

APPENDIX A:

Project Management Software:

Brief Guide to Microsoft Project 2007

Note: The new version of this guide based on Project 2010 is available with the latest textbook, Kathy Schwalbe's *Revised An Introduction to Project Management, Third Edition*, published in April 2010. This old appendix is provided for people who have purchased the latest book but still need to use Project 2007.

INTRODUCTION

There are hundreds of project management software products on the market today. Unfortunately, many people who own the software have no idea how to use it. It is important to understand basic concepts of project management, such as creating a work breakdown structure, determining task dependencies, and so on before making effective use of this software. Many project teams still use spreadsheets or other software to help manage projects. However, if you can master a good project management software tool, it can really help in managing projects. This appendix summarizes basic information on project management software in general. It also provides a brief guide to using Microsoft Office Project 2007 (often referred to as Project 2007), the most widely used product. Appendix B provides a brief summary of @task, the most popular totally online tool.

PROJECT MANAGEMENT SOFTWARE REVIEWS

Figure A-1 provides a screen shot showing the top ten project management software products based on a June 2009 review by TopTenREVIEWS™. The products listed in the top ten include:

1. Microsoft Project
2. MindView
3. Project KickStart
4. RationalPlan Multi Project
5. FastTrack Schedule
6. Service Desktop Pro
7. Milestones
8. MinuteMan
9. FusionDesk Professional
10. VIP Team To Do List

Notice that Microsoft Project is number one on the list. Also notice its steep price of over \$500 for a single user. Remember that students can purchase Project 2007 and other software at greatly reduced rates from sites such as www.journeyed.com (only \$69.98 for Project 2007 Standard in July 2009). You can also normally download free trials of Project 2007 and other software products.





















2009 Project Management Software Review Product Comparisons										
TopTenREVIEWS Software Project Management Software Review										
Rank	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
	Microsoft Project	MindView	Project KickStart	RationalPlan Multi Project	FastTrack Schedule	Service Desktop Pro	Milestones	MinuteMan	FusionDesk Professional	VIP Team To Do List
										
	READ REVIEW	READ REVIEW	READ REVIEW	READ REVIEW	READ REVIEW	READ REVIEW	READ REVIEW	READ REVIEW	READ REVIEW	READ REVIEW
	BUY	BUY	BUY	BUY	BUY	BUY	BUY	BUY	BUY	BUY
	\$509.99	\$389.00	\$199.00	\$98.00	\$334.99	\$99.95	\$269.00	\$49.95	\$89.95	\$99.95
Overall Rating	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■
Ratings										
Collaboration	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■
Resource Management	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■
Project Management	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■
Ease of Use	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■
Help/Support	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■	■■■■■
View Specifications	Go!	Go!	Go!	Go!	Go!	Go!	Go!	Go!	Go!	Go!
View Screenshots										
Upgrade Options										
Price	\$849.99		\$299					\$99.95		\$199.95
Upgraded Version	Professional		Project KickStart Pro					MinuteMan Plus		VIP Task Manager
Collaboration										
Dashboard			✓	✓		✓				
Team Calendars/Timelines	✓	✓	✓	✓	✓		✓	✓		
Issue Tracking			✓							
Forums		✓	✓			✓			✓	

Figure A-1. Top ten project management software product comparisons

Below are descriptions of the criteria for comparing the software products:

Collaboration: How information and issues are communicated with project team members, including email, conference calls, meetings, web-based locations and more. Collaboration should be easy to use.

- **Resource Management:** Project management software should manage and control the resources needed to run a project, such as people, money, time and equipment.
- **Project Management:** The process, practice and activities needed to perform continuous evaluation, prioritization, budgeting and selection of investments are key. Proper project management capabilities provide the greatest value and contribution to the strategic interest of your company.
- **Ease of Use:** All project management software has a learning curve, but the best have functions that are easy to find and simple enough for anyone to use from Day 1, Project 1.
- **Help/Support:** Project management software should offer a comprehensive user guide and help system. The manufacturer should provide email addresses or telephone numbers for direct answers to technical questions.¹

In addition to reviewing project management software in general, TopTenREVIEWS™ also compared online products in a separate category. These products require an Internet connection for use. Figure A-2 lists the top ten results. The top fourteen products listed include:

1. @task
2. Daptiv PPM
3. Clarizen
4. Project Insight
5. Celoxis
6. Intervals
7. Projecturf
8. Central Desktop
9. Easy Projects NET
10. eStudio
11. Project Office.net
12. Copper
13. Smooth Projects
14. Zoho Projects

@task took the number one spot. Like most tools in this category, @task provides the ability to create Gantt charts, numerous reports and views, project dashboards, and it provides integration with Project 2007 files. One of its unique features is its support of iPhones. See End Note 1 or visit the Web sites for any of these products and use a free trial version. See Appendix B for more information on using @task.

2009 Online Project Management Review Product Comparisons										
TopTenREVIEWS Services Online Project Management Review										
Displaying 1 to 10 of 14										
Rank	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
	@task	Daptiv PPM	Clarizen	Project Insight	Celoxis	Intervals	Projecturf	Central Desktop	Easy Projects NET	eStudio
Reviewer Comments										
Price										
	\$39.95	\$50.00	\$21.95	\$40.00	\$14.95	\$20.00	\$29.99	\$25.00	\$24.99	\$50.00
Overall Rating										
Ratings										
Collaboration										
Resource Management										
Project Management										
Ease of Use										
Help/Support										
View Specifications										
View Screenshots										
Product Configuration										
Users Per Account	1	1	1	1	1	Unlimited	Unlimited	30	1	Unlimited
Upgraded Version Available				Enterprise		Top Shelf				eStudio Pro
Collaboration										
General Collaboration	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Centralized Collaboration Center	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Issue Tracking	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Forums	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure A-2. Top ten online project management product comparisons

BASIC FEATURES OF PROJECT MANAGEMENT SOFTWARE

What makes project management software different from other software tools? Why not just use a spreadsheet or database to help manage projects?

You can do a lot of project management planning and tracking using non-project management software. You could use a simple word processor to list tasks, resources, dates, and so on. If you put that information into a spreadsheet, you can easily sort it, graph it, and perform other functions. A relational database tool could provide even more manipulation of data. You can use email and other tools to collaborate with others. However, project management software is designed specifically for managing projects, so it normally includes several distinct features not found in other software products:

- *Creating work breakdown structures, Gantt charts, and network diagrams:* As mentioned in this text, a fundamental concept of project management is breaking down the scope of the project into a work breakdown structure (WBS). The WBS is the basis for creating the project schedule, normally shown as a Gantt chart. The Gantt chart shows start and end dates of tasks as well as dependencies between tasks, which are more clearly shown in a network diagram. Project management software makes it easy to create a WBS, Gantt chart, and network diagram.

- *Integrating scope, time, and cost data:* The WBS is a key tool for summarizing the scope of a project, and the Gantt chart summarizes the time or schedule for a project. Project management software allows you to assign cost and other resources to tasks on the WBS, which are tied to the schedule. This allows you to create a cost baseline and use earned value management to track project performance in terms of scope, time, and cost in an integrated fashion.
- *Setting a baseline and tracking progress:* Another important concept of project management is preparing a plan and measuring progress against the plan. Project management software lets you track progress for each task. The tracking Gantt chart is a nice tool for easily seeing the planned and actual schedule, and other views and reports show progress in other areas.
- *Providing other advanced project management features:* Project management software often provides other advanced features, such as setting up different types of scheduling dependencies, determining the critical path and slack for tasks, working with multiple projects, and leveling resources. For example, you can easily set up a task to start when its predecessor is halfway finished. After entering task dependencies, the software should easily show you the critical path and slack for each task. You can also set up multiple projects in a program and perform portfolio management analysis with some products. Many project management software products also allow you to easily adjust resources within their slack allowances to create a smoother resource distribution. These advanced features unique to project management are rarely found in other software tools.

As you can see, there are several important features that are unique to project management software that make them worth using. Next you'll learn how to use basic features of Project 2007 Standard.

USING PROJECT 2007

Before you can use Project 2007 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, assigning resources, and so on. Make sure you read most of this text before using Project 2007 so you understand these concepts. Note that Project 2007 uses an interface similar to Office 2003. Project 2010, due for release in spring 2010, includes the newer ribbon-interface first introduced with Office 2007. This text provides instructions for using the stand-alone version of Project 2007 known as Project Standard. Project Professional and the Enterprise version of Project require special server software to perform online and collaborative functions. Consult Microsoft's Web site for detailed information on other products.

Before You Begin

This appendix assumes you are using Project 2007 with Windows XP, Vista, or Windows 7 and are familiar with other Windows-based applications. You can download a free trial

from Microsoft's Web site at www.microsoft.com/project. Check your work by reviewing the many screen shots included in the steps, or by using the solution files that are available for download from the companion Web site for this text or from your instructor.

NOTE: *You need to be running Windows XP, Vista, or Windows 7 to use Project 2007. It does not run on Macintosh computers or other operating systems. Most organizations have Project 2007 as part of their license if they have Office 2007. A new version of Project will be available in spring 2010. Students can purchase a full version of Project Standard from sites like www.journeyed.com for around \$69. Check the companion Web site for further information.*

This appendix uses a fictitious project—Project A+—to illustrate how to use the software. The WBS for Project A+ uses the five project management process groups as level 2 items (initiating, planning, executing, monitoring and controlling, and closing). Standard deliverables under each of those process groups are included, as described in this text. Each section of the appendix includes hands-on activities for you to perform.

NOTE: To complete the hands-on activities in the appendix, you will need to download files from the companion Web site for this text (<http://groups.google.com/group/intropm>) to your computer. You can also download the files from the author's Web site (www.kathyschwalbe.com) under Book FAQs. When you begin each set of steps, make sure you are using the correct file. Before you begin your work you should have Customer Feedback.mpp file. Save the files you create yourself in a different folder so you do not write over the ones you download.

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

- wbs.mpp
- schedule.mpp

You will also use the following file to create a hyperlink:

- stakeholder_register.doc

Next you will learn how to start Project 2007, review the Help facility and a template file, and begin to plan Project A+.

Overview of Project 2007

The first step to mastering Project 2007 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 2007 and Understanding the Main Screen Elements

To start Project 2007:

1. *Open Project 2007.* Click the **Start** button on the taskbar, point to **All Programs** in Windows XP or **Programs** in Vista, point to **Microsoft Office**, and then click **Microsoft Office Project 2007**. 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 2007.* If the Project 2007 window does not fill the entire screen as shown in Figure A-3, click the **Maximize** button in the upper-right corner of the window.

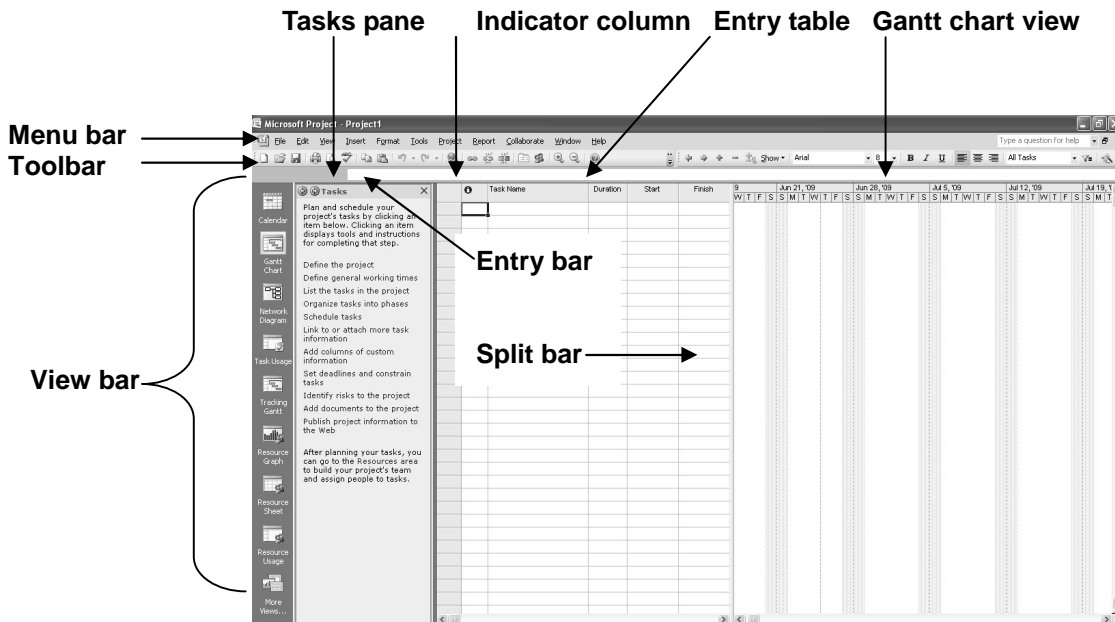


Figure A-3. Project 2007 main screen

HELP: If the View Bar is not open, click View on the Menu bar, and then click View Bar. If the Tasks pane is not open, click View on the Menu bar, and then click Turn On Project Guide. Also, your toolbars, date formats, or other screen elements may look slightly different from Figure A-3.

Project 2007 is now running and ready to use. Look at some of the elements of the Project 2007 screen.

- The Menu bar and Toolbar are similar to other Office 2003 applications.
- When you start Project 2007, the Project Guide Tasks pane automatically opens. The Project Guide can help you learn Project 2007 by providing instructions for completing various steps in building a Project 2007 file. For this brief guide, you will not be using the Project Guide. To close it, simply click on the Close icon (the X in the upper right of the Project Guide window).
- The default view is the Gantt Chart view, which shows tasks and other information as well as a calendar display.
- The areas where you enter information in a spreadsheet-like table are part of the Entry table. For example, you can see entry areas for Task Name, Duration, and Start date.
- You can make the Entry table more or less wide by using the Split bar. 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 Finish date, Predecessors, and Resource Names columns.
- You can see what you enter in a particular cell in the Entry bar.
- The column to the left of the Task Name column in the Entry table 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.
- You can access other views by clicking each button in the View Bar on the left side of the screen.

Notice that when Project 2007 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.

You can access information to help you learn how to use Project 2007 under the Help menu. Figure A-4 shows the detailed list of topics available from the first Help

option, Microsoft Office Project Help. You can also access this same menu by Pressing F1 or clicking on the question mark/help icon on the toolbar.



Figure A-4. Topics under Microsoft Office Project help

Microsoft provides a number of resources on its Web site to help you learn how to use Project 2007. They provide product information, help and how-to guides on various versions of Project, training information, and templates. Microsoft's Web site for Project 2007 (www.microsoft.com/project) provides files for users to download, case studies, articles, and other useful materials. Figure A-5 shows a screen shot of this Web site from June 2009. See the companion Web site for this text for updated information on Project and other resources.

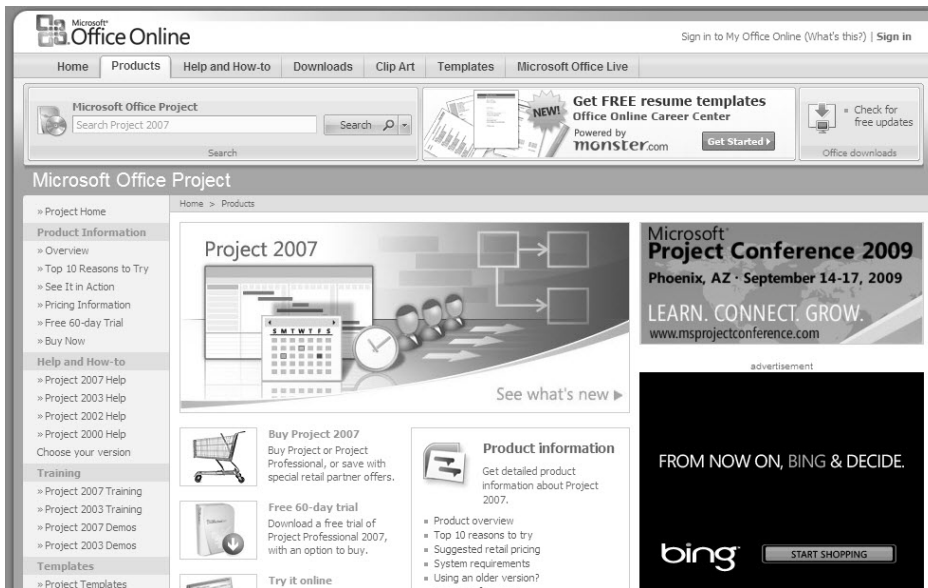


Figure A-5. Microsoft Office Project web site (www.microsoft.com/project)

Adjusting Main Screen Elements

The Project 2007 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 *Windows 2003* programs. Project 2007 does *not* have the new ribbons found in other Office 2007 applications. 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 is 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 2007 include the Formatting toolbar, the Custom Forms toolbar, and the Tracking toolbar, among others.

You can also add or remove buttons in the toolbars in Project 2007 just as you would in Office 2003 programs. Simply click on the Toolbar Options icon, as shown in Figure A-6, and select the icons you wish to add or remove, such as the Zoom In and Zoom Out icons (magnifying glasses with a plus and minus sign on them) highlighted in the figure.

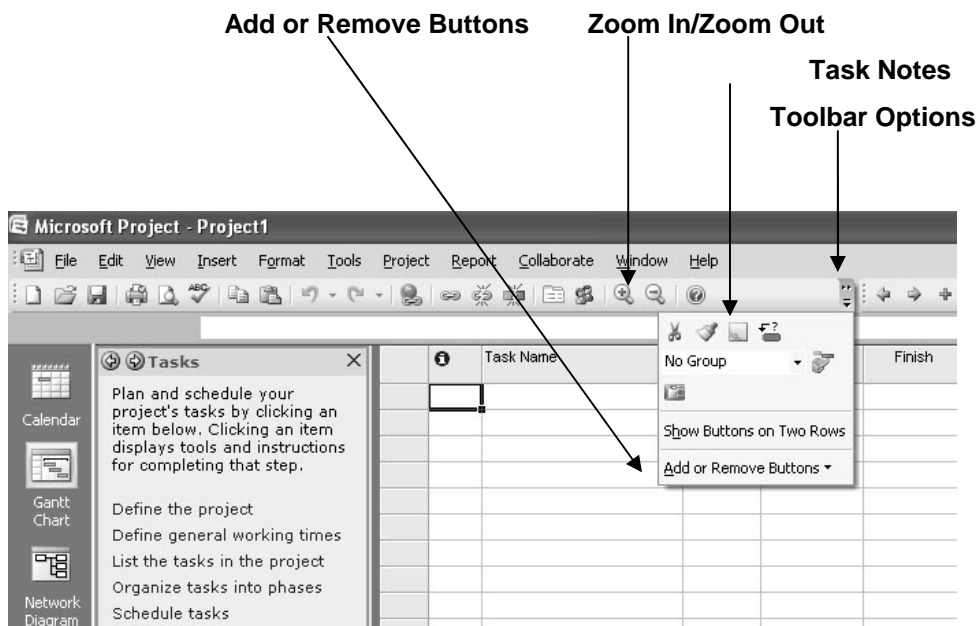


Figure A-6. Adding buttons to the toolbar

Many features in Project 2007 are similar to ones 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 2007 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, 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. If the Entry table 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. If the View Bar does not display, select View Bar from the View menu.

Next, you will get some hands-on experience by opening an existing file to explore various screen elements. Project 2007 comes with several template files, and you can also access templates from Microsoft Office Online or other Web sites.

Note: You normally open template files on your computer by clicking File on the Menu bar, and then clicking New. In the New Project task pane, you then click the On computer option under Templates. To make sure you have the proper file for the following steps, you will download it from the companion Web site and simply open it.

EXPLORING PROJECT 2007 USING AN EXISTING FILE

To open a file and adjust Project 2007 screen elements:

1. *Open an existing file.* Click the **Open button** on the Standard toolbar, browse to find the file named **Customer Feedback.mpp** that you copied from the companion Web site for this text or the author's Web site, and then **double-click** the filename to open the file. This file is a template file that comes with Project 2007 where it is called Customer Feedback Monitoring. Your screen should resemble Figure A-7.

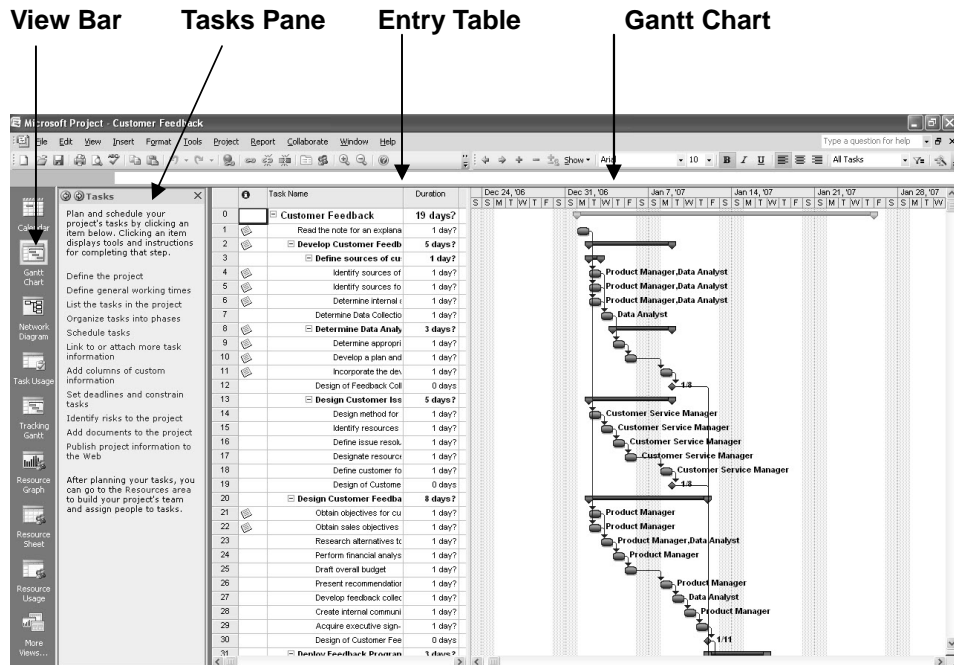


Figure A-7. Customer Feedback.mpp file

2. *Close the Tasks pane:* Click the **Close button** to close the Task pane window so you can see more of the file on your screen. Move your mouse over the top symbol on the Gantt chart, a long gray bar. Notice that this project was fairly short in length, only 19 work days, starting on January 1, 2007.

3. *View the Note.* Move your mouse over the yellow **Notes icon** in the Indicators column for Task 2 and read its contents. It is a good idea to provide a short note describing the purpose of project files. (You simply click the Tasks Notes button on the toolbar to add a note.)

4. *Adjust the timescale.* Click the **Zoom Out button** (the magnifying glass with the plus sign) on the toolbar *once* to display the timescale in days instead of weeks. Click the **Zoom In button** (the magnifying glass with the minus sign)

once to change the timescale back to weeks. Each time you click the Zoom Out or Zoom In icon, the timescale gets more or less detailed. 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. The first line in the Entry bar for this file displays the filename, and the bar in the Gantt chart next to that line shows the timeline for the entire project.

5. *Select Outline Level 1 to display WBS level 2 tasks.* On the Standard toolbar, click the **Show** button's list arrow, and then click **Outline Level 1**, as shown in Figure A-8. Notice that only the level 2 WBS items display in the Entry table after you select Outline Level 1, and the timescale shows weeks. The black bars after the Gantt chart represent the summary tasks. Recall that the entire project is normally referred to as WBS level 1, and the next highest level is called level 2. This view of the file also shows one milestone task in row 43 indicating when the project was completed. Recall that the black diamond symbol on a Gantt chart shows milestones.

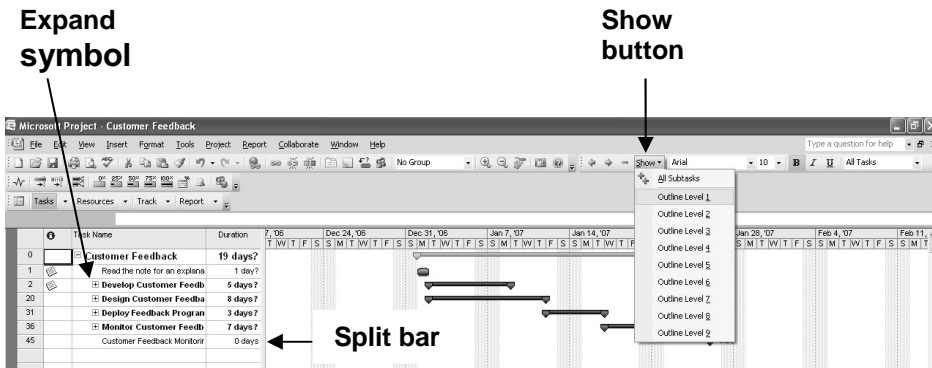


Figure A-8. Viewing summary tasks using the show button

6. *Move the split bar to reveal more Entry table columns.* Move the **split bar** to the right to reveal the Resource Names column.
7. *Adjust the Task Name column width.* 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.
8. *Expand a task.* Click the **expand symbol** (the plus sign) to the left of Task 2, Develop Customer Feedback Collection Processes, to see its subtasks. Your screen should resemble Figure A-9. Click the **collapse symbol** (the minus sign) to hide its subtasks. Experiment with expanding and collapsing other tasks and resizing other columns.

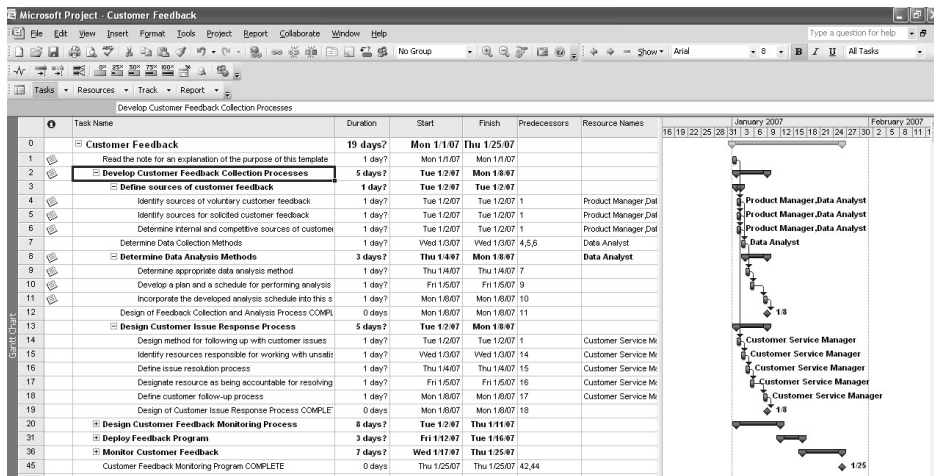


Figure A-9. Adjusting screen elements

9. Close the file without saving. Click the **Close** icon and select **No** when prompted to save the file.

Project 2007 Views

Project 2007 provides many ways to display or view project information. 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, such as the Gantt Chart, Network Diagram, Tracking Gantt, and Resource Graph (a resource histogram for an individual). These views allow you to analyze project information in different ways. The View menu also provides access to different tables that display information in various ways. In addition to the default Entry table view, you can access tables that focus on data related to the Schedule, Cost, Tracking, and Earned Value.

To access and explore different views:

1. Explore the Network Diagram view in the Customer Feedback file. Open the Customer Feedback file again and close the Task pane. Click the **Network Diagram** button on the View Bar, and then click the **Zoom Out** button (magnifying glass with the minus sign) on the toolbar *twice*. Your screen should resemble Figure A-10.

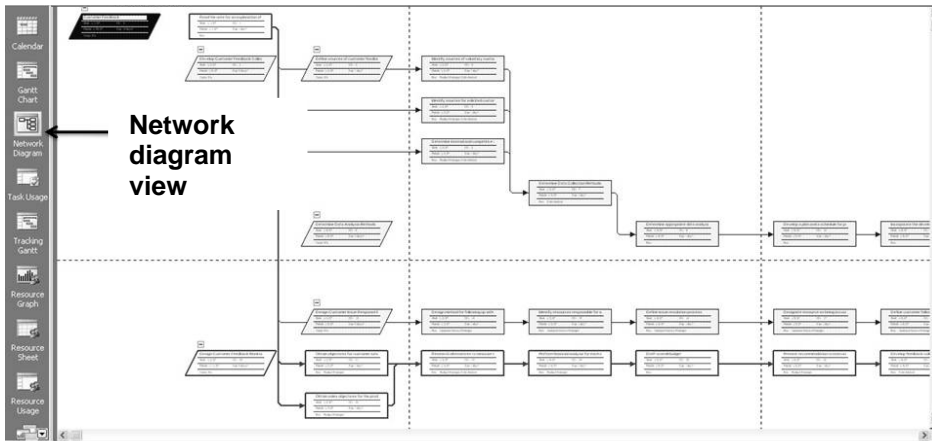


Figure A-10. Network diagram view of customer feedback file

2. *Explore the Calendar view.* Click the **Calendar** button on the View Bar (the first icon). Notice that the screen lists tasks each day in a tabular calendar format.
3. *Examine columns in the Entry table.* Click the **Gantt Chart** button on the View Bar, move the split bar to the right to see all of the available columns, and review the information provided in each column of the Entry table.
4. *Examine the Table: Schedule and other views.* Click **View** on the Menu bar, move your mouse to **Table: Entry**, and then click **Schedule** in the cascading menu to the right. Figure A-11 shows these menu items. Notice that the columns now display more detailed schedule information, such as Start date, Finish date, Late Start, Total Slack, etc. Also notice that all of the text in the Task Name column is not visible. Remember that you can widen the column by double-clicking the resize pointer to the right of that column. You can also move the split bar to the right to reveal more columns. Experiment with other table views, then **return to the Table: Entry view**.

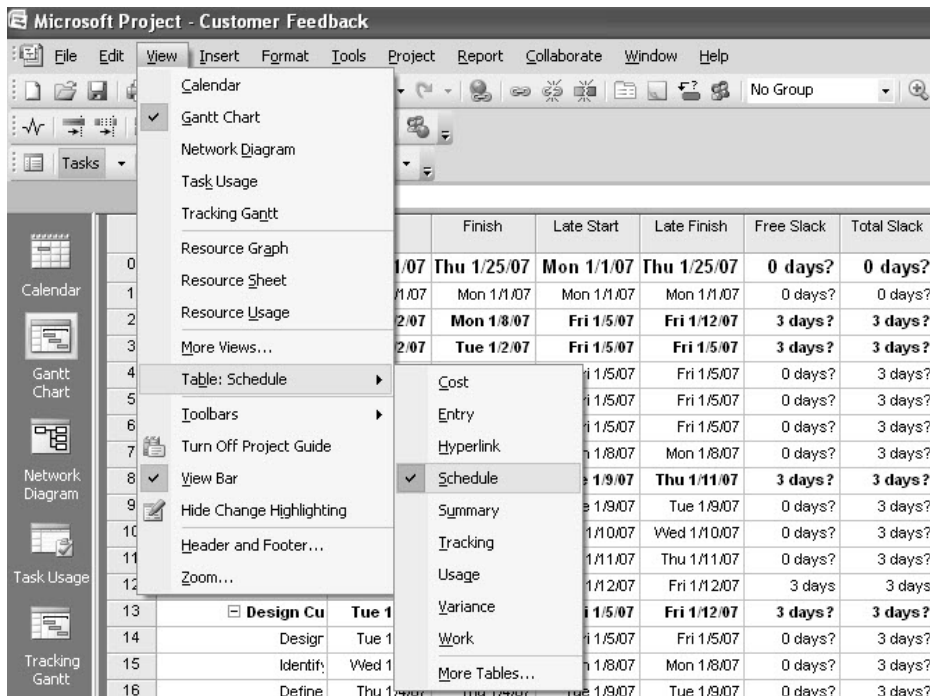


Figure A-11. Schedule table view

5. *Explore the Reports feature.* Click **Report** on the Menu bar, and then click **Reports**. The Reports dialog box displays, as shown in Figure A-12.



Figure A-12. Reports dialog box

6. *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 later in this appendix.

7. *Close the Reports feature.* Click **Close** to close the Reports dialog box and return to the Gantt Chart view.

Project 2007 Filters

Project 2007 uses a relational database to filter, sort, store, and display information. Filtering project information is very useful. For example, if a project includes thousands of tasks, you might want to view only summary or milestone tasks to get a high-level view of the project by using the Milestones or Summary Tasks filter from the Filter list. You can select a filter that shows only tasks on the critical path if that is what you want to see. 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 button on the toolbar to display different levels in the WBS quickly.

To explore Project 2007 filters:

1. *Apply a filter to see only milestone tasks.* From the Table: Entry view in the Customer Feedback file, click the **Filter list arrow**, as shown in Figure A-13. The default filter is All Tasks. If the Filter list arrow is not showing on your toolbar, you may need to add it by selecting the **Toolbar Options** button on the toolbar, as described earlier.

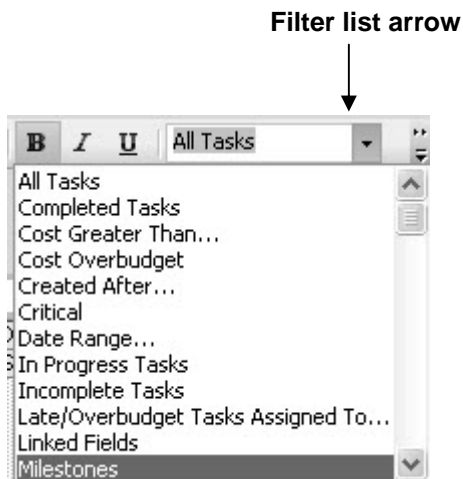


Figure A-13. Using a filter

2. *Filter to show specific tasks.* Click **Milestones** in the list of filters, and move the split bar if needed to see all the milestones on the Gantt chart. Your screen should resemble Figure A-14. Recall that a black diamond symbol represents a milestone, a significant event on a project.

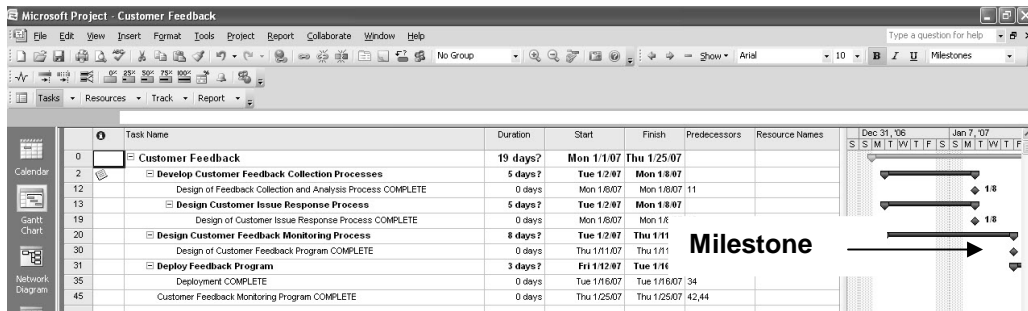


Figure A-14. Milestone tasks filter applied

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 Customer Feedback file, click **Close** from the File menu or click the **Close** button. Click **No** when asked if you want to save changes.

5. *Exit Project 2007.* Select **Exit** from the File menu or click the **Close** button for Project 2007.

Now that you are familiar with the Project 2007 main screen elements, views, and filters, you will learn how to use Project 2007 to create a new file.

CREATING A NEW FILE AND ENTERING TASKS IN A WORK BREAKDOWN STRUCTURE

To create a new Project 2007 file, you must first name the project, enter the start date, and then enter the tasks. The list of tasks and their hierarchy is the work breakdown structure (WBS). The file you create could be used for a class project which lasts approximately three months. It uses the project management process groups to organize tasks and includes several deliverables described in this text. You could also modify this file to meet your specific needs.

NOTE: In this section, you will go through several steps to create a new Project 2007 file named wbs.mpp. If you want to download the completed file to check your work or continue to the next section, a copy of wbs.mpp is available on the companion Web site for this text, from the author's Web site, or from your instructor. Try to complete an entire section of this appendix (entering tasks in a work breakdown structure, developing the schedule, 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 2007, and close the Project Guide Tasks pane. A blank project file automatically opens when you start Project 2007. The default filenames are Project1, Project2, and so on. (If Project 2007 is already open and you want to open a new file, click the **New** button on the toolbar or select File and then New from the Menu bar and select a **Blank Project**.)
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-15. This 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 the current date. Note that in Figure A-15 the file was created on 6/12/09 and a Start date of 2/1/10 was entered.

NOTE: All dates are entered in month/day/year or American format. You can change the date format by selecting Tools from the Menu bar, clicking Options, and then selecting the View tab. Click the date format you want to use in the Date Format box.

Start date text box

Current date

Project Information for 'Project1'

Start date: Mon 2/1/10

Current date: Fri 6/12/09

Finish date: Mon 2/1/10

Status date: NA

Schedule from: Project Start Date

Calendar: Standard

All tasks begin as soon as possible.

Priority: 500

Enterprise Custom Fields

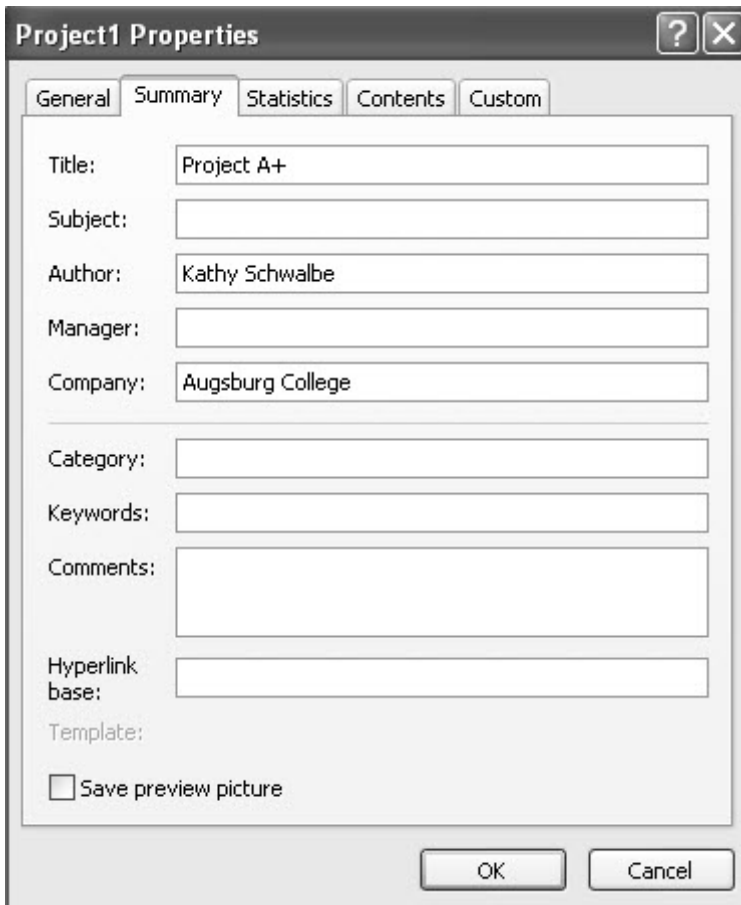
Custom Field Name	Value

Help Statistics... OK Cancel

Figure A-15. Project information dialog box

3. *Enter the project start date.* In the Start date text box, enter **2/01/10**. Setting your project start date to 2/01/10 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** or press Enter.

4. *Enter project properties.* Click **File** on the Menu bar, and then click **Properties**. Type **Project A+** in the Title text box, type **Your Name** in the Author text box, as shown in Figure A-16, and then click **OK**. 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.



The image shows a screenshot of a software dialog box titled "Project1 Properties". The dialog has a dark title bar with a question mark icon and a close button (X). Below the title bar, there are five tabs: "General", "Summary", "Statistics", "Contents", and "Custom". The "General" tab is selected. The dialog contains several text input fields and a checkbox. The fields are labeled as follows: "Title:" with the value "Project A+", "Subject:" (empty), "Author:" with the value "Kathy Schwalbe", "Manager:" (empty), "Company:" with the value "Augsburg College", "Category:" (empty), "Keywords:" (empty), "Comments:" (empty), and "Hyperlink base:" (empty). Below these fields is a "Template:" label. At the bottom left, there is a checkbox labeled "Save preview picture" which is currently unchecked. At the bottom right, there are two buttons: "OK" and "Cancel".

Figure A-16. Project properties dialog box

Creating a Work Breakdown Structure Hierarchy

As mentioned in Chapter 4 of this text, a work breakdown structure (WBS) is a fundamental part of project management. Developing a good WBS takes time, and it will make entering tasks into the Entry table easier if you develop the WBS first. For this example, you will use the project management process groups and some key processes and deliverables to create the WBS. You will use the information in Table A-2 to enter tasks.

To develop a WBS for the project:

1. *Enter task names.* Enter the 30 tasks in Figure A-17 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.

1. Initiating	16. Work on deliverable 2
2. Identify stakeholders	17. Work on deliverable 3
3. Stakeholder register completed	18. Deliverable 1 completed
4. Stakeholder management strategy completed	19. Deliverable 2 completed
5. Prepare project charter	20. Deliverable 3 completed
6. Project charter completed	21. Monitoring and Controlling
7. Prepare for kickoff meeting	22. Track actual hours
8. Kickoff meeting completed	23. Update project documents
9. Planning	24. Progress report 1
10. Prepare draft schedule	25. Progress report 2
11. Gantt chart completed	26. Hold meetings
12. Prepare scope statement	27. Closing
13. Initial scope statement completed	28. Prepare final project report
14. Executing	29. Prepare final presentation
15. Work on deliverable 1	30. Project completed

Figure A-17. Task list for Project A+

HELP: If you accidentally skip a task, highlight the task row and select **Insert** from the Menu bar, and then select **New Task** to insert a blank row (or right-click and insert the new task). 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.

TIP: Entering tasks into Project 2007 and editing the information is similar to entering and editing data in an Excel spreadsheet. Project 2007, like earlier versions, includes a feature called a SmartTag, which appears, for example, when you delete a row. The SmartTag clarifies whether you want to delete the entire task or only clear the contents of a cell. You can also easily copy and paste text from Excel or Word into Project, such as the list of tasks.

2. *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 , and 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 2 items in the WBS for this project. (Remember the whole project is level 1.) 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 A+ WBS, the tasks will be purposefully left at a high WBS level (level 3). 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, each deliverable would probably have several levels and tasks under it.

Creating Summary Tasks

After entering the WBS tasks listed in Figure A-17 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), 9 (planning), 14 (executing), 21 (monitoring and controlling), and 27 (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 8** by clicking the cell for Task 2 and dragging the mouse through the cells to Task 8.
2. *Indent subtasks.* Click the **Indent** button on the Formatting toolbar (or press Alt + Shift + right arrow) so your screen resembles Figure A-18. After the subtasks (Tasks 2 through 8) 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 (minus sign) will collapse the summary task and hide the subtasks beneath it. When subtasks are hidden, an expand symbol (plus sign) 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 to a black line with arrows indicating the start and end dates.

Expand or collapse symbols by Summary tasks

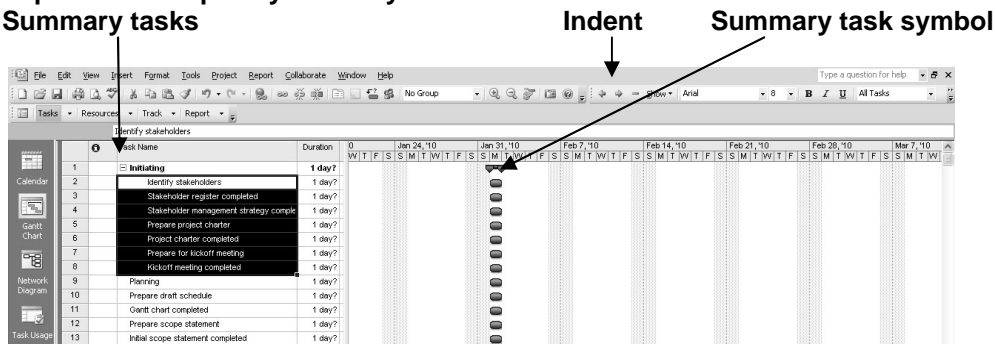


Figure A-18. Indenting tasks to create the WBS hierarchy

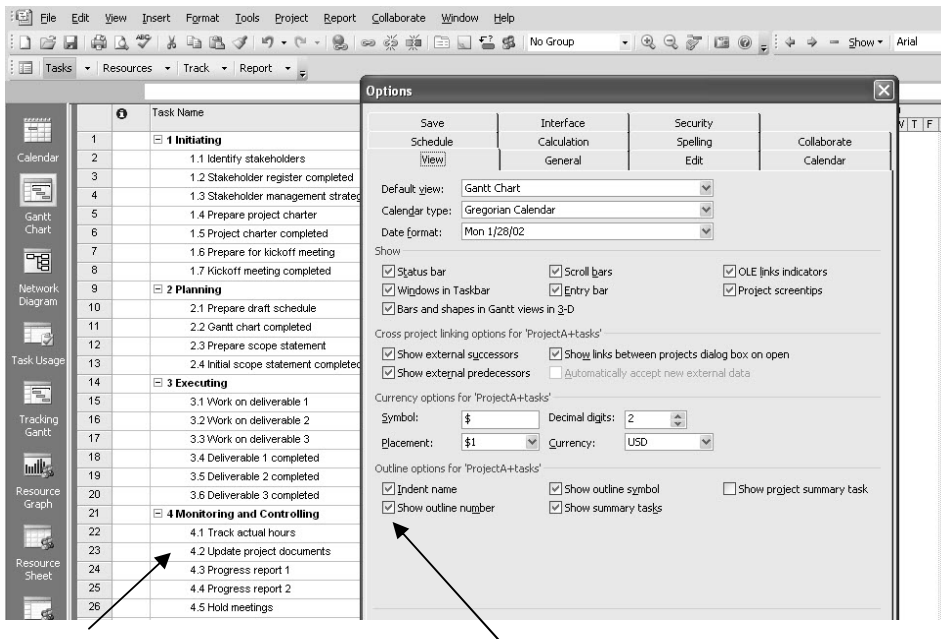
3. *Create other summary tasks and subtasks.* Create subtasks and summary tasks for the other process groups by following the same steps. Indent **Tasks 10** through **13** to make Task 9 a summary task. Indent **Tasks 15** through **20** to make Task 14 a summary task. Indent **Tasks 22** through **26** to make Task 21 a summary task. Indent **Tasks 28** through **30** to make Task 27 a summary task. Widen the Task Name column to see all of your text, as needed.

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. To 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 (the button just to the left of the Indent button). You can also press Alt + Shift + Right Arrow to indent and Alt + Shift + Left Arrow to outdent.

Numbering Tasks

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-19 shows the Options dialog box and resulting outline numbers applied to the WBS tasks.



Outline numbers

Show outline number check box

Figure A-19. Adding automatic outline numbers

Saving Project Files Without a Baseline

An important part of project management is tracking performance against a baseline, or approved plan. It is important to wait until you are ready to save your file with a baseline because Project 2007 will show changes against a baseline. Since you are still developing your project file for the Project A+ project, you want to save the file without a baseline. The default in Project 2007 is to save 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 **wbs** in the File name text box. Browse to the location in which you want to save the file, and then click **Save**. Your Project 2007 file should look like Figure A-20. (Remember that you can adjust the timescale by clicking **Zoom In** or **Zoom Out**.)

HELP: If you want to download the Project 2007 file wbs.mpp to check your work or continue to the next section, a copy is available on the companion Web site for this text, the author's Web site, or from your instructor.

Task Name	Duration	0							Jan 24, '10							Jan 31, '10						
		W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T
<input type="checkbox"/> 1 Initiating	1 day?																					
1.1 Identify stakeholders	1 day?																					
1.2 Stakeholder register completed	1 day?																					
1.3 Stakeholder management strategy cor	1 day?																					
1.4 Prepare project charter	1 day?																					
1.5 Project charter completed	1 day?																					
1.6 Prepare for kickoff meeting	1 day?																					
1.7 Kickoff meeting completed	1 day?																					
<input type="checkbox"/> 2 Planning	1 day?																					
2.1 Prepare draft schedule	1 day?																					
2.2 Gantt chart completed	1 day?																					
2.3 Prepare scope statement	1 day?																					
2.4 Initial scope statement completed	1 day?																					
<input type="checkbox"/> 3 Executing	1 day?																					
3.1 Work on deliverable 1	1 day?																					
3.2 Work on deliverable 2	1 day?																					
3.3 Work on deliverable 3	1 day?																					
3.4 Deliverable 1 completed	1 day?																					
3.5 Deliverable 2 completed	1 day?																					
3.6 Deliverable 3 completed	1 day?																					
<input type="checkbox"/> 4 Monitoring and Controlling	1 day?																					
4.1 Track actual hours	1 day?																					
4.2 Update project documents	1 day?																					
4.3 Progress report 1	1 day?																					
4.4 Progress report 2	1 day?																					
4.5 Hold meetings	1 day?																					
<input type="checkbox"/> 5 Closing	1 day?																					
5.1 Prepare final project report	1 day?																					
5.2 Prepare final presentation	1 day?																					
5.3 Project completed	1 day?																					

Figure A-20. Project 2007 WBS file

DEVELOPING THE SCHEDULE

Many people use Project 2007 for its scheduling features. The first step in using these features, after inputting the WBS for the project, is to change calendars, if needed, and then enter durations for tasks or specific dates when tasks will occur. You must also enter task dependencies in order for schedules to adjust automatically and to do critical path analysis. After entering durations and task dependencies, you can view the network diagram, critical path, and slack information.

Calendars

The standard Project 2007 calendar assumes that working hours are Monday through Friday, from 8:00 a.m. to 5:00 p.m., with an hour for lunch from noon until 1:00 p.m. You can create a different calendar to meet your unique project requirements.

To create a new base calendar using the Tasks pane:

1. *Open a new file.* With Project 2007 open, click the **New** button on the Standard toolbar to open a new Project 2007 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. (If the Tasks pane does not appear on your screen, click View on the Menu bar, and then click Turn On Project Guide to see the Project Guide Task pane). A calendar wizard appears, as shown in Figure A-21.

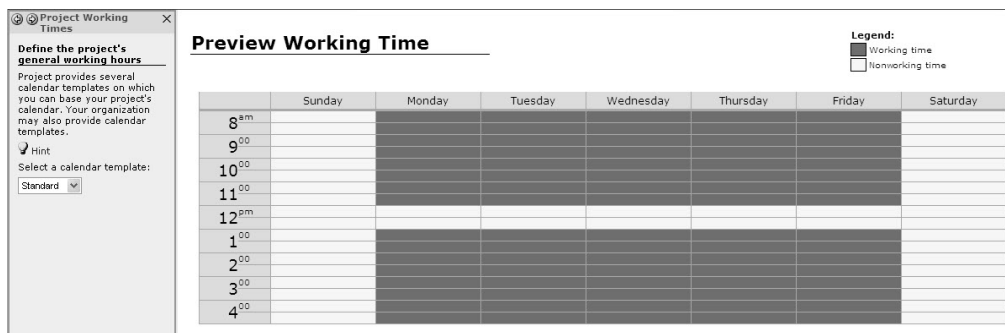


Figure A-21. Changing working time with the tasks pane

2. *Make changes to the calendar using the wizard.* Click **Continue to Step 2** at the lower part of the Project Working Times pane, select the check box for **Friday** to make it a non-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.

To create a new base calendar using the Tools menu:

1. *Access the Change Working Time dialog box.* Click **Tools** on the Menu bar, and then click **Change Working Time**. The Change Working Time dialog box opens.
2. *Name the new base calendar.* In the Change Working Time dialog box, click **Create New Calendar**. The Create New Base Calendar dialog box opens. Click the **Create new base calendar** radio button, type **Project A+** 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 **Project A+** 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 **Adam** in the Resource Name column, press **Enter**, and then select the word **Adam**.
2. *Select the calendar.* Click the **Base Calendar** cell on the right part of the screen for Adam. If the Base Calendar column is not visible, click the horizontal scroll bar to view more columns. Click the **Base Calendar** list arrow to display the options, and then select **Project A+**, as shown in Figure A-22.

Resource Name	Type	Material Label	Initials	Group	Max. Units	Std. Rate	Ovt. Rate	Cost/Use	Accrue At	Base Calendar	Code
Adam	Work		A		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard	
										24 Hours	
										Night Shift	
										Project A+	
										Standard	

Figure A-22. Changing calendars for specific resources

3. *Block off vacation time.* Double-click the resource name **Adam** to display the Resource Information dialog box, and then click the **Change Working Time** button, located on the General tab in the Resource Information dialog box. You can block off vacation time for people by selecting the appropriate days on the calendar and marking them as nonworking days. Click **OK** to accept your changes, and then click **OK** to 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.

Entering Task Durations

You probably noticed that when you enter a task, Project 2007 automatically assigns it a duration of one day, followed by a question mark. To change this default duration, type a task's estimated duration in the Duration column or use the scroll box to select the duration. 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 8d? for a task with an estimated duration of eight days that you want to review later. You can then use the Tasks With Estimated Durations filter to see quickly the tasks for which you need to review duration estimates.

To indicate the length of a task's duration, you normally type both a number and an appropriate duration symbol. If you type only a number, Project 2007 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 two weeks for a task duration, type 2w in the Duration column. (You can also type wk, wks, week, or weeks, instead of just w.) To enter four days for a task's duration, type 4 or 4d in the Duration column. You can also enter elapsed times in the Duration column. For example, 3ed means three elapsed days, and 2ew means two elapsed weeks.

You would use an elapsed duration for a task like "Allow cement to dry." The cement will dry in exactly the same amount of time regardless of whether it is a workday, a weekend, or a holiday. Project's default calendar does not assume that work is done on weekends. You will learn to change the calendar later in this appendix.

It is important to follow a few important rules when entering durations:

- Do not enter durations for summary tasks. Summary task durations are calculated automatically based on the subtasks. Project 2007 will not allow you to enter or change the duration of a summary task. Remember that you

only enter durations for work packages, the lowest-level items in your WBS. The other items are just the WBS hierarchy.

- 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.
- 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, enter durations and then establish dependencies to related tasks.
- To enter recurring tasks, such as weekly meetings, select Recurring Task from the Insert menu. Enter the task name, the duration, and when the task occurs. Project 2007 will automatically insert appropriate subtasks based on the length of the project and the number of tasks required for the recurring task.
- Project 2007 uses a default calendar with standard workdays and hours. Remember to change the default calendar if needed, as shown earlier.

Next, you will set task durations in the Project A+ file that you created and saved in the previous section. If you did not create the file named wbs.mpp, you can download it from the companion Web site for this text.

Use the information in Figure A-23 to enter durations. The Project 2007 row number is shown to the left of each task name in the table.

Task Row	Task Name	Duration
2	Identify stakeholders	3d
3	Stakeholder register completed	0
4	Stakeholder management strategy completed	0
5	Prepare project charter	1w
6	Project charter completed	0
7	Prepare for kickoff meeting	3d
8	Kickoff meeting completed	0
10	Prepare draft schedule	5d
11	Gantt chart completed	0
12	Prepare scope statement	8d
13	Initial scope statement completed	0
15	Work on deliverable 1	3w
16	Work on deliverable 2	5w
17	Work on deliverable 3	6w
18	Deliverable 1 completed	0
19	Deliverable 2 completed	0
20	Deliverable 3 completed	0
24	Progress report 1	0
25	Progress report 2	0
28	Prepare final project report	4d
29	Prepare final presentation	4d
30	Project completed	0

Figure A-23. Task durations for Project A+

Entering Task Durations

To enter task durations for the non-summary tasks:

1. *Enter the duration for Task 2.* Using the wbs file, click the **Duration** column for row 2, Identify stakeholders, type 3d , and then press **Enter**. Notice that the duration for the first task, Initiating, also changed since it is a summary task.
2. *Enter the duration for Task 3.* In the **Duration** column for row 3, Stakeholder register completed, type **0**, then press **Enter**. Remember that a task with zero duration is a milestone. Notice the milestone or black diamond symbol that appears on the Gantt chart.
3. *Enter remaining task durations.* Continue to enter the durations using the information in Figure A-23. Do not enter durations for tasks not listed in the figure.
4. *Insert a recurring task above Task 26, Hold meetings.* Click **Hold meetings** (Task 26) 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.
5. *Enter task and duration information for the recurring task.* Type **Hold meetings** as the task title in the Task Name text box. Type **30min** in the Duration text box. Select the **Weekly** radio button under Recurrence pattern. Make sure that **1** is entered in the **Recur every** list box. Select the **Thursday** check box. In the Range of recurrence section, type **2/1/10** in the Start text box, click the **End by** radio button, and then type **4/29/10** in the End by text box, as shown in Figure A-24. The new recurring task will appear above Task 26, Hold meetings, when you are finished. **Delete task 40**, Hold meetings, by right clicking on row 40 and selecting Delete Task.

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

Figure A-24. Recurring task information dialog box

6. *View the new summary task and its subtasks.* Click **OK**. Project 2007 inserts a new Hold meetings subtask in the Task Name column. Expand the new subtask by clicking the **expand symbol** to the left of Hold meetings. To collapse the recurring task, click the **collapse symbol**. Move your mouse over the Recurring Task symbol in the Indicator column for row 26. Notice that the recurring task appears on the appropriate dates on the Gantt chart.

7. *Adjust the timescale.* Click the **Zoom Out** button to display months in the Gantt chart. Move the **split bar** so that only the Task Name and Duration columns are visible. If needed, increase the Duration column's width so all of the text is visible.

8. *Save your file and name it.* Click **File** on the Menu bar, and then click **Save As**. Enter **schedule** as the filename, and then save the file to the desired location on your computer or network. Notice that all of the tasks still begin on February 1. This will change when you add task dependencies. Keep this file open for the next set of steps.

Establishing Task Dependencies

To use Project 2007 to adjust schedules automatically and perform critical path analysis, you *must* determine the dependencies or relationships among tasks. There are several different methods for creating task dependencies: using the Link Tasks button, using the Predecessors column of the Entry table or the Predecessors tab in the Task Information

dialog box, or clicking and dragging the Gantt chart symbols for tasks with dependencies. You will use the first two methods in the following steps.

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 A+ file, you will also set up some other types of dependencies and use the lag option to set up overlaps between dependent tasks.

TIP: To select adjacent tasks, click and drag the mouse to highlight them. 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 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 double-click on the task, click the Predecessors tab in the Task Information dialog box, and enter the predecessors there.

Next, you will use information from Figure A-25 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, and the remaining dependencies by using whichever method you prefer.

To link tasks or establish dependencies for Project A+:

1. *Display the Predecessors column in the Entry table.* Move the split bar to the right to reveal the full Predecessors column in the schedule.mpp file you saved in the previous section. 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 its predecessor task.* Click the **Predecessors cell for Task 3**, Stakeholder register completed, type **2**, and press **Enter**. Notice that as you enter task dependencies, the Gantt chart changes to reflect the new schedule. Also notice that several cells become highlighted. In this case, the Duration and Finish cells for Task 1, and the Start and Finish cells for Task 3, are highlighted in light blue, showing the Visual Change Highlights feature of Project 2007.
3. *Enter predecessors for Task 4.* Click the **Predecessors cell** for Task 4, type **2**, and press **Enter**.
4. *Establish dependencies using the Link Tasks button.* To link Tasks 5 and 6, click the task name for Task 5 in the Task Name column and drag down through Task 6. Then, click the **Link Tasks** button on the toolbar. Alternately, you can

click **Edit** on the Menu bar, and then click **Link Tasks**. Notice that the result is the same as typing 5 in the Predecessors column for Task 6.

5. Enter dependencies and lag time using the Task Information dialog box. **Double-click on the Task Name for task 5**, Prepare project charter, and then **click on the Predecessors tab** in the Task Information dialog box. **Click in the cell under Task Name**, then **click the down arrow and select Identify stakeholders**. Click in the cell under Type to see the various types of dependencies. For this task, you will keep the default type of finish-to-start. **Click in the cell under Lag**, then **type -50%** and press **Enter**. (Lag means there is a gap between tasks, and lead or negative lag means there is an overlap). Your screen should resemble Figure A-25. Click OK to close the dialog box. Notice that the Predecessor column for task 5 displays 2FS-50%, meaning there is a finish-to-start relationship with task 2 and a lag of -50%, meaning the task can start when task 2 is 50% completed.

The screenshot shows the 'Task Information' dialog box with the 'Predecessors' tab selected. The 'Name' field contains 'Prepare project charter', 'Duration' is '1w', and 'Estimated' is unchecked. Below, the 'Predecessors' table is populated with one entry:

ID	Task Name	Type	Lag
2	Identify stakeholders	Finish-to-Start (FS)	-50%

Figure A-25. Entering predecessor information using the task information dialog box

6. Enter remaining dependencies. **Link the other tasks** by either manually entering the predecessors into the Predecessors column, by using the Link Tasks button, or using the Task Information dialog box. Use the information in Figure A-26 to make your entries. If you have entered all data correctly, the project should end on 4/29, or April 29, 2010. (Note that you could manually enter a Start date for tasks 22 and 23 to make those dates more realistic. The current dependency shows them both ending one day before the project ends.)

Task Row	Task Name	Predecessors
3	Stakeholder register completed	2
4	Stakeholder management strategy completed	2
5	Prepare project charter	2FS-50%
6	Project charter completed	5
7	Prepare for kickoff meeting	2,6
8	Kickoff meeting completed	7,6
10	Prepare draft schedule	5,12FS-50%
11	Gantt chart completed	10
12	Prepare scope statement	5
13	Initial scope statement completed	12
15	Work on deliverable 1	12
16	Work on deliverable 2	18
17	Work on deliverable 3	18
18	Deliverable 1 completed	15
19	Deliverable 2 completed	16
20	Deliverable 3 completed	17
22	Track actual hours	43FF-1 day,2
23	Update project documents	43FF-1 day,3
41	Prepare final project report	18,19,20
42	Prepare final presentation	18,19,20
43	Project completed	41,42

Figure A-26. Predecessor information for Project A+

7. *Add the project summary task.* Click **Tools** from the Menu bar, and select **Options**. Click on the View tab if needed, then check the **Show project summary task checkbox**, and then click **OK**. Project adds a new row, row 0, and enters the name of the project in the Task Name column. It also makes this new task a summary task for the whole project. If needed, click the Zoom Out button to view the Gantt chart timescale in months. When you finish, your screen should resemble Figure A-27. Double-check your screen to make sure you entered the dependencies correctly.

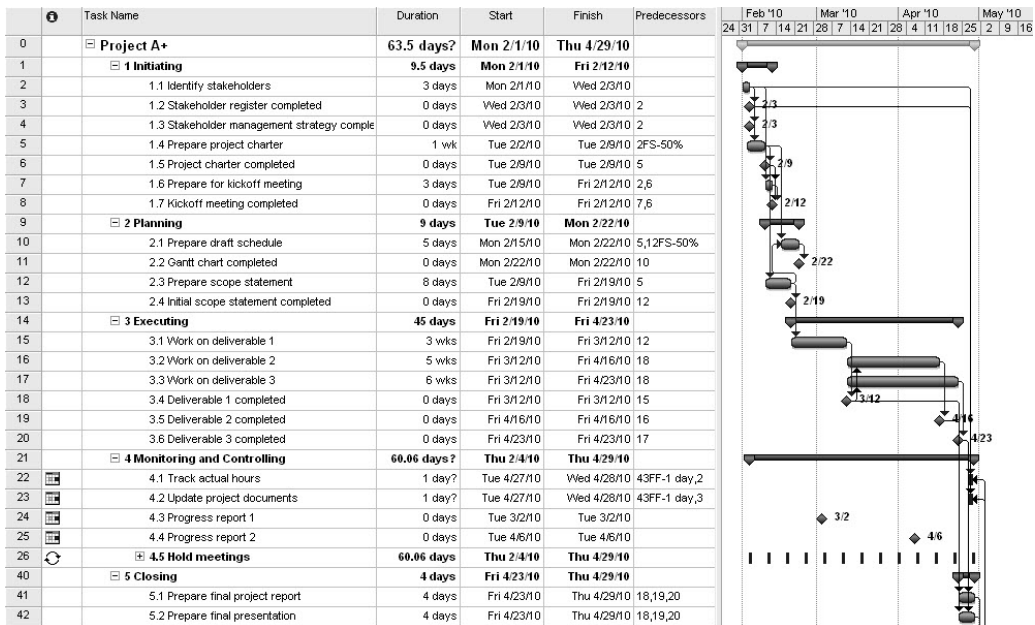


Figure A-27. Project A+ file with durations and dependencies entered

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.

HELP: If your previewed file does not resemble Figure A-27, you may need to adjust the location of the split bar between the Entry table and the Gantt chart. 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 entire column, and then select Print Preview again. Also make sure your timescale is correct. You should not print a Project file until the Print Preview displays the desired information.

Gantt Charts, Network Diagrams, and Critical Path Analysis

Project 2007 shows a Gantt chart as the default view to the right of the Entry table. As described earlier in this text, network diagrams are often used to show task dependencies. This section explains important information about Gantt charts and network diagrams and describes how to make critical path information more visible in the Gantt Chart view.

Because you have already created task dependencies, you can now find the critical path for Project A+. You can view the critical tasks by changing the color of those items in the Gantt Chart view. Tasks on the critical path will automatically be red in the Network Diagram view. You can also view critical path information in the Schedule table or by using the Critical Tasks report.

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

1. *Using the schedule.mpp file you previously saved, 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-28. Click **OK** to accept the changes to the text styles.

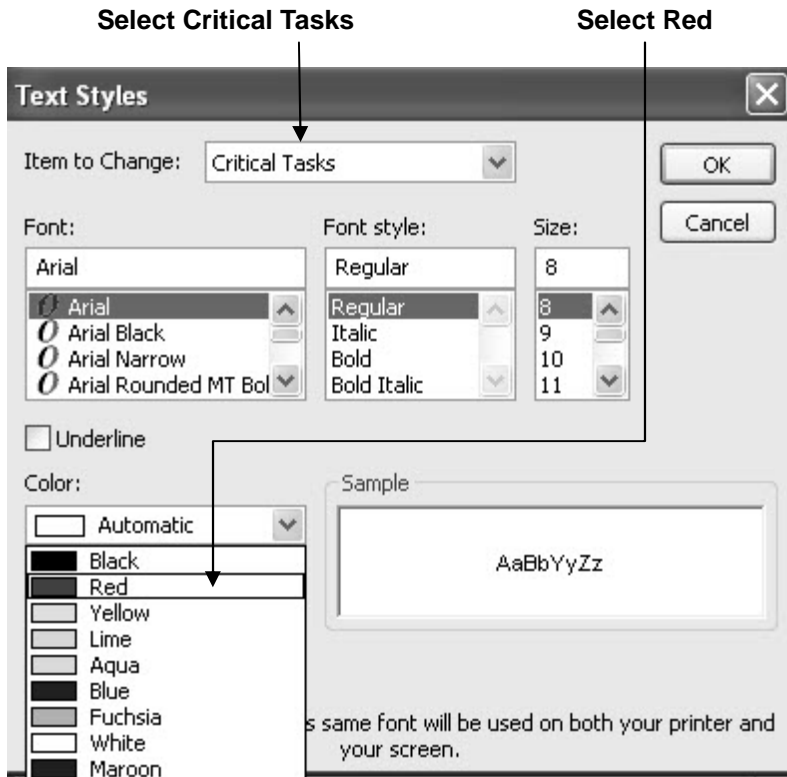


Figure A-28. Displaying critical tasks in red

3. *Open the Gantt Chart Wizard.* Click **Format** on the Menu bar and then select **Gantt Chart Wizard**. 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-29. 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.

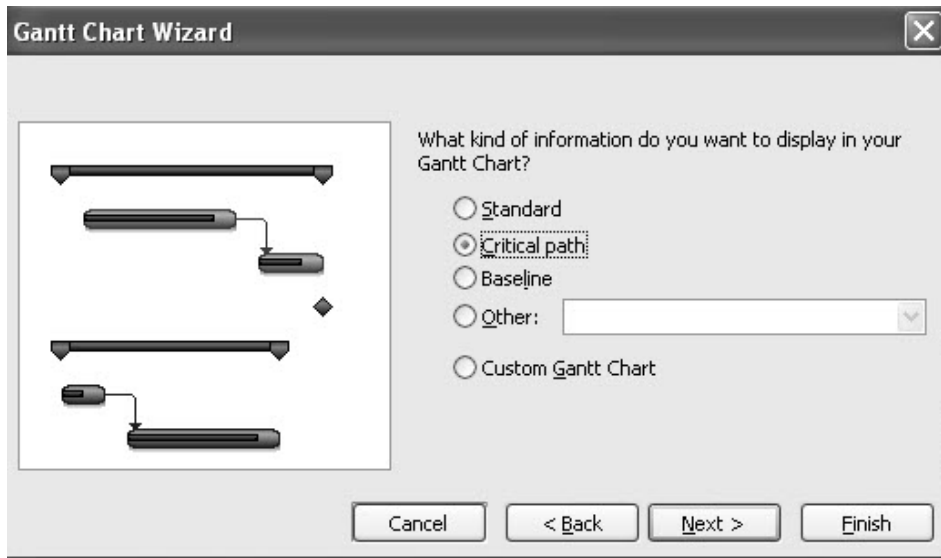


Figure A-29. Gantt chart wizard showing critical path format

5. *Format the Gantt chart.* Click **Format It**, and then click **Exit Wizard**.

Critical taskbars on the Gantt chart will now be red. Task information and bars for all the critical tasks should be displayed in red on your computer screen. Notice that working on deliverables 1 and 3 are on the critical path while working on deliverable 2 is not.

6. *View the network diagram.* Click the **Network Diagram** button on the View Bar or select **Network Diagram** from the View menu. To see more tasks in the Network Diagram view, click the **Zoom Out** button one or more times. You can also use the scroll bars to see different parts of the network diagram. Figure A-30 shows all of the tasks in the Project A+ network diagram. Note that milestone tasks, such as Stakeholder management strategy completed, the fourth box on the top, appear as pointed rectangular boxes, while other tasks appear as rectangles. Move your mouse over that box to see it in a larger view. Notice that tasks on the critical path automatically appear in red, while noncritical tasks appear in blue. 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. As you can see, network diagrams can be messy, so you might prefer to highlight critical tasks on the Gantt chart as you did earlier for easier viewing.

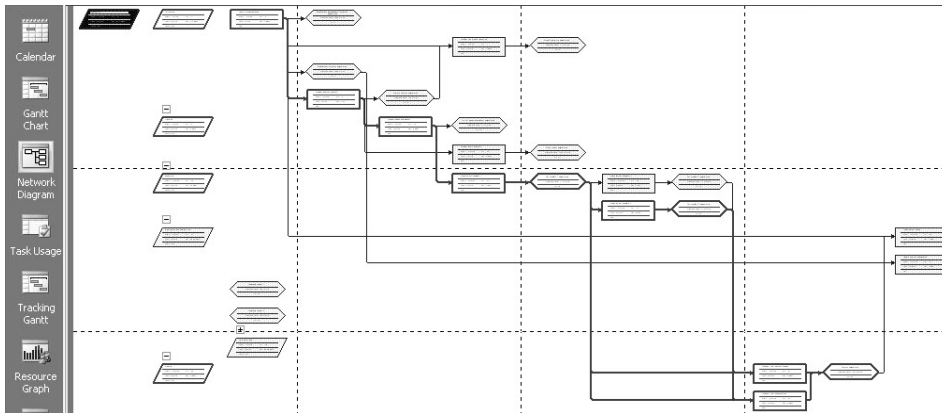


Figure A-30. Network diagram view

7. *View the schedule table.* Click the **Gantt Chart** button on the View Bar to return to Gantt Chart view. 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. Move the split bar to the right until you see the entire Schedule table. Your screen should resemble Figure A-31. 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.

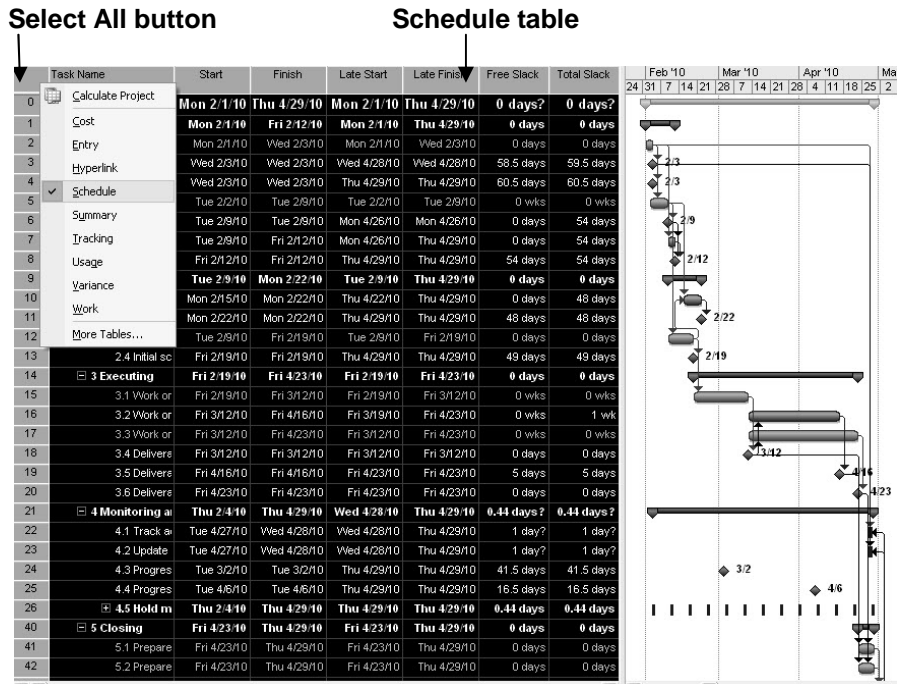


Figure A-31. Schedule table view

8. *Open the Reports dialog box. Click **Report** on the Menu bar, and then click **Reports**. Double-click **Overview** to open the Overview Reports dialog box, and then double-click **Critical Tasks**. A Critical Tasks report as of today's date is displayed, as shown in Figure A-32.*

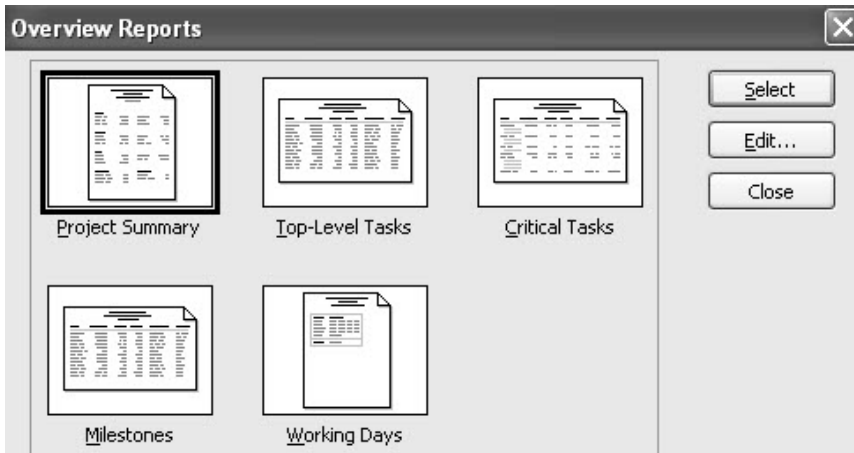


Figure A-32. Critical tasks report

9. *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 final schedule.mpp file. Close Project 2007 if you are not continuing to the next section.

HELP: If you want to download the Project 2007 file schedule.mpp to check your work or continue to the next section, a copy is available on the companion Web site for this text, the author's Web site, or from your instructor.

Next you will explore some of the cost and resource management features of Project 2007.

PROJECT COST AND RESOURCE MANAGEMENT

Many people do not use Project 2007 for cost or resource 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 or resource management features of Project 2007. However, these features of Project 2007 make it possible to integrate total project information more easily. This section offers brief instructions for entering fixed and variable cost estimates, assign resources to tasks, view resource histograms, and enter actual cost and schedule information after establishing a baseline plan. It also explains how to use Project 2007 for earned value management. More details on these features are available in Project 2007 Help, online tutorials, or other texts.

Entering Fixed and Variable Cost Estimates

You can enter costs as fixed or variable. Fixed costs include costs like material purchases. For example, you might buy a new software program specifically for a project or hire a consultant for a fixed fee. Variable costs can apply to materials or human resources. On many projects, human resource costs are the largest percentage of total project costs.

Entering Fixed Costs in the Cost Table

The Cost table allows you to easily enter fixed costs related to each task. You will enter a fixed cost of \$200 related to Task 15, Work on deliverable 1.

To enter a fixed cost:

1. *Display the Cost Table view.* Open your Project 2007 file schedule.mpp, if necessary. Right-click the **Select All** button to the left of the Task Name column heading and select **Cost**. Alternatively, you can click **View** on the Menu bar, point to **Table: Entry**, and then click **Cost**. The Cost table replaces the Entry table to the left of the Gantt chart. Widen the Task Name column and move the split bar to the right until you see the entire Cost table.

2. *Enter a fixed cost.* In the **Fixed Cost** column for **Task 15**, Work on deliverable 1, type **200** and press **Enter**. Notice that the Total Cost and Remaining Cost columns reflect this entry. Your screen should resemble Figure A-33.

Select All button **Fixed Cost column of cost table**

Task Name	Fixed Cost	Fixed Cost Accrual	Total Cost	Baseline	Variance	Actual	Remaining
0 Project A+	\$0.00	Prorated	\$200.00	\$0.00	\$200.00	\$0.00	\$200.00
1 1 Initiating	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2 1.1 Identify stakeholders	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
3 1.2 Stakeholder register completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
4 1.3 Stakeholder management strategy completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5 1.4 Prepare project charter	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
6 1.5 Project charter completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
7 1.6 Prepare for kickoff meeting	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
8 1.7 Kickoff meeting completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
9 2 Planning	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
10 2.1 Prepare draft schedule	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
11 2.2 Gantt chart completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
12 2.3 Prepare scope statement	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
13 2.4 Initial scope statement completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
14 3 Executing	\$0.00	Prorated	\$200.00	\$0.00	\$200.00	\$0.00	\$200.00
15 3.1 Work on deliverable 1	\$200.00	Prorated	\$200.00	\$0.00	\$200.00	\$0.00	\$200.00
16 3.2 Work on deliverable 2	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
17 3.3 Work on deliverable 3	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
18 3.4 Deliverable 1 completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
19 3.5 Deliverable 2 completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
20 3.6 Deliverable 3 completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
21 4 Monitoring and Controlling	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
22 4.1 Track actual hours	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
23 4.2 Update project documents	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
24 4.3 Progress report 1	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
25 4.4 Progress report 2	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
26 4.5 Hold meetings	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Figure A-33. Entering a fixed cost

Entering Resource Information and Cost Estimates

Several methods are available for entering resource information in Project 2007. 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. 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, such as using the toolbar or using the split window, which is the recommended approach to have the most control over how resources are assigned because Project 2007 makes several assumptions about resources assignments that might mess up your schedule or costs. Next, you will enter information for three people working on Project A+ and assign them to a few tasks using various methods.

To enter basic information about each person into the Resource Sheet and assign them to tasks using the Entry table and toolbar:

1. *Display the Resource Sheet view.* 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 Figure A-33 into the Resource Sheet. The three resources names are **Kathy, Dan, and Scott**. The Std. Rate and Ovt. Rate for Kathy is **40**, and the Std. and Ovt. Rates for Dan and Scott are **30**. Type the information as shown and press the **Tab** key to move to the next field. When you type the standard and overtime rates, you can just type the number, such as 40, and Project 2007 will automatically enter \$40.00/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.” Your screen should resemble Figure A-34 when you are finished entering the resource data.

Resource Name	Type	Material Label	Initials	Group	Max. Units	Std. Rate	Ovt. Rate	Cost/Use	Accrue At	Base Calendar
Kathy	Work		K		100%	\$40.00/hr	\$40.00/hr	\$0.00	Prorated	Standard
Dan	Work		D		100%	\$30.00/hr	\$30.00/hr	\$0.00	Prorated	Standard
Scott	Work		S		100%	\$30.00/hr	\$30.00/hr	\$0.00	Prorated	Standard

Figure A-34. Resource sheet view with resource data entered

TIP: 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 2007 will then automatically assign those people based on their maximum units. For example, if someone can work only 50% of his or her time on a project throughout most of the project, enter 50% 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 50% of a standard eight-hour workday, or four hours per day. You can also enter the number of hours each person is scheduled to work, as shown later.

3. *Assign resources to tasks.* Click the **Gantt Chart** view on the View bar, and then click the **Select All** button and switch back to the **Entry** table. Widen the Task Name column and move the split bar to reveal all of the entry table columns, if needed.

4. *Assign Kathy to task 2, Identify stakeholders.* Click in the Resource Names cell for row 2. Click the list arrow, and then click on Kathy. Notice that the resource choices are the names you just entered in the Resource Sheet. Also notice that after you select a resource, his or her name appears on the Gantt chart, as shown in Figure A-35. To assign more than one resource to a task using the list arrow, type a comma after the resource name and select another. Note that Project 2007 will assume that each resource is assigned full-time to tasks using this method.

Task Name	Duration	Start	Finish	Predecessors	Resource Names
Project A+	63.5 days?	Mon 2/1/10	Thu 4/29/10		
1 Initiating	9.5 days	Mon 2/1/10	Fri 2/12/10		
1.1 Identify stakeholders	3 days	Mon 2/1/10	Wed 2/3/10		Kathy
1.2 Stakeholder register completed	0 days	Wed 2/3/10	Wed 2/3/10	2	Dan
1.3 Stakeholder management strategy completed	0 days	Wed 2/3/10	Wed 2/3/10	2	Kathy
1.4 Prepare project charter	1 wk	Tue 2/2/10	Tue 2/9/10	2FS-50%	Scott



Figure A-35. Resource assigned using the entry table

5. *Assign all three resources to a task using the toolbar.* Click the task name for Task 5, **Prepare project charter**. Click the **Assign Resources** button on the toolbar. (If the Assign Resources button is not visible, click the **Toolbar Options** button on the toolbar, and then click the **Assign Resources** button. You can also press Alt+F10.) The Assign Resources dialog box, which lists the names of the people assigned to the project, is displayed, as shown in Figure A-365. You could select one resource at a time and click Assign, or click on the first name, hold down the Shift key, click on the last name to select all of the names at once, and then click Assign. Notice that all three resource names appear in the Resource Names column and on the Gantt chart for this task.

TIP: Project 2007 assumes resources are all assigned full-time to tasks using the Entry table and toolbar methods. Also, if you change the number of resources assigned to tasks, Project 2007 will change the task duration since it assumes tasks durations are resource-driven. This is why the split window method is highly recommended for assigning resources.

Assign Resources icon

The screenshot displays the Microsoft Project 2007 interface. The 'Assign Resources' dialog box is open, showing the following details:

- Task:** Prepare project charter
- Resource list options:** +
- Resources from costs:**

Resource Name	R/D	Units	Cost
✓ Dan		100%	\$1,200.00
✓ Kathy		100%	\$1,600.00
✓ Scott		100%	\$1,200.00

Buttons on the right side of the dialog include: Assign, Remove, Replace..., Graphs..., Close, and Help. A note at the bottom states: "Hold down Ctrl and click to select multiple resources".

The background shows a Gantt chart with tasks and resource assignments. The 'Assign Resources' icon in the toolbar is highlighted by an arrow pointing to the text 'Assign Resources icon' above it.

Figure A-36. Assign resources dialog box

6. *Clear the resource assignments.* View the cost table again by right-clicking the **Select All** button and selecting **Cost**. Notice how much money is being charged to the tasks where resources were entered. Project assumes that resources are assigned full-time to tasks, which is not what you want to do here. Right-click the **Resource Names** column for Task 2, and then select **Clear Contents** to remove the resource assignments. Do the same for Task 5.

TIP: Project 2007 includes a multiple-level undo feature, so you can click the Undo button on the standard toolbar several times to undo several steps in your file. For example, if you notice that your resources assignments are incorrect, you can undo them or clear them. Again, it is highly recommended that you use the split window method shown in the following steps to assign resources so you make sure you enter them correctly.

To assign resources using the split window:

1. *Split the window to reveal more information.* Click **Window** on the Menu bar, and then click **Split**. The Cost Table and 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 for 10 hours.* Select Task 2, **Identify stakeholders** 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**. Type **10h** or use the list arrow to select 10h in the **Work** column.
3. *Remove the Effort driven option.* **Uncheck the Effort driven box** in the lower window so Project does not change task durations based on resource entries for that task. Your screen should resemble Figure A-37.

Resource Name column in Resource Cost window Cost Table window

Work column Effort driven option

Task Name	Fixed Cost	Fixed Cost Accrual	Total Cost	Baseline	Variance	Actual
0 Project A+	\$0.00	Prorated	\$600.00	\$0.00	\$600.00	\$0.00
1 Initiating	\$0.00	Prorated	\$400.00	\$0.00	\$400.00	\$0.00
2 1.1 Identify stakeholders	\$0.00	Prorated	\$400.00	\$0.00	\$400.00	\$0.00
3 1.2 Stakeholder register completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00
4 1.3 Stakeholder management strategy completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00
5 1.4 Prepare project charter	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00
6 1.5 Project charter completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00
7 1.6 Prepare for kickoff meeting	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00
8 1.7 Kickoff meeting completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00
9 2 Planning	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00
10 2.1 Prepare draft schedule	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00
11 2.2 Gantt chart completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00
12 2.3 Prepare scope statement	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00
13 2.4 Initial scope statement completed	\$0.00	Prorated	\$0.00	\$0.00	\$0.00	\$0.00

Name: Identify stakeholders Duration: 1.25d Effort driven Previous Next

Start: Mon 2/1/10 Finish: Tue 2/2/10 Task type: Fixed Units % Complete: 0%

ID	Resource Name	Units	Work	ID	Predecessor Name	Type	Lag
1	Kathy	100%	10h				

Figure A-37. Split screen view for entering resource information

4. Enter the resource assignment and review the Gantt chart. Click **OK** in the Resource Cost window. Notice that the duration for Task 2 is still one week, and Kathy is assigned to that task. Also notice that the costs make sense now for Task 2 since only 10 hours of Kathy's time are being assigned to it instead of 40 hours for full-time work for the week.

5. Close the file without saving it. Close the file, but do not save the changes you made.

Entering Baseline Plans, Actual Costs, and Actual Times

After entering tasks in a WBS, establishing task durations and dependencies, and assigning costs and resources, 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 2007 to help control projects and view earned value information, you must establish a baseline plan, enter actual costs, and enter actual durations. In the next series of steps you will use a new file called tracking.mpp that downloaded from the companion Web site for this text (<http://groups.google.com/group/intropm>) or the author's personal Web site (www.kathyschwalbe.com).

To save a file as a baseline and enter actual information:

1. Open the file called tracking.mpp. Notice that this project was planned to start on January 5 and end on February 13, have three resources assigned to it, and cost \$11,200. Click **Tools** on the Menu bar, point to **Tracking**, and then click **Set Baseline**, as shown in Figure A-38.

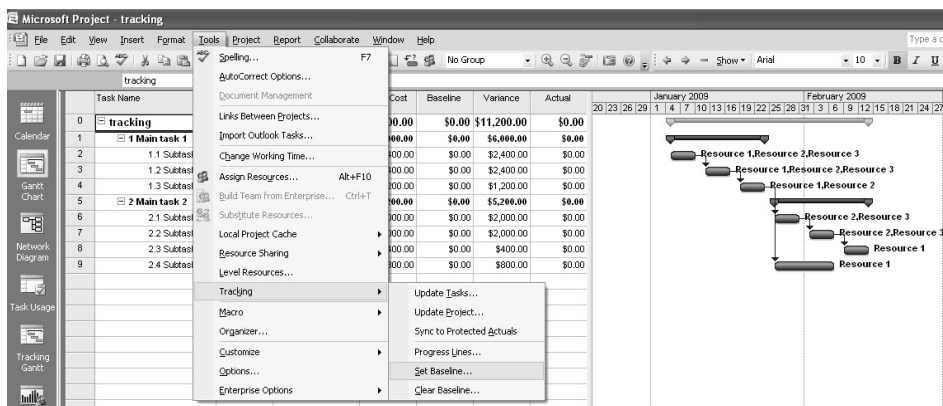


Figure A-38. Saving a baseline

2. Save the file as a baseline. Examine the Set Baseline dialog box. Click the drop-down arrow to see that you can set up to ten baselines. Accept the default to save the entire project. Click **OK**. Notice that the Baseline column changes to blue.

3. *Display the Tracking toolbar.* Click **View** on the Menu bar, point to **Toolbars**, and then click **Tracking**. Move the toolbar if desired. Move your mouse over each button the Tracking toolbar to see what it is called.
4. *Display the Tracking table.* Right-click the **Select All** button in the Entry table, 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. Your screen should resemble Figure A-39.

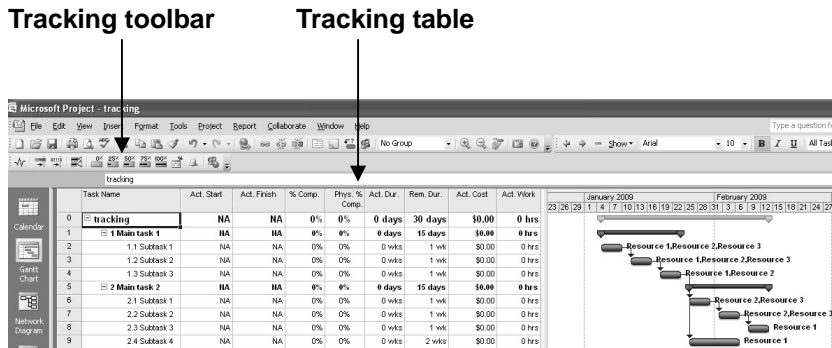


Figure A-39. Using the tracking table and tracking toolbar

5. *Mark Tasks 2 through 4 as 100% complete.* Click the Task Name for Task 2, **Subtask 1 under Main task 1**, and drag down through Task 4 to highlight those 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-40. Notice that the Gantt chart bars for those three tasks now have a blank line through them.

Task Name	Act. Start	Act. Finish	% Comp.	Phys. % Comp.	Act. Dur.	Rem. Dur.	Act. Cost	Act. Work
0 tracking	Mon 1/5/09	NA	38%	0%	25 days	18.75 days	\$6,000.00	320 hrs
1 Main task 1	Mon 1/5/09	Fri 1/23/09	100%	0%	15 days	0 days	\$6,000.00	320 hrs
2 1.1 Subtask 1	Mon 1/5/09	Fri 1/9/09	100%	0%	1 wk	0 wks	\$2,400.00	120 hrs
3 1.2 Subtask 2	Mon 1/12/09	Fri 1/16/09	100%	0%	1 wk	0 wks	\$2,400.00	120 hrs
4 1.3 Subtask 3	Mon 1/19/09	Fri 1/23/09	100%	0%	1 wk	0 wks	\$1,200.00	60 hrs
5 Main task 2	NA	NA	0%	0%	0 days	15 days	\$0.00	0 hrs
6 2.1 Subtask 1	NA	NA	0%	0%	0 wks	1 wk	\$0.00	0 hrs
7 2.2 Subtask 2	NA	NA	0%	0%	0 wks	1 wk	\$0.00	0 hrs
8 2.3 Subtask 3	NA	NA	0%	0%	0 wks	1 wk	\$0.00	0 hrs
9 2.4 Subtask 4	NA	NA	0%	0%	0 wks	2 wks	\$0.00	0 hrs

Figure A-40. Tracking table information

6. *Enter actual completion dates for Task 6.* Click the Task Name for Task 6, **Subtask 1 under Main task 2**, and then click the **Update Tasks** button on right side of the Tracking toolbar next to the 100% button. The Update Tasks dialog box opens. For Task 6, enter the Actual Start date as **1/26/09** (the same as the Current start date) and the Actual Finish date as **2/9/09** (later than the Current finish date), as shown in Figure A-41. Click **OK**. Notice how the information in the tracking sheet has changed.

Figure A-41. Update tasks dialog box

7. *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 (move it to the left) to see symbols on the Tracking Gantt chart. Also move the **split bar** and adjust column widths as needed. Your screen should resemble Figure A-42. The blue bar for task 6 shows the actual time you just entered. Notice that the delay in this one task on the critical path has caused the planned completion date for the entire project to slip. Also notice the Indicator column to the far left. The check marks show that tasks are completed.

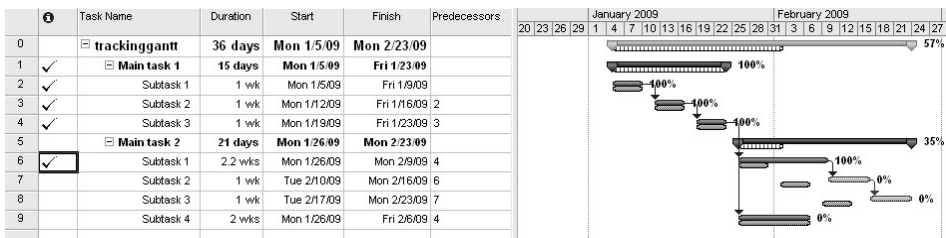


Figure A-42. Tracking Gantt chart view

8. *Save your file as a new file named actuals.mpp.* Click **File** on the Menu bar, and then click **Save As**. Name the file **actuals**, 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 5, show the percentage of the work completed (35% in this example). The project summary task bar indicates that the entire project is 57% complete. 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.

VIEWING EARNED VALUE MANAGEMENT

Earned value management is an important project management technique for measuring project performance. Because you have entered actual information, you can now view earned value information in Project 2007. You can also view an earned value report using the new visual reports feature in Project 2007.

To view earned value information:

1. *View the Earned Value table.* Using the actual file you just saved (or downloaded from the companion Web site), click **View** on the Menu bar, point to **Table: Entry**, select **More Tables**, and double-click **Earned Value**. Move the split bar to the right to reveal all of the columns, as shown in Figure A-43. Note that the Earned Value table includes columns for each earned value acronym, such as SV, CV, etc., as explained in this text. Also note that the EAC (Estimate at Completion) is higher than the BAC (Budget at Completion) starting with Task 6, where the task took longer than planned to complete. Task 9 shows a VAC (Variance at Completion) of (\$3,360.00), meaning the project is projected to cost \$3,360 more than planned at completion at that point in time. Remember that not all of the actual information has been entered yet. Also note that the date on your computer must be set later than the date of a completed task for the data to calculate properly.

Task Name	Planned Value - PV (BCWS)	Earned Value - EV (BCWP)	AC (ACWP)	SV	CV	EAC	BAC	VAC
0 <input type="checkbox"/> actuals	\$11,200.00	\$8,000.00	\$10,400.00	(\$3,200.00)	(\$2,400.00)	\$14,560.00	\$11,200.00	(\$3,360.00)
1 <input type="checkbox"/> Main task 1	\$6,000.00	\$6,000.00	\$6,000.00	\$0.00	\$0.00	\$6,000.00	\$6,000.00	\$0.00
2 <input type="checkbox"/> Subtask 1	\$2,400.00	\$2,400.00	\$2,400.00	\$0.00	\$0.00	\$2,400.00	\$2,400.00	\$0.00
3 <input type="checkbox"/> Subtask 2	\$2,400.00	\$2,400.00	\$2,400.00	\$0.00	\$0.00	\$2,400.00	\$2,400.00	\$0.00
4 <input type="checkbox"/> Subtask 3	\$1,200.00	\$1,200.00	\$1,200.00	\$0.00	\$0.00	\$1,200.00	\$1,200.00	\$0.00
5 <input type="checkbox"/> Main task 2	\$5,200.00	\$2,000.00	\$4,400.00	(\$3,200.00)	(\$2,400.00)	\$11,440.00	\$5,200.00	(\$6,240.00)
6 <input type="checkbox"/> Subtask 1	\$2,000.00	\$2,000.00	\$4,400.00	\$0.00	(\$2,400.00)	\$4,400.00	\$2,000.00	(\$2,400.00)
7 <input type="checkbox"/> Subtask 2	\$2,000.00	\$0.00	\$0.00	(\$2,000.00)	\$0.00	\$2,000.00	\$2,000.00	\$0.00
8 <input type="checkbox"/> Subtask 3	\$400.00	\$0.00	\$0.00	(\$400.00)	\$0.00	\$400.00	\$400.00	\$0.00
9 <input type="checkbox"/> Subtask 4	\$800.00	\$0.00	\$0.00	(\$800.00)	\$0.00	\$800.00	\$800.00	\$0.00

Figure A-43. Earned value table

2. *View the earned value chart.* Click **Report** on the Menu bar, and then click **Visual Reports** to open the Visual Reports dialog box. Click **Earned Value Over Time Report**, as shown in Figure A-44. Notice the sample of the selected report on the right side of the dialog box. If you have Excel, click **View** to see the resulting report as Project 2007 automatically creates Excel data and a chart based on your current file. Close Excel without saving the file, and then click the **Close** button of the Visual Reports dialog box.

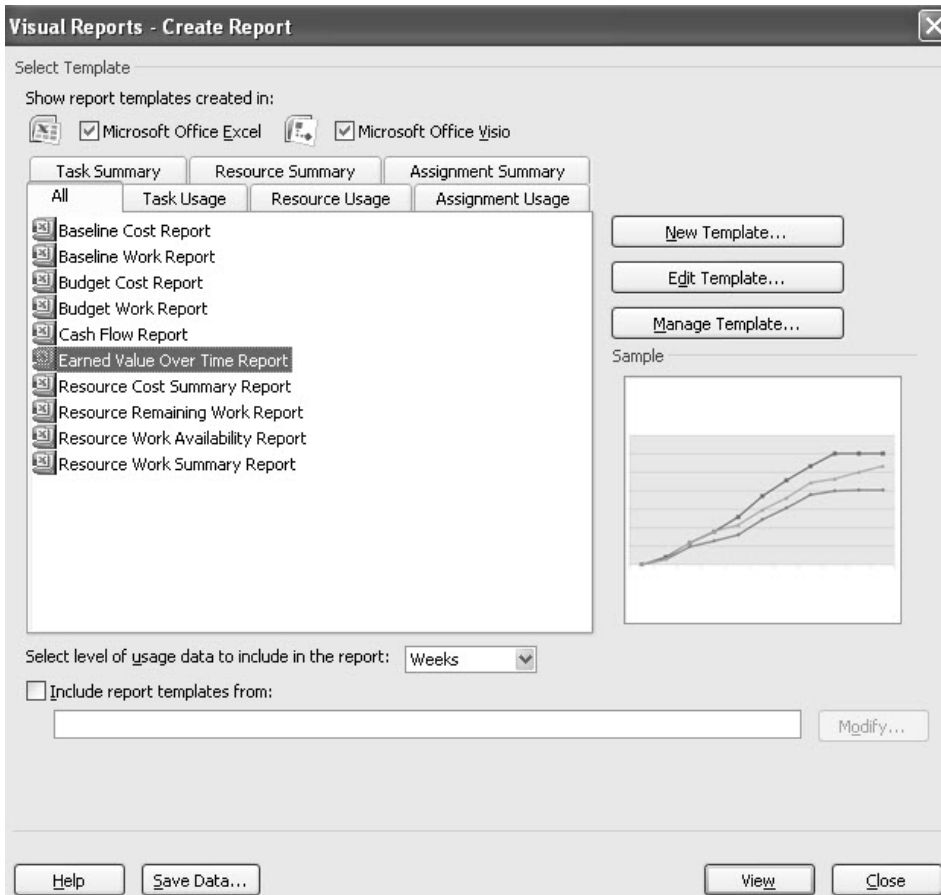


Figure A-44. Visual reports dialog box

3. *Save and close the file.* Click the **Save** button on the Standard toolbar, and then close the tracking.mpp file. You can also exit Project 2007 and take a break, if desired.

HELP: To use all of the visual reports features, you must have .Net Framework 2.0, Excel 2007, and Visio 2007 installed on your computer. You may also need to adjust data in Excel, such as displaying weeks or months versus quarters, to get the reports to display as desired.

Next you will use a few more features of Project 2007 to help tie your Project to your other project documents.

INTEGRATING PROJECT 2007 WITH OTHER APPLICATIONS

Project 2007 provides many different tables, views, reports, and formatting features 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 insert hyperlinks within Project 2007 to other project documents, and how to use the copy picture feature to insert Project 2007 screens into other documents.

Common Reports

As you have seen, you can easily change and print out various table views in Project 2007, such as the Entry Table, Cost Table, Schedule Table, and so on. Many different reports are also available in Project 2007, categorized as follows when clicking Reports on the Menu bar, and then Reports, as shown in Figure A-45.



Figure A-45. Reports dialog box

- Overview reports include:
 - Project Summary
 - Top-Level Tasks
 - Critical Tasks
 - Milestones
 - Working Days

- Current Activities reports include:
 - Unstarted Tasks
 - Tasks Starting Soon
 - Tasks In Progress
 - Completed Tasks
 - Should Have Started Tasks
 - Slipping Tasks
- Cost reports include:
 - Cash Flow
 - Budget
 - Overbudget Tasks
 - Overbudget Resources
 - Earned Value
- Assignments reports include:
 - Who Does What
 - Who Does What When
 - To-do List
 - Overallocated Resources
- Workload reports include:
 - Task Usage
 - Resource Usage
- Custom allows you to customize and save your own report formats.

By selected Visual Reports from the Report menu, as shown earlier in Figure A-44, you can access the following types of reports:

- Baseline Cost Report
- Baseline Work Report
- Budget Cost Report
- Budget Work Report
- Cash Flow Report
- Earned Value Over Time Report
- Resource Cost Summary Report

- Resource Remaining Work Report
- Resource Work Availability Report
- Resource Work Summary Report

Feel free to experiment with the various reports available in Project 2007 or to create your own.

Creating Hyperlinks to Other Files

Some people like to use their Project 2007 file as a main source of information for many different project documents. To do this, you can simply insert a hyperlink to the documents you listed as part of your WBS. For example, you can create a hyperlink to the file with the stakeholder register you listed as a milestone in your Task Name column earlier.

To insert a hyperlink within a Project 2007 file:

1. Open the **schedule.mpp** file. Use the file you saved earlier or download it from the companion Web site for this text. The Entry table and Gantt Chart view should display.
2. *Select the task in which you want to insert a hyperlink.* Click the Task Name for Task 3, **Stakeholder register completed**.
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 or click the hyperlink button on the toolbar. The Insert Hyperlink dialog box opens, as shown in Figure A-46. You will have different folders visible based on your computer's directory structure.

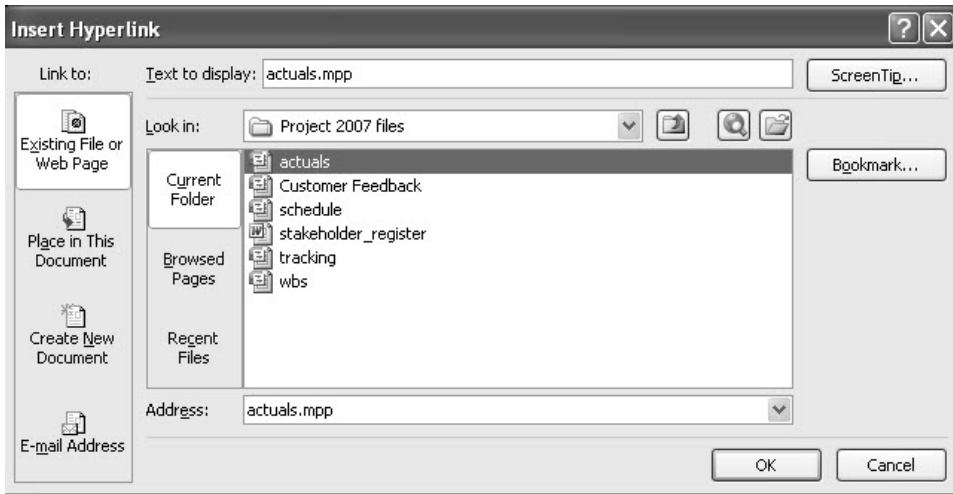


Figure A-46. Insert hyperlink dialog box

4. *Double-click the filename of the hyperlink file.* Change the **Look in:** information until you find where you have saved the files you downloaded for this appendix. Double-click the Word file named **stakeholder_register**, and then click **OK**. A Hyperlink button appears in the Indicators column to the left of the Task Name for Task 3. Move your mouse over the hyperlink button until the mouse pointer changes to the Hand symbol to reveal the name of the hyperlinked file. If you click on it, the file will open.

Using the Copy Picture Feature

The Copy Picture feature helps you easily copy images from Project 2007 into other applications. 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 feature:

1. *Prepare the file you want to copy.* Again using the schedule file, adjust screen elements so your screen resembles Figure A-47. You may need to remove some of the toolbars by selecting Tools from the Menu bar and unchecking them to get the entire image to show on your screen. Drag the split bar so the entire Predecessors column is showing. Click in the Task Name column for task 0. Make sure you can see the entire Gantt chart on your screen.

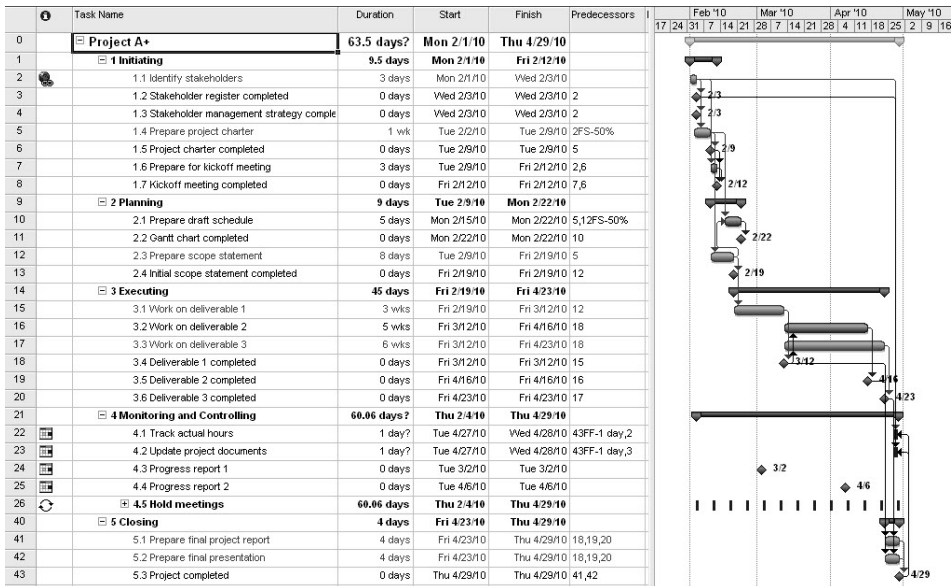


Figure A-47. File ready for copy picture feature

2. Open the **Copy Picture** dialog box. Click **Report** on the Menu bar, and then click **Copy Picture** to display the Copy Picture dialog box. Keep the default settings. Click **OK**.

3. Open the application where you want to copy the picture and paste it in. Open a new file in Microsoft Word, or another application, if desired. Copy the picture of your Project 2007 file by pressing **Ctrl+V** or using another method to paste the picture. Figure A-48 shows the resulting picture in a Word file.

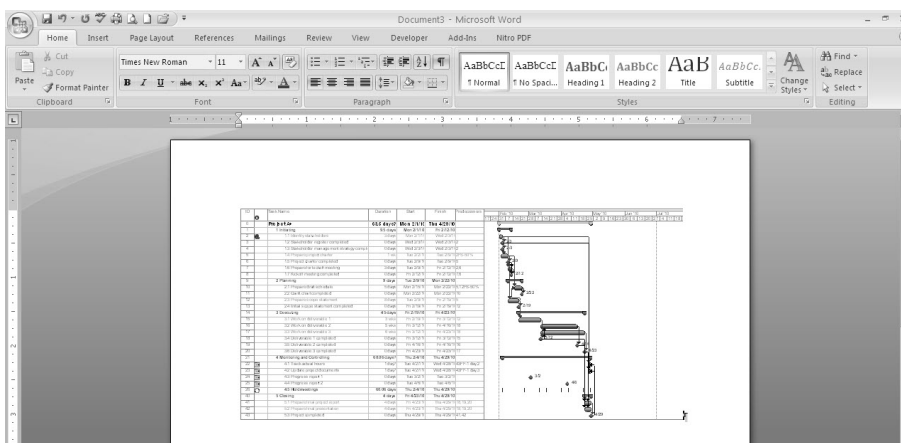


Figure A-48. Project 2007 picture copied into Microsoft Word

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

You have really just touched the surface of Project 2007's powerful features, but you probably know more than most people who have this software! There are several books with more detailed information on using Project 2007 that you can use to learn even more, or you can experiment with the software and Help feature to understand it more.

DISCUSSION QUESTIONS

1. What are some unique features of project management software?
2. How do you create a WBS in Project 2007?
3. How do you enter task durations and establish dependencies between tasks?
4. What is the recommended method for assigning resources to tasks? Why is it the preferred method?
5. How do you establish a baseline in Project 2007 and enter actual information?
6. What are some of the reports built-in to Project 2007? Which ones do you think are commonly used?
7. How do you create links to other files from within Project 2007? How can you easily copy an image of a screen from Project 2007 into another application?

EXERCISES

1. To make sure you understand the information in this appendix, perform the steps yourself. Print out the following screens or send them to your instructor, as directed:
 - a. The Schedule table view for the Customer Feedback file, similar to Figure A-11.
 - b. The Customer Feedback file filtered to show only milestones, similar to Figure A-14.
 - c. The wbs file without the Closing tasks indented. Also type your first and last name after the word Initiating, the first Task Name.
 - d. Create a new Project file called mywbs that shows the WBS for a generic project. Make the main categories phase 1, phase 2, phase 3, and phase 4. Include at least four tasks and one milestone under each of these main categories. Enter 0 for the duration of the milestones, but do not enter any durations for the other tasks. Be sure to indent tasks and show the outline numbers before printing.

2. Continue performing the steps in this appendix, starting with the section called Developing the Schedule. Print out the following screens or send them to your instructor, as directed:
 - a. The schedule file with durations and dependencies entered, similar to Figure A-27. Type your first and last name after the word Initiating, the first Task Name, before printing or handing in the file.
 - b. The top window showing the Cost table, similar to Figure A-37. Again type your name after the word Initiating, the first Task Name.
 - c. Continue performing the steps, even if you do not have to print out more screens. Write a one-to-two page paper describing the capabilities of Project 2007 and your opinion of this software. What do you like and dislike about it?
3. Use some of the information in the body of this text to practice your Project 2007 skills.
 - a. Review the sample WBS for the Just-In-Time Training project provided in Chapter 4, Figure 4-10. Enter the WBS into Project 2007. Indent tasks and use the automatic numbering feature. Print or hand in your file.
 - b. Use the information in Figure 4-14 for Project X to create a Gantt chart, as shown in Figure 4-18. Also create the network diagram for Project X, as shown in Figure 4-16. Make sure both will print out on one page each, then print or send them to your instructor. Assume the start date was 6/9/09, or June 9, 2009.
 - c. Make up actual information for Project X. Assume some tasks are completed as planned, some take more time, and some take less time. View and then print out or hand in the tracking Gantt chart.
4. If you are doing a team project as part of your class or for a project at work, use Project 2007 to create a detailed file describing the work you plan to do for the project.
 - a. Create a detailed WBS, including several milestones, estimate task durations, link tasks, enter resources and costs, assign resources, and so on. Save your file as a baseline and print it out send it to your instructor, as desired.

- b. Track your progress on your team project by entering actual information. Create a new baseline file if there have been a lot of changes. View earned value information when you are halfway through the project or course. Continue tracking your progress until the project or course is finished. Print or send your Gantt chart, Project Summary report, Earned Value table, and relevant information to your instructor.
- c. Write a two- to three-page report describing your experience. What did you learn about Project 2007 from this exercise? How do you think Project 2007 helps in managing a project? You may also want to interview people who use Project 2007 for their experiences and suggestions.

COMPANION WEB SITE

Visit the companion Web site for this text to access more information related to project management, such as template files, links to sites related to project management, and other information to help you learn more about this important field. Instructors must contact the author at schwalbe@augzburg.edu to gain access to the instructor site.

Anyone can access the student site. Below are the urls for each site:

- Instructor Site: <http://groups.google.com/group/teachintropm>
- Student Site: <http://groups.google.com/group/intropm>

END NOTES

¹TopTenREVIEWS™, “Project Management Software,” (<http://project-management-software-review.toptenreviews.com>) (accessed June 17, 2009).