tasks, and view critical path information?
4. How can Project 2003 assist you in project cost management? How do you enter fixed costs? How do you enter resources and assign them to tasks? How can you view earned value information?
5. Briefly describe how to change resource calendars, view resource histograms, and level resources.

6. Summarize different ways to communicate information with Project 2003. How do you link to other files from within your Project 2003 file? How can you use templates and share information on the Web? How can you copy pictures into other applications?

SUGGESTED READINGS

1. Bunin, Rachel. *New Perspectives on Microsoft Office Project 2003, Introductory*. Boston: Course Technology (2004).
This book walks you through step-by-step tutorials on how to use Project 2003 on one continuous running case. It includes six tutorials on planning a project, creating a project schedule, communicating project information, assigning resources and costs, tracking progress and closing a project, and sharing information across projects, applications, and the World Wide Web. There are review activities and several cases for each chapter. There are also supporting files and other information on the publisher's Web site at www.course.com. You can also run an interactive tutorial of Project 2002 from www.scsite.com/selabs.
2. Marmel, Elaine. *Microsoft Office Project 2003 Bible*, Hungry Minds, Inc. (2003).
This comprehensive text (960 pages) includes detailed information on how to use Project 2003. It also includes a CD-ROM with an evaluation copy of Project, add-on tools, and sample cases.
3. Pyron, Tim et al. *Special Edition: Using Microsoft Office Project 2003*, Que Publishing (2004).
This text includes detailed coverage of Project 2003. It includes 1248 pages of text and additional information on Que's Web site. The companion CD-ROM contains all the examples developed for the book, a third-party software library, and Web resources. Tim Pyron is a Microsoft Project consultant, trainer, and editor of Woody's Project Watch, a free newsletter for Project users (www.woodyswatch.com/project).
4. Stover, Teresa S. *Microsoft Office Project 2003 Inside Out*. Microsoft Press (2003).
This text includes 1152 pages of text and a CD-ROM that contains a trial version of Microsoft Office Project 2003 Standard Edition, Microsoft resources and demos, a computer dictionary, and information about third-party utilities and tools.

EXERCISES

The more you practice using the different features of Project 2003, the more quickly you will master the application and be able to use it to manage projects. This section includes exercises based on three examples of information

technology projects that could benefit from using Project 2003 to assist in project scope, time, cost, human resource, and communications management. It also includes an exercise you can use to apply Project 2003 on a real project. There are simpler exercises that use Project 2003 at the end of several other chapters in this text. You can also re-create several screen shots in this text to practice your skills, or you can open and then make slight changes to template files or the files that come with this text.

Exercise A-1: Web Site Development

A nonprofit organization would like you to lead a Web site development project for them. The organization has Internet access that includes space on a Web server, but has no experience developing Web pages or Web sites. In addition to creating their Web site, they would like you to train two people on their staff to do simple Web page updates. The organization wants their Web site to include the following basic information, as a minimum: description of the organization (mission, history, and recent events), list of services, and contact information. They want the Web site to include graphics (photographs and other images) and have an attractive, easy-to-use layout.

1. Project Scope Management

Create a WBS for this project and enter the tasks in Project 2003. Create milestones and summary tasks. Assume that some of the project management tasks you need to do are similar to tasks from the Project Tracking Database project. Some of the specific analysis, design, and implementation tasks will be to:

- a. Collect information on the organization in hardcopy and digital form (brochures, reports, organization charts, photographs, and so on).
- b. Research Web sites of similar organizations.
- c. Collect detailed information about the customer's design preferences and access to space on a Web server.
- d. Develop a template for the customer to review (background color for all pages, position of navigation buttons, layout of text and images, typography, including basic text font and display type, and so on).
- e. Create a site map or hierarchy chart showing the flow of Web pages.
- f. Digitize the photographs and find other images for the Web pages; digitize hard-copy text.
- g. Create the individual Web pages for the site.
- h. Test the pages and the site.
- i. Implement the Web site on the customer's Web server.
- j. Get customer feedback.
- k. Incorporate changes.

- l. Create training materials for the customer on how to update the Web pages.
 - m. Train the customer's staff on updating the Web pages.
2. Project Time Management
 - a. Enter realistic durations for each task, and then link the tasks as appropriate. Be sure that all tasks are linked (in some fashion) to the start and end of the project. Assume that you have four months to complete the entire project. (*Hint:* Use the Project Tracking Database as an example.)
 - b. Print the Gantt Chart view and Network Diagram view for the project.
 - c. Print the Schedule table to see key dates and slack times for each task.
 3. Project Cost Management
 - a. Assume that you have three people working on the project, and each of them would charge \$20 per hour. Enter this information in the Resource Sheet.
 - b. Estimate that each person will spend an average of about five hours per week for the four-month period. Assign resources to the tasks, and try to make the final cost in line with this estimate.
 - c. Print the budget report for your project.
 4. Project Human Resource Management
 - a. Assume that one project team member will be unavailable (due to vacation) for two weeks in the middle of the project. Make adjustments to accommodate this vacation so that the schedule does not slip and the costs do not change. Document the changes from the original plan and the new plan.
 - b. Use the Resource Usage view to see each person's work each month. Print a copy of the Resource Usage view.
 5. Project Communications Management
 - a. Print a Gantt chart for this project. Use a timescale that enables the chart to fit on one page. Then use the Copy Picture to Office Wizard to show the same Gantt chart in PowerPoint.
 - b. Print a "To-do List" report for each team member.
 - c. Create a "Who Does What Report" HTML document. Print it from your Web browser.

Exercise A-2: Software Training Program

ABC Company has 50,000 employees in its headquarters. The company wants to increase employee productivity by setting up an internal software applications training program for its employees. The training program will teach employees how to use software programs such as Windows, Word, Excel, PowerPoint, Access, and Project 2003. Courses will be offered in the evenings and on

Saturdays and will be taught by qualified volunteer employees. The instructors will be paid \$40 per hour. In the past, various departments sent employees to courses offered by local vendors during company time. In contrast to local vendors' programs, this internal training program should save the company money on training as well as make its people more productive. The Human Resources department will manage the program, and any employee can take the courses. Employees will receive a certificate for completing courses, and a copy of the certificate will be put in their personnel files. The company has decided to use off-the-shelf training materials, but is not sure which vendor's materials to use. The company needs to set up a training classroom, survey employees on what courses they want to take, find qualified volunteer instructors, and start offering courses. The company wants to offer the first courses within six months. One person from Human Resources is assigned full-time to manage this project, and top management has pledged its support of the project.

1. Project Scope Management

Create a WBS for this project and enter the tasks in Project 2003. Create milestones and summary tasks. Assume that some of the project management tasks you need to do are similar to tasks from the Project Tracking Database example. Some of the tasks specific to this project will be to:

- a. Review off-the-shelf training materials from three major vendors and decide which materials to use.
- b. Negotiate a contract with the selected vendor for their materials.
- c. Develop communications information about this new training program. Disseminate the information via department meetings, e-mail, the company's intranet, and flyers to all employees.
- d. Create a survey to determine the number and type of courses needed and employees' preferred times for taking courses.
- e. Administer the survey.
- f. Solicit qualified volunteers to teach the courses.
- g. Review resumes, interview candidates for teaching the courses, and develop a list of preferred instructors.
- h. Coordinate with the Facilities department to build two classrooms with twenty personal computers in each, a teacher station, and an overhead projection system (assume that the Facilities department will manage this part of the project).
- i. Schedule courses.
- j. Develop a fair system for signing up for classes.
- k. Develop a course evaluation form to assess the usefulness of each course and the instructor's teaching ability.
- l. Offer classes.

2. Project Time Management

- a. Enter realistic durations for each task and then link appropriate tasks. Be sure that all tasks are linked in some fashion to the start and end of the project. Use the Project Tracking Database as an example. Assume that you have six months to complete the entire project.
 - b. Print the Gantt Chart view and Network Diagram view for the project.
 - c. Print the Schedule table to see key dates and slack times for each task.
3. Project Cost Management
- a. Assume that you have four people from various departments available part-time to support the full-time Human Resources person, Terry, on the project. Assume that Terry's hourly rate is \$40. Two people from the Information Technology department will each spend up to 25 percent of their time supporting the project. Their hourly rate is \$50. One person from the Marketing department is available 25 percent of the time at \$40 per hour, and one person from Corporate is available 30 percent of the time at \$35 per hour. Enter this information about time and hourly wages into the Resource Sheet. Assume that the cost to build the two classrooms will be \$100,000, and enter it as a fixed cost.
 - b. Using your best judgment, assign resources to the tasks.
 - c. View the Resource Graphs for each person. If anyone is overallocated, make adjustments.
 - d. Print the budget report for the project.
4. Project Human Resource Management
- a. Assume that the Marketing person will be unavailable for one week, two months into the project, and for another week, four months into the project. Make adjustments to accommodate this unavailability, so the schedule does not slip and costs do not change. Document the changes from the original plan and the new plan.
 - b. Add to each resource a 5 percent raise that starts three months into the project. Print a new budget report.
 - c. Use the Resource Usage view to see each person's work each month. Print a copy.
5. Project Communications Management
- a. Print a Gantt chart for this project. Use a timescale that enables the chart to fit on one page. Then use the Copy Picture to Office Wizard to show the same Gantt chart in PowerPoint.
 - b. Print a "To-do List" report for each team member.
 - c. Create an HTML document using the "Default task information" map. Print it from your Web browser.

Exercise A-3: Project Tracking Database

Expand the Project Tracking Database example. Assume that XYZ Company wants to create a history of project information, and the Project Tracking Database example is the best format for this type of history. The company wants to track information on twenty past and current projects and wants the database to be able to handle one hundred projects total. It wants to track the following project information:

- Project name
- Sponsor name
- Sponsor department
- Type of project
- Project description
- Project manager
- Team members
- Date project was proposed
- Date project was approved or denied
- Initial cost estimate
- Initial time estimate
- Dates of milestones (for example, project approval, funding approval, project completion)
- Actual cost
- Actual time
- Location of project files

1. Project Scope Management

Open scope.mpp and add more detail to Executing tasks, using the information in Table A-6.

Table A-6: Company XYZ Project Tracking Database Executing Tasks

ANALYSIS TASKS	DESIGN TASKS	IMPLEMENTATION TASKS
Collect list of 20 projects	Gather detailed requirements for desired outputs from the database	Enter project data
Gather information on projects	Create fully attributed, normalized data model	Test database
Define draft requirements	Create list of edit rules for fields, determine default values, develop queries, and determine formats for reports	Make adjustments, as needed
Create entity relationship diagram for database	Develop list of queries required for database	Conduct user testing
Create sample entry screen	Review design information with customer	Make adjustments based on user testing
Create sample report	Make adjustments to design based on customer feedback	Create online Help, user manual, and other documentation
Develop simple prototype of database	Create full table structure in database prototype	Train users on the system
Review prototype with customer	Create data input screens	
Make adjustments based on customer feedback	Write queries	
	Create reports	
	Create main screen	
	Review new prototype with customer	

2. Project Time Management

- a. Enter realistic durations for each task, and then link appropriate tasks. Make the additional tasks fit the time estimate: 20 days for analysis tasks, 30 days for design tasks, and 20 days for implementation tasks. Assume that all of the executing tasks have a total duration of 70 days. Do not overlap analysis, design, and implementation tasks.
- b. Print the Gantt Chart view and Network Diagram view for the project.
- c. Print the Schedule table to see key dates and slack times for each task.

3. Project Cost Management

- a. Use the resource and cost information provided in resource.mpp.

- b. Assign resources to the new tasks. Try to make the final cost about the same as that shown in the Project Tracking Database example: about \$50,000.
 - c. Print the budget report for the project.
4. Project Human Resources Management
 - a. Two months after the project begins, give everyone on the team a 10 percent raise. Document the increase in costs that these raises cause.
 - b. Use the Resource Usage view to see each person's work each month. Print a copy of the Resource Usage view.
 5. Project Communications Management
 - a. Print a Gantt chart for this project. Use a timescale that enables the chart to fit on one page. Then use the Copy Picture to Office Wizard to show the same Gantt chart in PowerPoint.
 - b. Print a "Top-Level Tasks" report.
 - c. Create a "Cost Data by Task" HTML document. Print it from your Web browser.

Exercise A-4: Real Project Application

If you are doing a group project as part of your class or for a project at work, use Project 2003 to create a detailed file describing the work you plan to do. Enter a sufficient WBS, estimate task durations, link tasks, enter resources and costs, assign resources, and so on. Then save your file as a baseline and track your progress. View earned value information when you are about halfway done with the project or course. Export the earned value information into Excel and create an earned value chart. Continue tracking your progress until the project or course is finished. Print your Gantt chart, Resource Sheet, Project Summary report, and relevant information. In addition, write a two- to three-page paper describing your experience. What did you learn about Project 2003 from this exercise? What did you learn about managing a project? How do you think Project 2003 helps in managing a project? You may also want to interview people who use Project 2003 and ask them about their experiences and suggestions.

ADDITIONAL RUNNING CASES

Review the additional running cases provided in Appendix C. Several questions involve using Project 2003.

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