Microsoft Project 98
Fundamentals

Module 9: Changing the Scheduling Method

Performance Objective

In this module, you gain confidence in your ability to:

- Change task type settings to control how resource changes affect a task

Exercise Files

SCHEP98F

SETW98F

TYPED98F

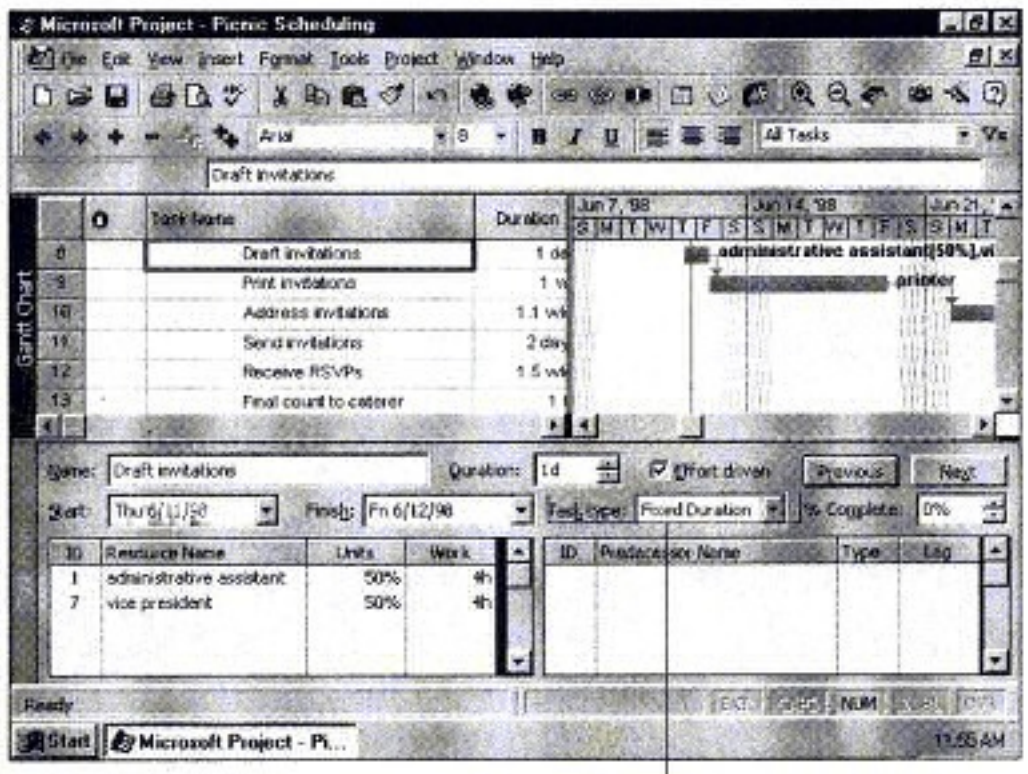
Module Skills and Their Importance

After completing this module, you will be able to:

- Use task type settings
  You can change the task type setting to control how resources affect task duration and work.

What You Will Accomplish

The skills learned in this module prepare you to perform the following activities.



Use task type settings

USE EFFORT-DRIVEN SCHEDULING

Using Task Type Settings

How a task reacts to the addition and removal of resources is defined by the *scheduling method* and the *task type settings*. In Microsoft Project 98, the default scheduling method is *effort-driven scheduling*. Effort-driven scheduling extends or shortens the duration of a task to accommodate changes to resources, but doesn't change the total *work* for the task.

NEW TERMS

scheduling method The method by which a project is scheduled, such as effort-driven scheduling.

task type setting A characterization of a task based on which aspect of the task is fixed and which aspects are variable.

effort-driven scheduling The default method of scheduling in Project, by which the duration of a task shortens or lengthens as resources are added or removed from a task while the amount of effort (work) necessary to complete a task remains unchanged.

work For tasks, the total labor or "resource hours" required (in terms of minutes, hours, days, or weeks) for all resources to complete a task. For assignments, the amount of work to which a resource is assigned for a specific task. For resources, the total amount of work to which a resource is assigned for all tasks. Work is different from task duration.

The total work for a task is determined by the duration estimate for the task and the initial resource assignment. For example, task A has a duration of two days and 100 percent of resource Z assigned to it. The total work for this task is 16 hours. As resources are added or removed after the initial assignment, the total work is redistributed among the resources.

Effort-driven scheduling can be turned off for individual tasks or all new tasks added in a project. When effort-driven scheduling is turned off, total work increases when units of other resources are added to a task.

The task type setting also has an effect on how tasks are scheduled. There are three task types: fixed units, fixed duration, and fixed work. The default task type is fixed units. Using one of these task types, the formula "Duration * Units = Work" can be controlled when resources are added or removed from a task assignment.

How to change the task type setting

Switch to the Task Entry view.

Select the appropriate task in the top pane of the view.

Click the Task Type down arrow in the bottom pane.

Click the appropriate task type, and click OK.

In the following exercise, you open a file and change the view.

■ Open a file and change the view

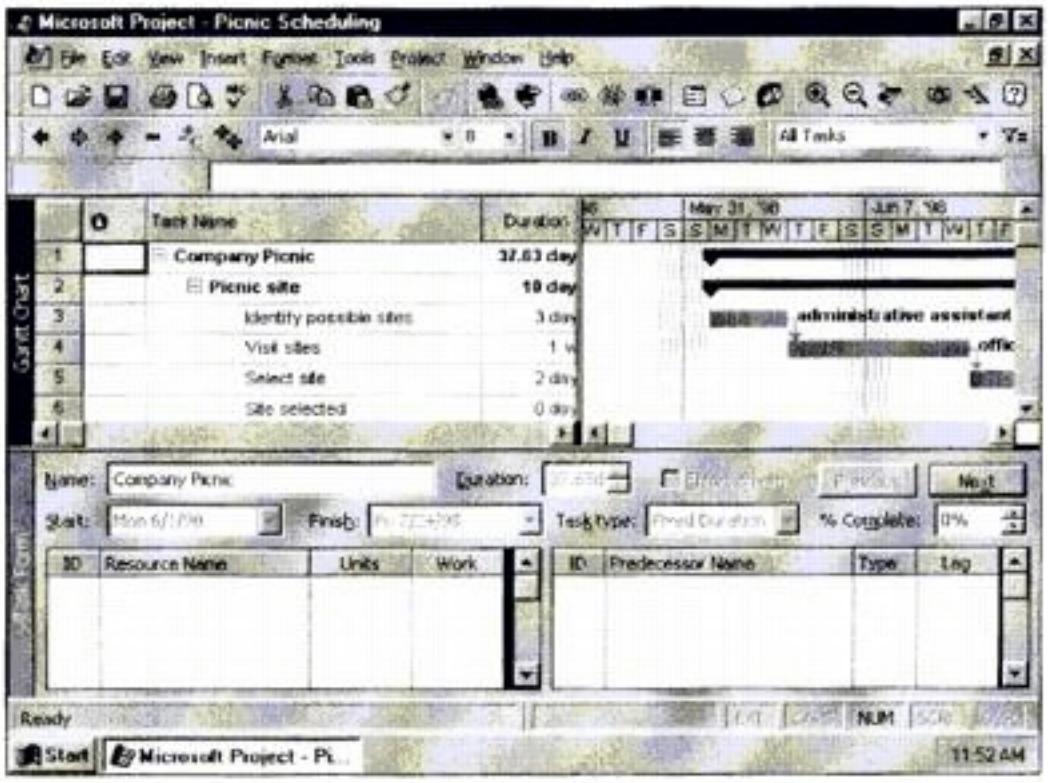
1. Open **SCHEP98F**, and save the file as **Picnic Scheduling** without a baseline in the Class folder.

2. Choose **View: View Bar**.
   The View bar is hidden.

3. Choose **View: More Views.**
   The More Views dialog box appears.

4. Click **Task Entry** in the Views box.
   You can also double-click the split bar to display the Task Form in the bottom pane.

5. Click **Apply**.
   You can also double-click the view name. The Task Entry view is displayed. The Gantt Chart view is displayed in the top pane, and the Task Form is displayed in the bottom pane. Your screen should look like this.



Modifying a Fixed Units Task

The fixed units task type is the default task type in Project. When resources are added or removed from a fixed units task, the duration of the task is generally affected. However, designating a task as non-effort-driven, or adding or removing resources, determines the true effect on the task's duration.

The following tables describe how a fixed units task accommodates resource and scheduling method changes after an initial resource assignment. The tables assume the example, task X, has a duration estimate of two weeks, an initial resource assignment of one unit of resource A, and total work of 80 hours.

Fixed Units – Effort-Driven			
Fixed Units - Effort-Driven	**Duration**	**Units**	**Work**
Add one unit of same resource (A)	1 week	200% Resource A	40 hours each 80 hours total
Add one unit of different resource (B)	1 week	100% Resource A 100% Resource B	40 hours A 40 hours B 80 hours total

Fixed Units – Not Effort-Driven			
Fixed Units - Not Effort-Driven	**Duration**	**Units**	**Work**
Add one unit of same resource (A)	1 week	200% Resource A	40 hours each 80 hours total
Add one unit of different resource (B)	2 weeks	100% Resource A 100% Resource B	80 hours A 80 hours B 160 hours total

In Project, when using the fixed units task type, as the resource assignment is changed, the duration is adjusted. If the duration is changed, the total work is adjusted. The exception is when the task is not effort-driven and units of a different resource are assigned. In this situation, the total work is increased.

You use the fixed units task type when the unit value of a resource assignment must remain as set by you. For example, two painters are assigned for four days to paint the walls of a building. The duration is four days, the units are 200 percent of the painter, and the total work is 64 hours. If two more painters are assigned to the task, the duration is reduced to two days. The total work, 64 hours, is now split between four painters instead of two, thus reducing the duration.

In the following exercise, you work with a fixed units task.

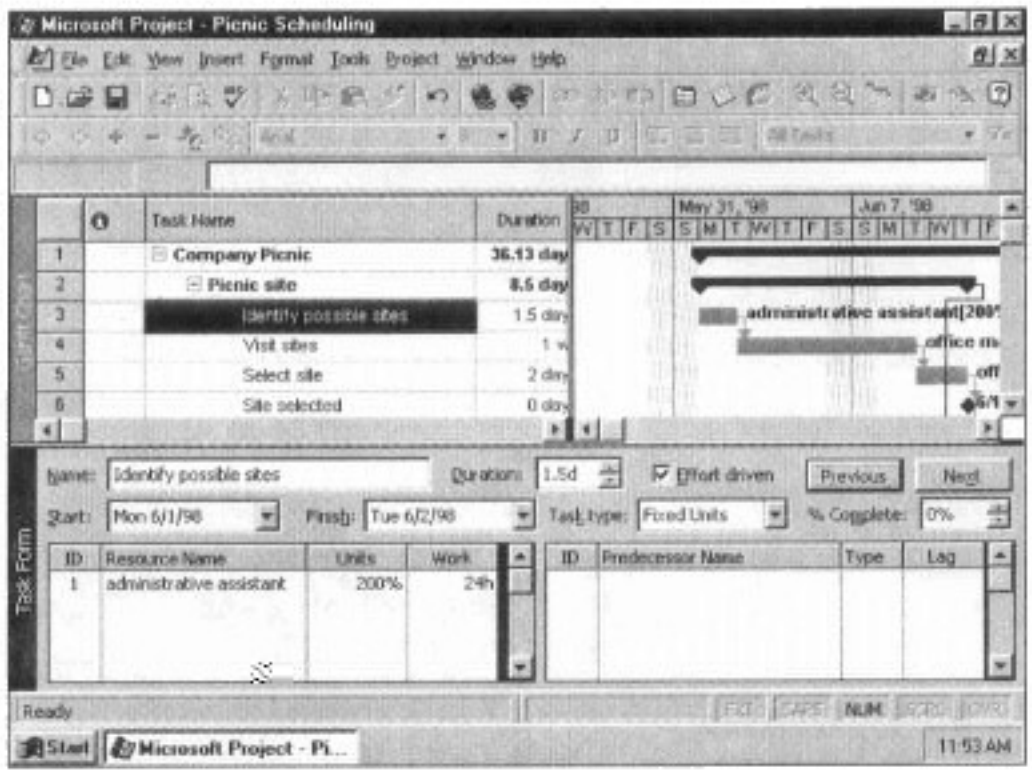
■ Work with a fixed units task

1. Click task 3, **Identify possible sites**, in the top pane.
   The task-related information for task 3, Identify possible sites, is displayed in the bottom pane.

2. Click in the **Units** column for the administrative assistant resource in the bottom pane.
   Spin controls are displayed.

3. Click the up arrow twice.
   The Units field for the administrative assistant resource displays 200%.

4. Click **OK**.
   The units increase to 200 percent, the duration decreases to 1.5 days, and the work remains at 24 hours combined. Your screen should look like this.



5. Save the file without a baseline.

Modifying a Fixed Duration Task

If a task has the fixed duration task type, the duration of the task remains the same when resources are added or removed. Depending on whether the task is effort-driven or not, the resource units or the total hours are affected when resource changes are made to a fixed duration task.

The following tables describe how a fixed duration task accommodates resource and scheduling method changes after an initial resource assignment. The tables assume the example, task X, has a duration estimate of two weeks, an initial resource assignment of one unit of resource A, and total work of 80 hours.

Fixed Duration – Effort-Driven			
Fixed Duration - Effort-Driven	**Duration**	**Units**	**Work**
Add one unit of same resource (A)	2 weeks	200% Resource A	80 hours each 160 hours total
Add one unit of different resource (B)	2 weeks	50% Resource A 50% Resource B	40 hours A 40 hours B 80 hours total

Fixed Duration – Not Effort-Driven			
Fixed Duration - Not Effort-Driven	**Duration**	**Units**	**Work**
Add one unit of same resource (A)	2 weeks	200% Resource A	80 hours each 160 hours total
Add one unit of different resource (B)	2 weeks	100% Resource A 100% Resource B	80 hours A 80 hours B 160 hours total

When you use the fixed duration task type, as the resource assignment is changed, the units or work is adjusted. If you change the work, the units are adjusted.

You use the fixed duration task type when the duration of task must remain as set by you. For example, installing the carpet trim in the conference room normally takes one full day for two installers for a total of 16 hours work. Due to a constraint on the predecessor task, the carpet trim must be installed in two hours. By fixing the duration at two hours, you can add various resource units until 16 hours of work is assigned, or enter 16 hours of work and let Project calculate the units of the initial resource assignment necessary to accomplish the task.

APPLY THE FIXED DURATION TASK TYPE

In the following exercises, you change the task type setting and work with a fixed duration task.

■ Change the task type setting

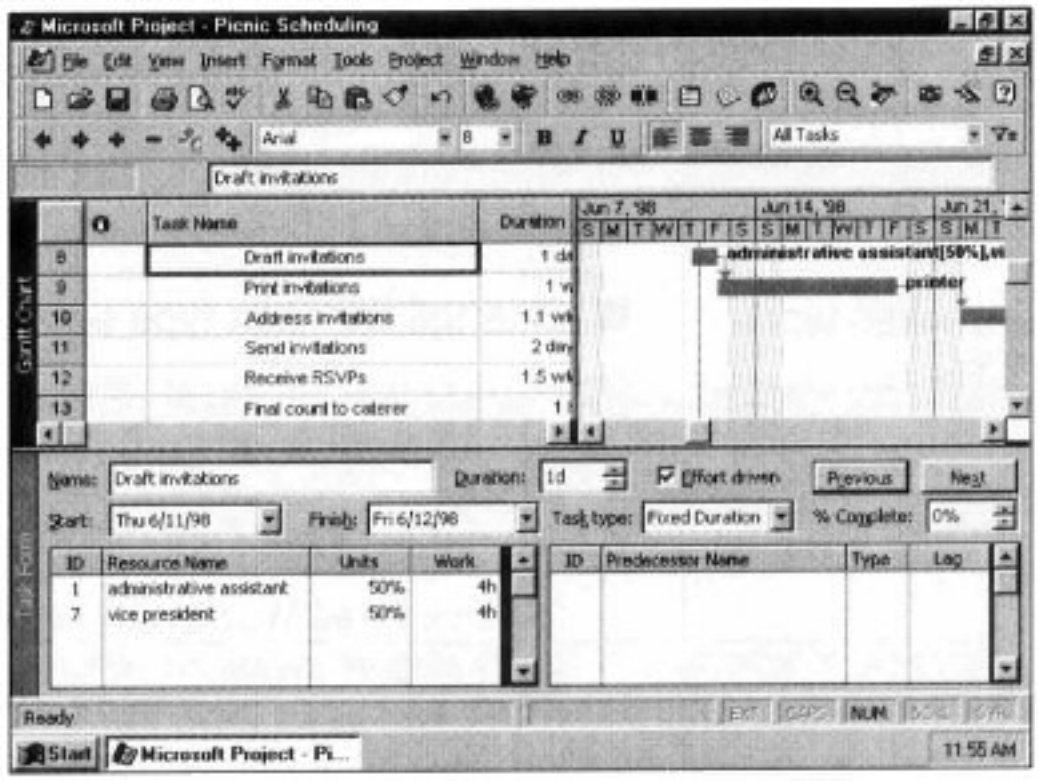
1. Click in the top pane, press [F5], type **8** and press [ENTER].
   You can also click OK. Task 8, Draft invitations, is selected in the top pane.
2. Click the **Task Type** down arrow in the bottom pane.
   The three task type settings are listed.
3. Click **Fixed Duration**, and click **OK**.
   No change is visible until a change is made in the resource units.

■ Work with a fixed duration task

1. Click task 8, **Draft invitations**, in the top pane.
2. Locate the **Assign Resources** button on the Standard toolbar.
   It looks like this.

3. Click the **Assign Resources** button.
   The Assign Resources dialog box appears.
4. Click **vice president**, and click **Assign**.
   A different resource, the administrative assistant, is also assigned to the task.

5. Click **Close**.
   The task duration remains at one day. Each resource unit has been changed to 50 percent with four hours of work assigned to each resource for a total of eight hours. Your screen should look like this.



6. Save the file without a baseline.

Modifying a Fixed Work Task

If a task has the fixed work task type, the total work for the task remains the same when resources are added or removed. The duration and resource units are affected on a fixed work task. A fixed work task must be effort-driven.

The following table describes how a fixed work task accommodates resource and scheduling method changes after an initial resource assignment. The table assumes the example, task X, has a duration estimate of two weeks, an initial resource assignment of one unit of resource A, and total work of 80 hours.

Fixed Work – Effort-Driven			
Fixed Work - Effort-Driven	**Duration**	**Units**	**Work**
Add one unit of same resource (A)	1 week	200% Resource A	40 hours each 80 hours total
Add one unit of different resource (B)	1 week	100% Resource A 100% Resource B	40 hours A 40 hours B 80 hours total

When you use the fixed work task type, as the resource assignment is changed, the duration is adjusted. If the duration is changed, the resource units are adjusted.

You use the fixed work task type when the total work value of an initial resource assignment must remain as set by you. For example, if it takes six hours to drive from point A to point B, it does not matter how many vehicles or drivers are assigned to the task; it will still take six hours to get there.

In the following exercises, you change the task type setting and work with a fixed work task.

APPLY THE FIXED WORK TASK TYPE

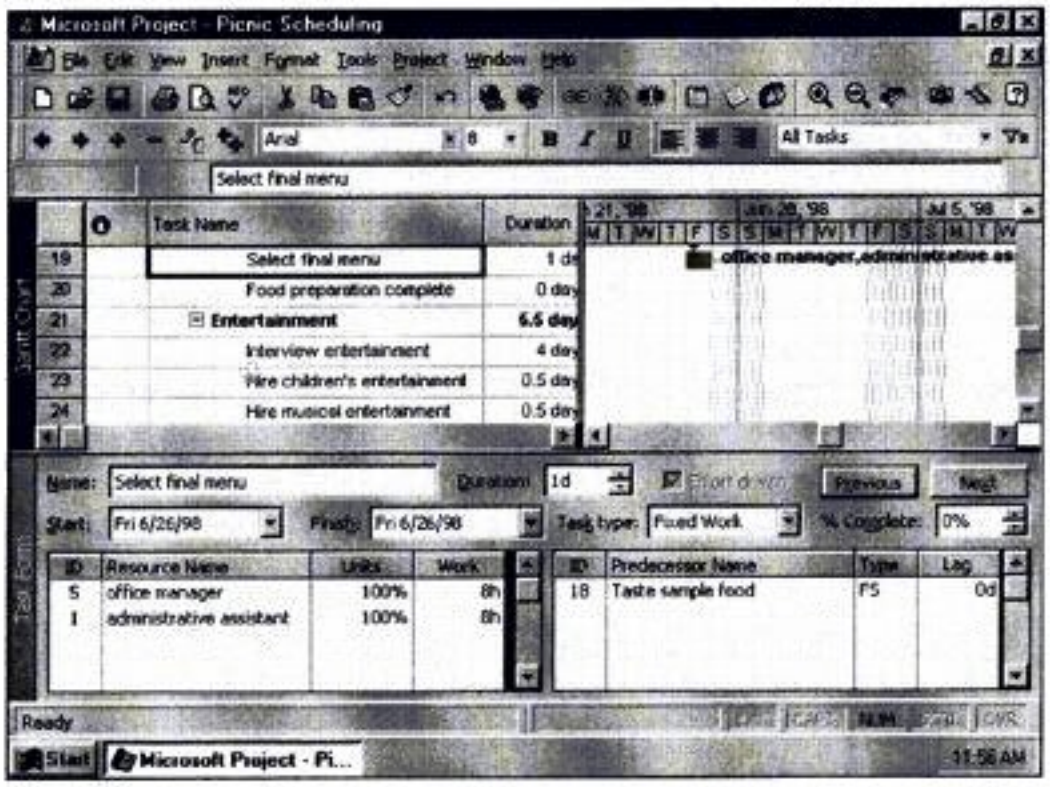
■ Change the task type setting

1. Click in the top pane, press [F5], type **19** and click [ENTER].
   Task 19, Select final menu, is selected in the top pane.
2. Click the **Task Type** down arrow in the bottom pane.
3. Click **Fixed Work**, and click **OK**.
   The Effort Driven check box is dimmed. A fixed work task must be effort-driven.

■ Work with a fixed work task

1. Click task 19, **Select final menu**, in the top pane.
2. Click the **Assign Resources** button.
   The Assign Resources dialog box appears.
3. Verify that the **administrative assistant** resource is selected, and click **Assign**.
   One unit of the administrative assistant resource is assigned to the task.

4. Click **Close.**
   The task duration decreases to one day. The resource units are at 100 percent each with eight hours of work assigned to each resource for a total of 16 hours. Your screen should look like this.



5. Save the file without a baseline.

6. Double-click the split bar.
   You can also choose Window: Remove Split. The Task Form is hidden. The Gantt Chart fills the screen.

7. Choose **View: View Bar.**
   The View bar is displayed.

8. Close the file.

Module Recap 9

You're ready to fine-tune the scheduling of the tasks and resources. You need to add several resource assignments to the schedule, while considering how the addition of these resources will impact duration and work on the tasks. Before adding the resources, you change the task types to control the scheduling formula.

You can refer to Appendix Section A: Answers to confirm the actions to complete each step in the Module Recap.

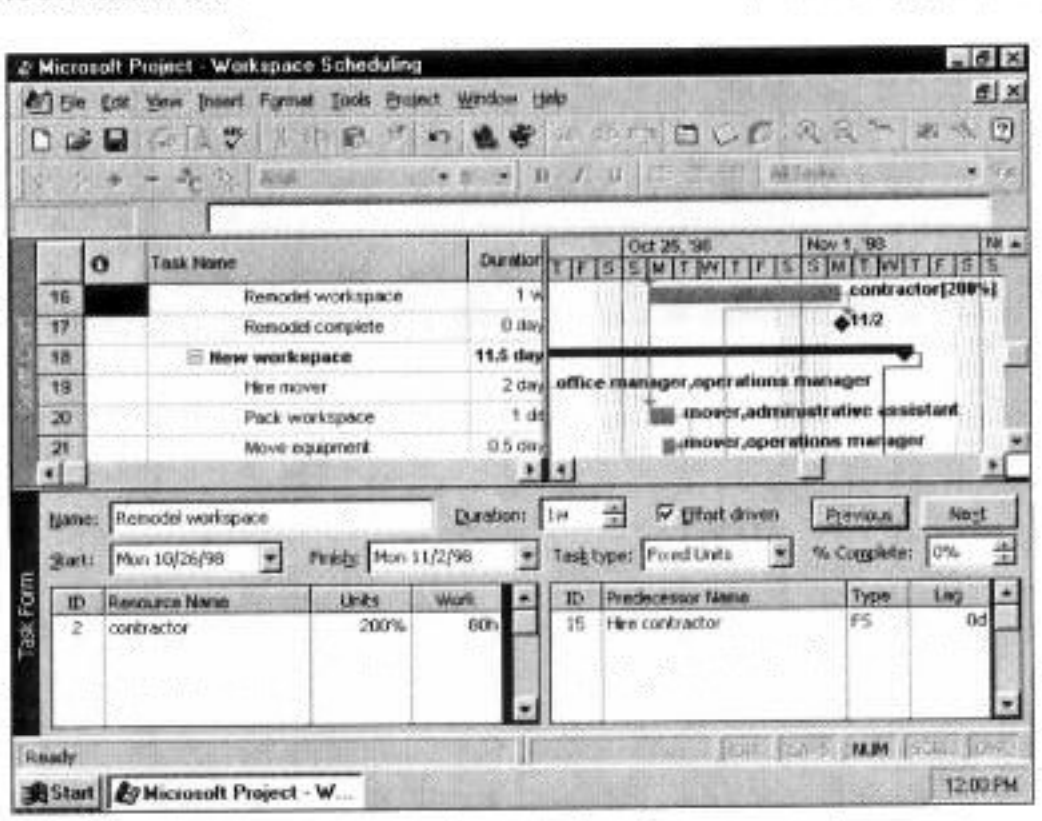
■ Use task type settings

1. Open **SETW98F**, and save the file as **Workspace Scheduling** without a baseline in the Class folder.

2. Hide the **View bar**. *For an example, refer to page 144.*

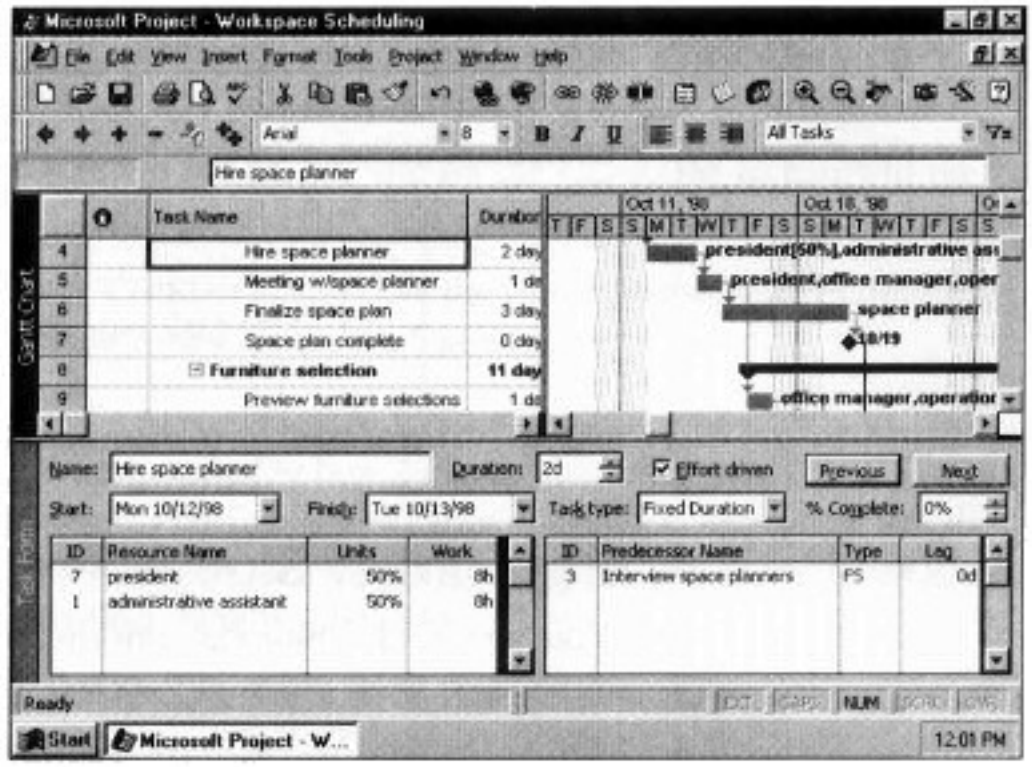
3. Switch to the **Task Entry** view. *For an example, refer to page 144.*

4. Add a unit of the **contractor** resource to task 16, Remodel workspace. *For an example, refer to page 146. Your screen should look like this.*



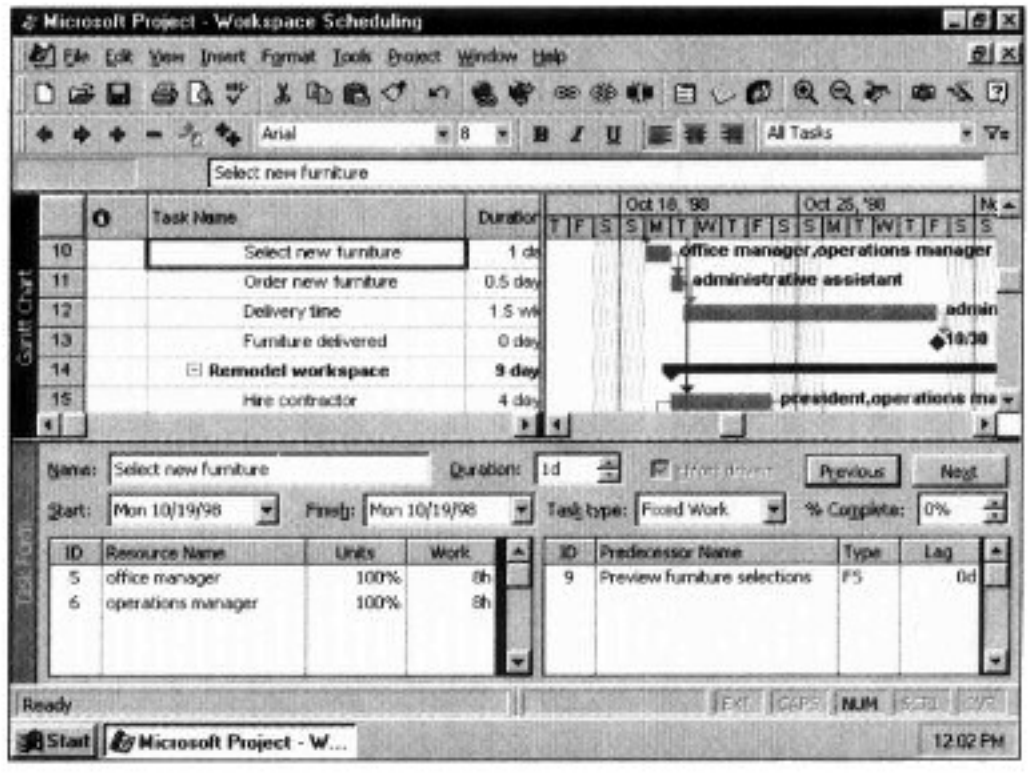
5. Change the task type to **Fixed Duration** for task 4, Hire space planner. *For How To steps, refer to page 144. For an example, refer to page 148.*

6. Add a unit of the **administrative assistant** resource to task 4, Hire space planner. *For an example, refer to page 146. Your screen should look like this.*



7. Change the task type to **Fixed Work** for task 10, Select new furniture. *For an example, refer to page 150.*

8. Add a unit of the **operations manager** resource to task 10, Select new furniture. *For an example, refer to page 148. Your screen should look like this.*



9. Save the file without a baseline.

10. Hide the **Task Form**, display the **View bar**, and close the file.

Review Checklist

You must be able to complete the following task on your own. As you review this topic, place a check mark next to it if you can do it. If you do not feel confident about an item on the following list, let your instructor know. If you can do the item on the list and have extra time, complete the Scenario/Challenge on the next page.

- ❑ Use task type settings

For Further Study

You can find additional information about the topic covered in this module on these pages in the *User's Guide for Microsoft Project 98* or in the online Help system.

For Further Study		
Topic	**Reference**	**Help Index Topic**
Using task type settings	Pages 68–69, 108	Task types

Scenario/Challenge 9

The project manager for the demolition project needs you to make some changes to the schedule. To make the resource changes affect the schedule as desired, you make changes to the scheduling method and task type settings.

You can refer to the SC_09 file on the CD-ROM to confirm the actions to complete each step in the Scenario/Challenge.

1. Open **TYPED98F**, and save the file as **Demolition Scheduling** without a baseline in the Class folder.

2. Try this new challenge: Change the task type using the Task Information dialog box. First, double-click task 15, **Disconnect utilities**. The Task Information dialog box appears. Click the **Advanced** tab. Click the **Task Type** down arrow. Click **Fixed Duration**. Finally, click **OK**.

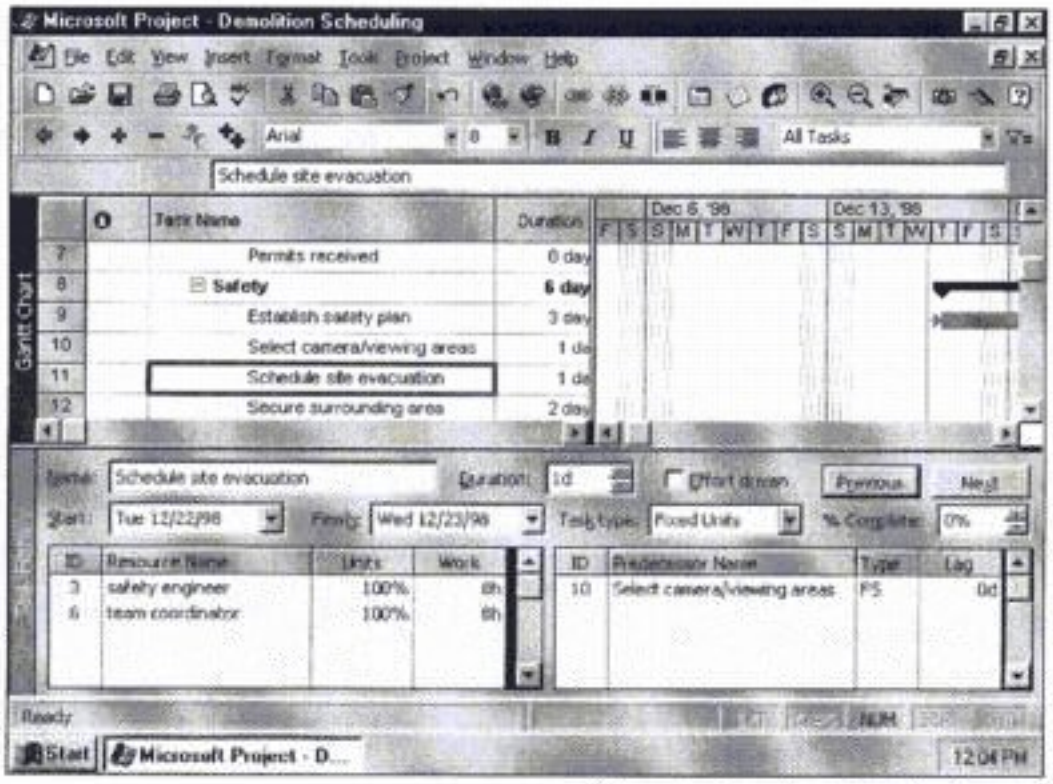
3. Hide the **View bar**, and switch to the **Task Entry** view. *For an example, refer to page 144.*

4. Add a unit of the **utilities department** resource to task 15, Disconnect utilities. *For an example, refer to page 146.*

TURN OFF EFFORT-DRIVEN SCHEDULING

5. Try this new challenge: Turn off effort-driven scheduling for a task. First, click task 11, **Schedule site evacuation**. Clear the **Effort Driven** check box in the bottom pane. Finally, click **OK**.

6. Add a unit of the **team coordinator** resource to task 11, Schedule site evacuation. *For an example, refer to page 146. Your screen should look like this.*



7. Change the task type to **Fixed Work** for task 25, Layout time fuse array. *For an example, refer to page 150.*

8. Add a unit of the **explosives team** resource to task 25, Layout time fuse array. *For an example, refer to page 150.*

9. Save the file without a baseline.

10. Hide the **Task Form**, and display the **View bar**.

11. Close the file.