

Microsoft Project 2016

Chapter 1

PLAN A PROJECT

OBJECTIVES

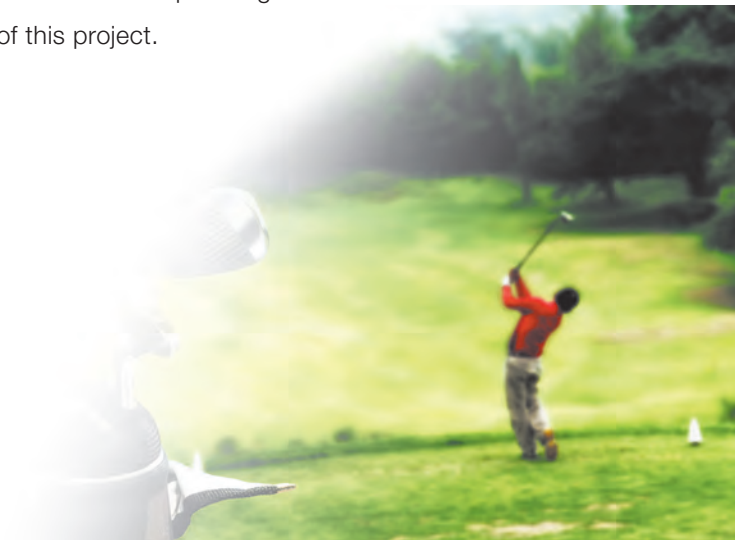
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Prepare Case



Painted Paradise Golf Resort— Annual Charity Golf Tournament

The Painted Paradise Golf Resort will be holding its annual charity golf tournament to raise money for the purchase of textbooks to be donated to selected elementary schools in Santa Fe, New Mexico. The vice president (VP) of special projects, Julie Rholfing, has assigned Patti Rochelle, the tournament planning manager, to be the project manager of this event. Julie has asked Patti to use Microsoft Project 2016 to begin planning this year's tournament. Before Patti can begin entering in the tasks that need to be completed for the tournament, she must first understand the Project 2016 window, Project 2016 views, and the Project 2016 calendar. You will help Patti get started with the setup of this project.



Nmedia/fotolia

Student data files needed for this workshop:



No data file needed

You will save your file as:



pm01ch01CharityGolfTournament_LastFirst.mpp

Preparing a Project Plan

It is common today to work with teams or with groups of people to reach a desired outcome. Outcomes can be reached by brainstorming, communicating, planning, and then completing the plan as defined. Whether you work on a team or work alone, taking the time to plan before acting may help improve your chances of success. The process of planning and following through with a plan is project management.

In this chapter, you will be introduced to project management terminology and processes. Then you will learn how to get started using Project 2016, a project planning application often used to help create detailed project plans.

Understand Project Management and Microsoft Project Terminology

Project management is a process of initiating, planning, executing, monitoring, and closing a project's tasks and resources in order to accomplish a project's goal. A **project goal** is the desired result of a project upon completion. A project's goal is met when project tasks are completed on time, on budget, and within the scope of a given project. All projects, large or small, should follow the project management process groups, as shown in Table 1, to reach project success.

Process Group	Responsibility
Initiating	Set a project goal; identify a project schedule; define a project budget
Planning	Enter project tasks; determine task relationships; assign project resources
Executing	Produce results; report results
Monitoring and Control	Update tasks as in progress or completed; manage resources
Closing	Analyze performance; prepare final reports

Table 1 Project management process groups

REAL WORLD ADVICE	Resources for Project Managers
<p>If you are new to project management, you are not alone! There are many resources available for project managers who seek assistance with project management information and practices. One resource is <i>A Guide to the Project Management Body of Knowledge (PMBOK® Guide)</i>. This guide defines project management terminology and presents industry standard guidelines for managing projects.</p> <p>Another resource is the Project Management Institute (PMI). By joining PMI, project managers can get access to PMI publications, stay updated on global standards, have networking opportunities with other project managers, and have access to project management tools and templates to help manage projects. PMI also provides training and access to the Project Management Professional (PMP) certification.</p> <p>Office.microsoft.com offers videos on Project 2016. This is a helpful resource for project managers who may be new to using the software.</p>	

A **project manager** is the person responsible for overseeing all the details of the project plan. The project manager works to create a plan that will lead to project success. A project manager also motivates project team members to achieve the project goals. Project managers may choose to use project planning software such as Project 2016 to help them plan and achieve project success. Project planning software keeps track of

tasks, the duration to complete tasks, scheduled dates, project resources, and project costs organized in one location for a more efficient way of managing a project. It is a tool that allows project managers to track, analyze, and summarize project information.

In order to use project planning software, it is important to understand terminology associated with the software. A **task** is an activity that is completed to reach a project goal. For example, when planning for a charity golf tournament, a task could be “set tournament date and time” or “prepare preliminary budget.”

Task duration is the prediction of time it will take to complete a task. Task durations in Project can be entered in minutes, hours, days, weeks, months, and years. For example, it may be determined it takes two days to “set tournament date and time” but two weeks to “prepare preliminary budget.”

A **predecessor task** is a task that must be completed before the next task can start. A task that has a predecessor is called a **successor task**. Project managers often use the term task dependency when referring to how the predecessor or successor tasks are connected. A **task dependency** is a relationship between two tasks that defines which task(s) have to finish before the next task(s) can start. A task dependency is often called a task link.

Since not all tasks are the same in a project, scheduling them the same way may not be an option. Therefore, some tasks may have constraints applied. A **constraint** is a limitation set on a task. For example, a task of “create tournament website” may have a constraint of “finish no later than” a certain date to ensure the website is up and running in time to gather enough registrations for the event. Constraints on tasks affect how the task is scheduled. Setting constraints on tasks will determine how Project 2016 will schedule a task. Besides setting specific date constraints on a task, the following task constraints can be set on an individual task:

- As late as possible
- As soon as possible
- Finish no earlier than
- Finish no later than
- Must finish on
- Must start on
- Start no earlier than
- Start no later than

A **resource** is work, a material, or a cost associated with a project task. **Work resources** are people and equipment. **Material resources** are resources consumed during the project. **Cost resources** are independent costs associated with a task. For example, a task of “provide transportation from the airport” may have a cost of “\$2,000 limousine service.” Project managers assign resources to project tasks to help determine a project’s schedule and a project’s cost.

The **scope** of a project is what must be completed to deliver a specific product or service. The project scope includes the meeting of project goals, tasks, and deadlines set. Project managers use planning software such as Project 2016 to prevent deviating from the scope of a project.

A **milestone** is a task that is used to communicate project progress or mark a significant point in a project such as the end of a project phase. Milestones are entered into the Project 2016 software as a task with zero duration. For example, a milestone for the charity golf tournament could be “tournament website goes live.” By default, Project 2016 displays a milestone as a diamond in the Gantt chart. A **Gantt chart** is a graphical representation of tasks where tasks are shown against a timeline displayed as horizontal bars in which the length of the bar is determined by the activities durations and start/finish dates.

Starting a Project

You have been asked to work on the planning team for the Painted Paradise Golf Resort Charity Golf Tournament. Your role on the team will be to set up a project plan in Project 2016. To get started, you will open and save a project.

In this exercise, you will start, save, close, and open a project.



To Begin, Save, Close, and Open a Project

- a. On the taskbar, click **Ask me anything** or **Search the web and Windows**. Type **proj**.
- b. Click **Project 2016** in the search results. The Project Start screen is displayed.

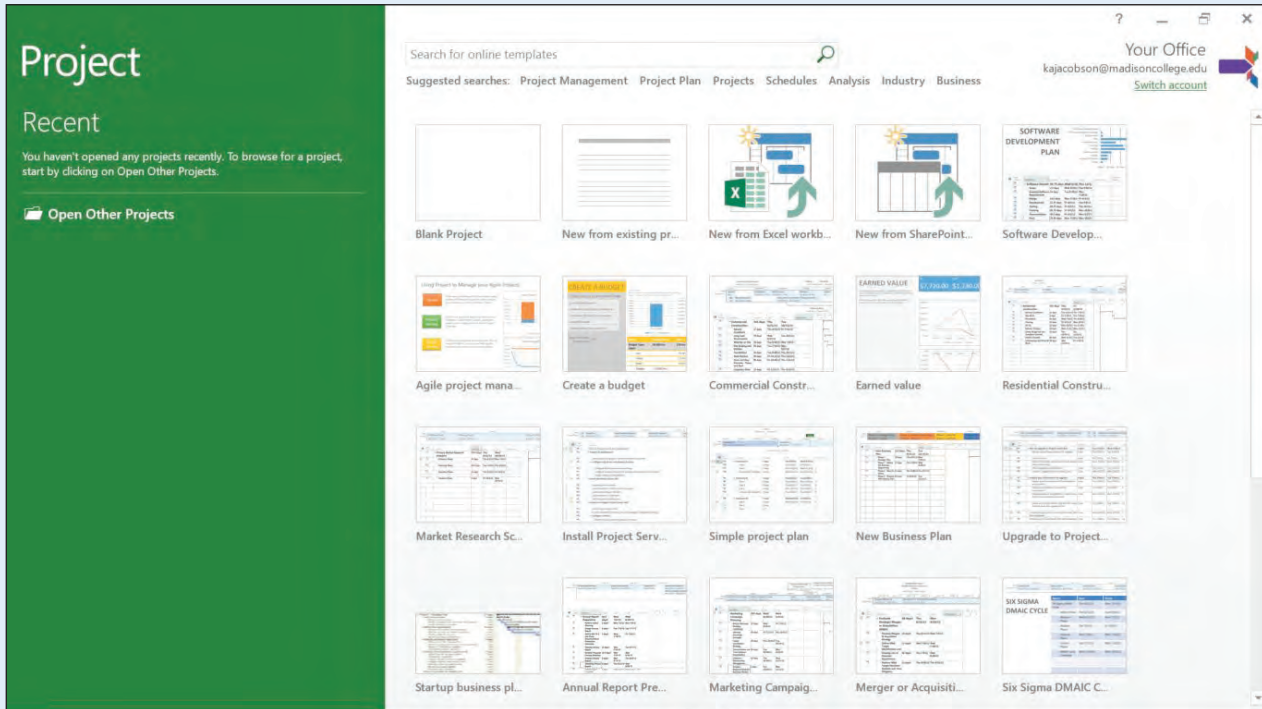


Figure 1 Creating a new project

- c. Click **Blank Project** to open a new blank project.
- d. Click the **File** tab, and then click **Save As**.
- e. Click **Browse**, and then navigate to the location where you are saving your files.
- f. Click in the **File name** box, and then type **pm01ch01CharityGolfTournament_LastFirst**, using your last name and first name. Click **Save**.
- g. Click the **File** tab, and then click **Close**. The project file will close, but the Project application will remain open.

Troubleshooting

If Project 2016 closed completely, perform steps a–b again. Click the File tab, and then click Open. Browse to where you store your files, and then click pm01ch01CharityGolfTournament_LastFirst.mpp. Click Open. You could also perform step a–b again, and then click the file name in the left pane to reopen the file.

- h. In the Navigation Pane, click **Open**, and then browse, if necessary, to locate **pm01ch01CharityGolfTournament_LastFirst.mpp**.
- i. Click **pm01ch01CharityGolfTournament_LastFirst.mpp**, and then click **Open** to reopen your project file.

Explore the Project 2016 Window

When opening a new Project 2016 file, the default view is the Gantt Chart view, as shown in Figure 2. There may be slight differences with the view of your Project 2016 window. You will learn how to adjust the Project 2016 window in this chapter.

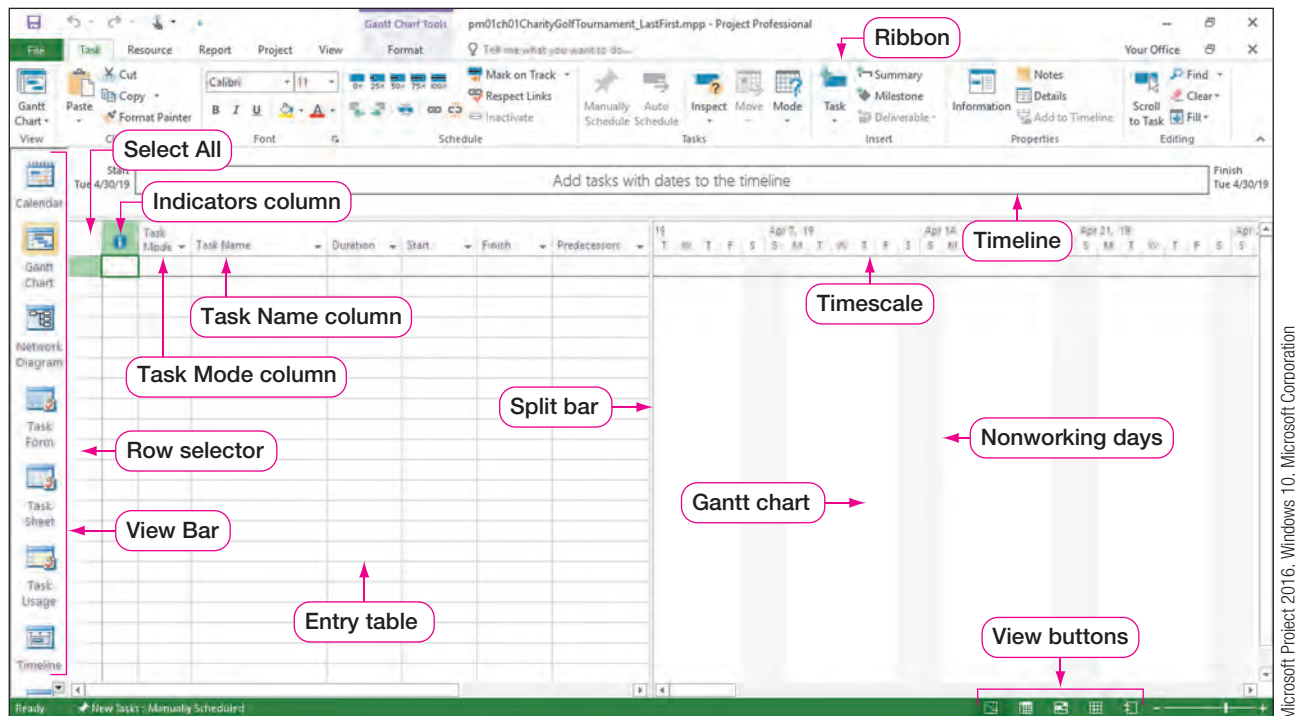


Figure 2 Project 2016 window

Gantt Chart view lists task details in the Entry table on the left side of the window and displays each task graphically in the Gantt chart on the right side of the window. In the Gantt chart, a project's tasks are shown against a timeline. The activities are displayed as horizontal bars in which the length of the bar is determined by the duration of the activities and start/finish dates. The **Entry table** is used to enter task information and is located to the left of the Gantt chart. The Entry table contains columns and rows similar to Microsoft Excel 2016. The Entry table is used to record project tasks, durations, predecessors, and resources. Each task becomes a new row in the Entry table. A vertical **split bar** separates the Entry table and the Gantt chart. If desired, the split bar can be dragged to resize the panes.

A **row selector** is the box containing the row number of a task in the Entry table. The **Select All** button is a button that selects all tasks and task information in the Entry table.

The **Timeline** is a visual representation of the project from start to finish. The Timeline is displayed above the Entry table and Gantt chart and below the ribbon. You can choose what to display on the Timeline. If the Timeline is added, it will be

visible in the other Project 2016 views as well. The **timescale** is located above the Gantt chart. The timescale displays the unit of measure that determines the length of the Gantt bars in the Gantt chart.

The light gray vertical bars in the Gantt chart represent nonworking days. A **nonworking day** is a day during which Project 2016 will not schedule work to occur. Therefore, if a task starts at 8:00 AM on a Friday and has a three-day duration, Project 2016 would schedule the task for Friday 8:00 AM–5:00 PM, Monday 8:00 AM–5:00 PM, and Tuesday 8:00 AM–5:00 PM.

The **Indicators column** is a column in the Entry table that will display an icon that provides further information about a task. For example, if the constraint of a specific date is set to a task, a calendar icon would appear in the Indicators column.

The **Task Mode column** indicates the mode in which Project 2016 will schedule tasks, either manually or automatically. A task's mode can be adjusted by using the Task Mode arrow within the Task Mode column.

The **Task Name column** is a location in the Entry table where the name of each task is entered. One task is entered per row. Task names should be descriptive but not too wordy.

The **View Bar** is a vertical bar on the left-hand side of the Project 2016 window that contains buttons for quick access to different Project 2016 views. The View Bar can be turned on and off based on a project planner's preference. Use the View Bar's navigation buttons to easily navigate within the different Project 2016 views.

Project 2016 uses the Office 2016 design and layout of the ribbon as shown in Figure 2. The ribbon is a row of tabs with buttons that appears at the top of the Project 2016 window. The ribbon may be open as shown in Figure 2 or may also be collapsed to save screen space.

The Quick Access Toolbar appears in the top-left corner of the Project 2016 window as shown in Figure 3. The **Quick Access Toolbar** is a series of small icons for commonly used commands. The default icons on the Quick Access Toolbar are the Save, Undo, and Redo buttons. If using a touch-enabled laptop, you may also see the Touch/Mouse Mode button as a default button on the Quick Access Toolbar. However, you can modify the Quick Access Toolbar to fit your project needs by adding or removing buttons. For example, reports from Project 2016 often need to be printed, and time could be saved by adding the Print Preview button to the Quick Access Toolbar.

Modifying the Quick Access Toolbar and Collapsing the Ribbon

Since you are sharing the project with other team members, you want to be sure you always have proper spelling in your project plan. Project 2016 does not automatically check for proper spelling; therefore, you decide to add the Spelling button to your project's Quick Access Toolbar.

In this exercise, you will modify the Quick Access Toolbar and collapse the ribbon.

PM01.01

To Modify the Quick Access Toolbar and Collapse the Ribbon

SIDE NOTE

View Bar

If the View Bar is not visible on the left-hand side of the Project 2016 window, right-click the vertical text GANTT CHART on the left-hand side of the window and click View Bar.

- a. Click the **Quick Access Toolbar** arrow.

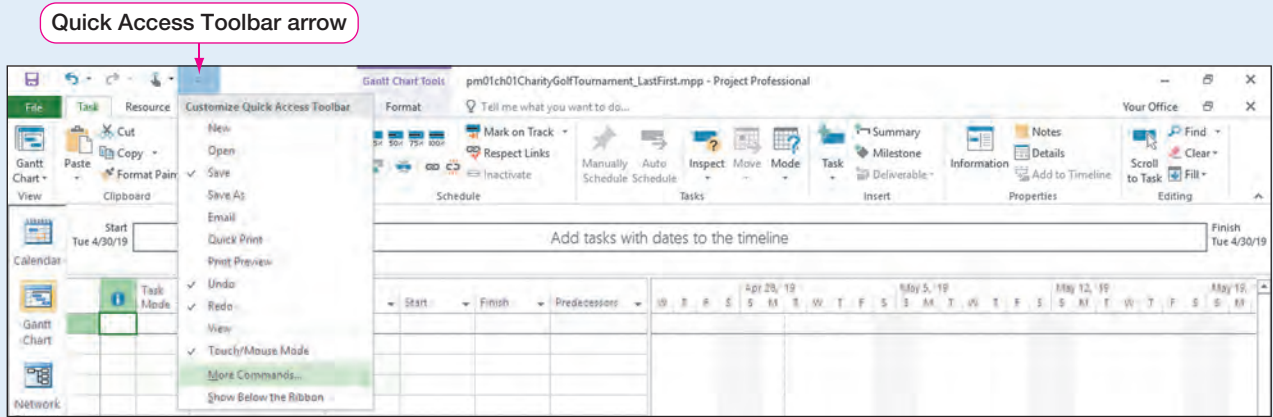


Figure 3 Quick Access Toolbar shortcut menu

Microsoft Project 2016, Windows 10, Microsoft Corporation

- b. Click **More Commands**.
- c. Click the **Choose commands from** arrow.

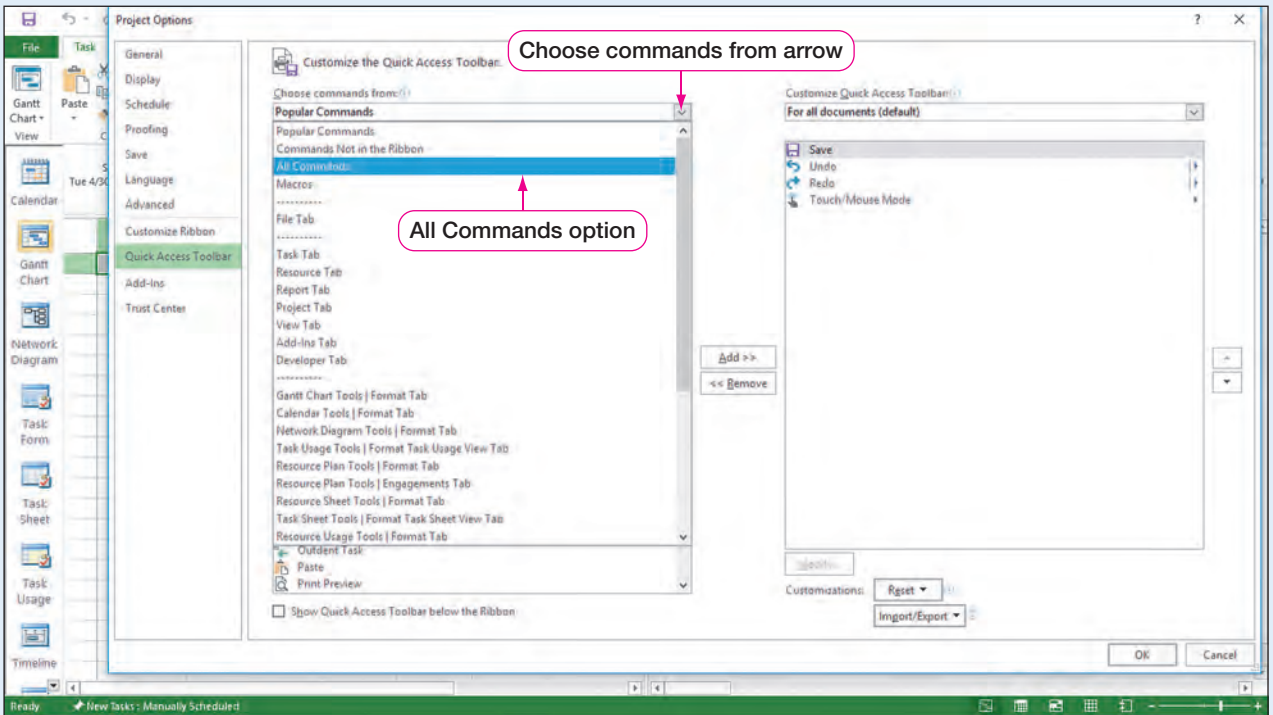


Figure 4 Project Options dialog box to customize the Quick Access Toolbar

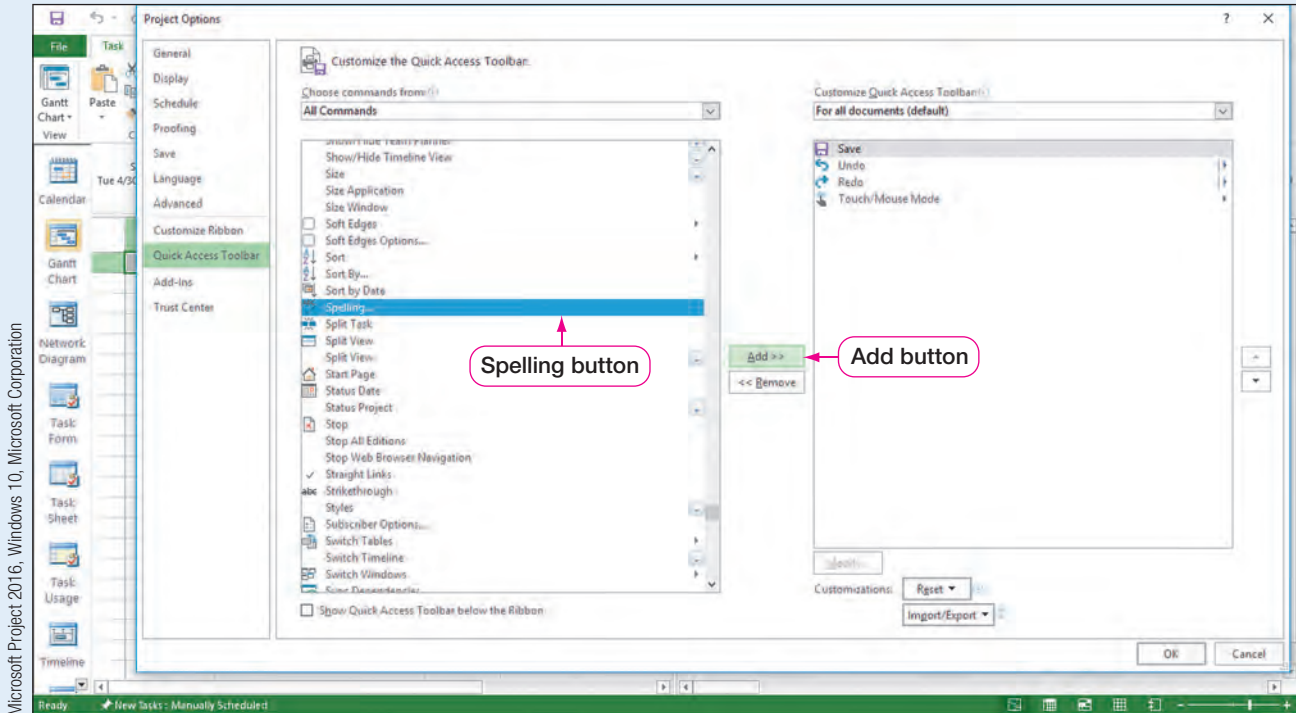
Microsoft Project 2016, Windows 10, Microsoft Corporation

SIDE NOTE

Modifying the Quick Access Toolbar


You can also add buttons to the Quick Access Toolbar by right-clicking a button on the ribbon and clicking **Add to Quick Access Toolbar**.

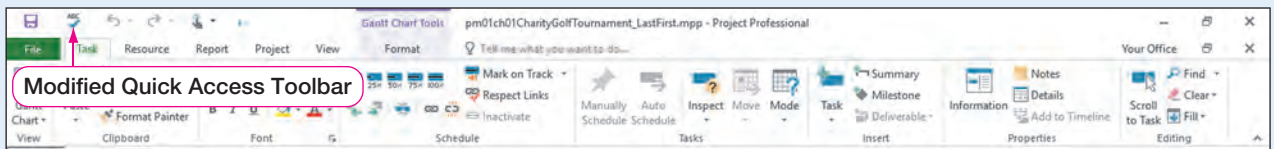
- d. Click **All Commands**, and then scroll through the list of commands. Click **Spelling**.



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 5 Project Options dialog box

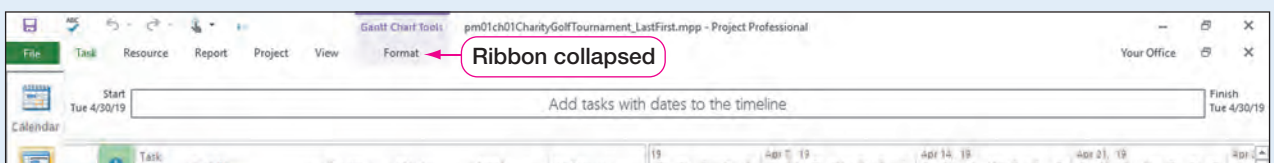
- e. Click **Add**, and then click **OK**. The Spelling button  will be added to the Quick Access Toolbar.



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 6 Modified Quick Access Toolbar

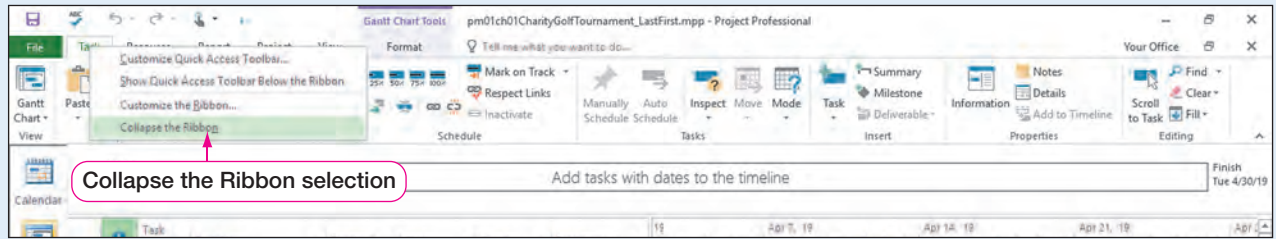
- f. Double-click the **Task** tab. Notice the ribbon is now collapsed.



Microsoft Project 2016, Windows 10, Microsoft Corporation


Figure 7 Ribbon collapsed

- g. Double-click the **Task** tab again to show the ribbon.
- h. Right-click the **Task** tab.



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 8 Collapsing the ribbon

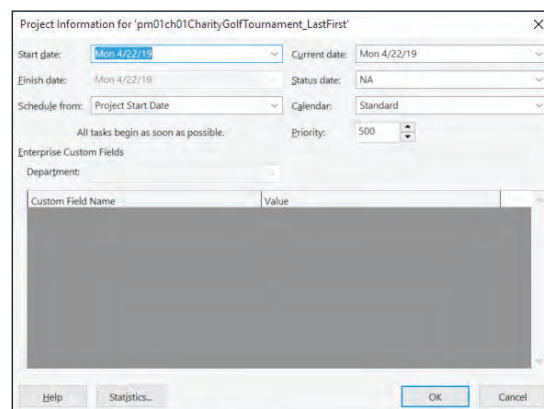
- i. Click **Collapse the Ribbon**. The ribbon is now collapsed.
- j. Right-click the **Task** tab again. Click **Collapse the Ribbon** to show the ribbon.
- k. On the Quick Access Toolbar, click **Save** .

Prepare a Project Schedule

Project 2016 has a complex scheduling engine, so to understand how it will calculate a project's schedule, it is important to review the Project Information dialog box. The Project Information button is found in the Properties group on the Project tab. Click the Project Information button to open the Project Information dialog box.

The **Project Information dialog box** is used to update various aspects of a project such as the project's start date or finish date, current date, status date, project base calendar, etc. Before entering specific task information for a project, the project's information should be identified. First, one must select whether the project will be scheduled from Start date or from Finish date. Project **Start date** is the date Project 2016 uses to schedule tasks that will calculate the project's Finish date. Scheduling a project by Start date is the most commonly used scheduling method. Project **Finish date** is the date Project 2016 uses to schedule tasks that will calculate the project's Start date. Scheduling projects by Finish date, while less common, helps determine the latest date a project can start and still finish by that finish date. A project can only be scheduled by Start date or Finish date, not by both. Start date is the default in the software.

If a project is set to calculate by Start date, as shown in Figure 9, all tasks will be scheduled to begin as soon as possible. If you schedule by Start date, Project 2016 will



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 9 Project Information dialog box

calculate when the project should finish. The Finish date would be determined by individual tasks, task durations, task predecessors, and resources assigned to tasks.

If a project is set to calculate by Finish date, all tasks will be scheduled to begin as late as possible, as shown in Figure 10. If the project is scheduled by Finish date, Project 2016 will determine the date you must begin your project to be able to complete the project by the set finish date. The Start date would be determined by individual tasks, task durations, task predecessors, and resources assigned to tasks.

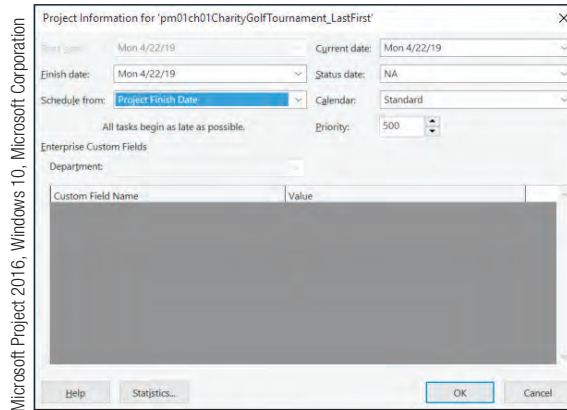


Figure 10 Project Scheduled by Finish date



CONSIDER THIS

Scheduling by Finish Date

While most projects are scheduled by Start date, you may need to schedule your project by Finish date to determine the latest date you can start the project. If you schedule a project by Finish date, it may be wise to switch back to scheduling from the Start date when work on the project begins. Projects scheduled by Start date help to show the progress of your project and to keep track of factors and situations that might cause the Finish date to change.

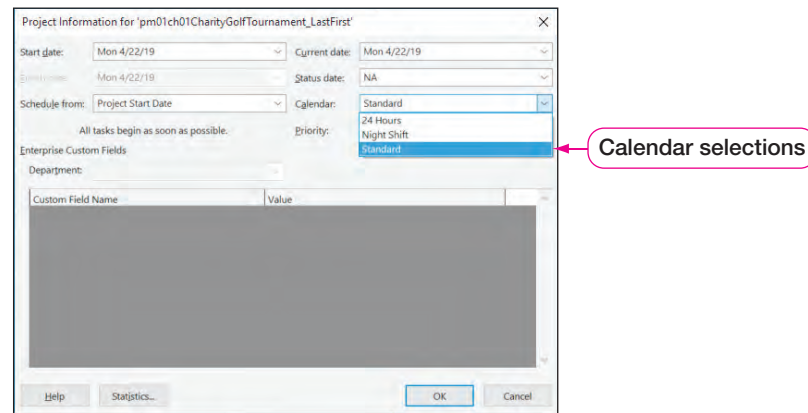
The **Current date** is today's date as determined by your computer's clock. The current date can be changed by entering a new date in the Current date section of the Project Information dialog box or by clicking the arrow for Current date and selecting a new date.

The **Status date** is the date set to run reports on a project's progress. For example, if a weekly team meeting is on Monday morning to review the current status of the project for the week ahead, the Status date may be set to the Friday before the Monday morning meeting. To run status reports, a project baseline must be set. A **baseline** is a record of each task at a point in time from which you will track project progress.

Project 2016 determines a project's schedule off the base calendar. A base calendar is the calendar applied to the project in the Project Information dialog box and provides a template for how the software will schedule tasks and resources. The default base calendar is the **Standard calendar**. The Standard calendar specifies hours in which work can occur. These hours are referred to as working time. If a project is set to schedule based on the Standard calendar, all tasks and each resource are scheduled according to this calendar. The Standard calendar is based on a 40-hour work week with an 8-hour work day (8:00 AM to 12:00 PM and 1:00 PM to 5:00 PM) Monday through Friday. Saturday and Sunday are considered nonworking days. If you recall, nonworking days are days which Project 2016 will not schedule any work to be completed.

Other available predetermined calendar choices are shown in Figure 11. The **24 Hours calendar** assigns a schedule with continuous work. This type of calendar may be assigned to a project that must work around the clock—for example, a mechanical

process. The **Night Shift** calendar assigns a schedule that is sometimes referred to as the “graveyard” shift schedule of Monday night through Saturday morning, 11:00 PM to 8:00 AM, with an hour off for break time.



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 11 Project calendar choices

Project managers can set the priority of a project in the Project Information dialog box. The priority of a project is determined on a scale of 1 to 1,000 with 1 being the lowest priority and 1,000 being the highest priority. A project with a priority of 1,000 is considered more important than a project with a priority of 100. Priorities are only used when project managers are trying to balance resource assignments among tasks and projects.

Preparing a Project Schedule Using the Project Information Dialog Box

Patti Rochelle has asked you to help determine the date for the charity golf tournament. Therefore, you will use Project 2016 to help calculate a possible tournament date. You will begin planning the project at the end of April; therefore, Patti has asked you to plan the project start date as of April 30, 2019.


In this exercise, you will change project information.

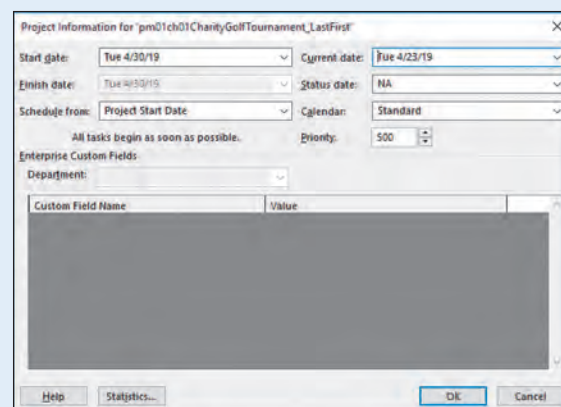
PM01.02

SIDE NOTE Selecting a Start Date

You can also select a start date by using the Start date arrow and scrolling through the calendar until you see the desired date.


To Change the Project Information

- Click the **Project** tab, and then click **Project Information** .
- In the Start date field, type **April 30, 2019**. In the Current date field, type **April 23, 2019**.



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 12 Project Information dialog box with modified start and current date

- c. Verify the **Standard Calendar** is selected, and then click **OK**.
- d. **Save**  the project.

Modify a Project Calendar

Once a base calendar has been assigned to a project, it is important the base calendar accurately reflects the working time hours a project team is available to work on the project. If not, Project 2016 will calculate an incorrect project schedule that may lead to a project's failure.

Take the charity golf tournament as an example. If the base calendar of the project is the Standard calendar, Project 2016 will schedule all tasks on a 40-hour-per-week working time schedule. If the task of "prepare preliminary budget" is entered with a 1-week duration, Project 2016 will schedule 40 hours of work to the task. Project 2016 will assign this task a duration of 5 working days (8 hours per day for 5 days for a total of 40 hours).

Now imagine there are only 20 hours available each week to dedicate to this project due to other commitments (not the 40 hours as set by the base Standard calendar). If this is the case, the Standard calendar must be modified to reflect the actual working time available. If modifications to the calendar are not made, Project 2016 will schedule the work incorrectly. To review how Project 2016 schedules tasks based on a project's calendar, refer to Table 2.

Calendar	Task Duration	Working Time
Standard calendar with a 40-hour work week	1 week duration = 40 hours of work	5 days (40 hours/8 hours per day = 5 days)
Modified Standard calendar with a 20-hour work week	1 week duration = 40 hours of work	10 days (40 hours/4 hours per day = 10 days)


Table 2 Duration and start or finish dates

Modifying a Project Calendar

It is possible to adjust the Standard calendar to meet your project needs. Patti Rochelle, the project manager for the charity golf tournament, and her project team are only available to work on this project Tuesday through Friday 8:00 AM to 12:00 PM (16 hours per week). You will need to adjust the base Standard calendar to reflect the actual working time available.

PM01.03

To Change the Project Calendar Working Time

- a. Click the **Project** tab, if necessary.
- b. In the Properties group, click **Change Working Time**  to open the Change Working Time dialog box for the Standard calendar.

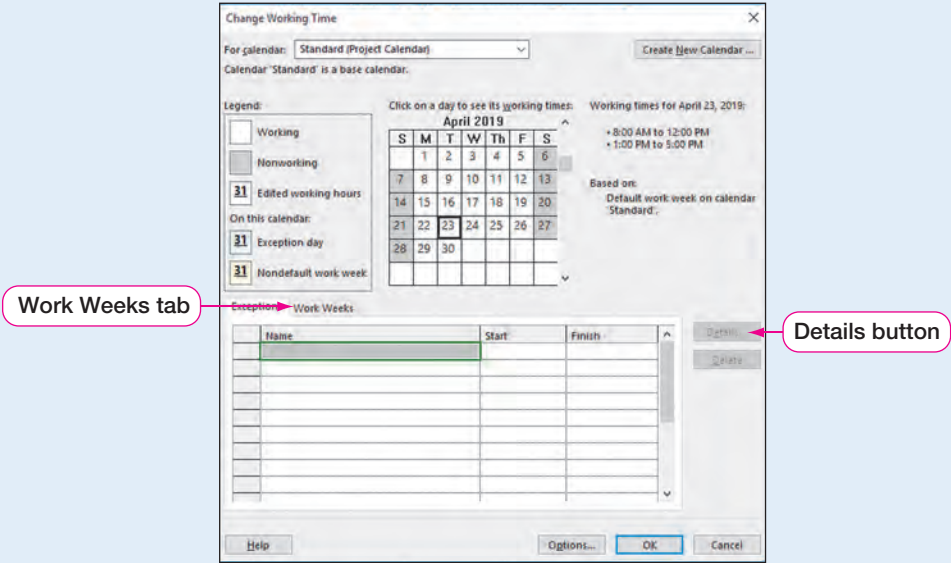


Figure 13 Change Working Time dialog box

- c. Click the **Work Weeks** tab in the bottom section of the dialog box, and then click the **Details** button. The Details for dialog box opens.

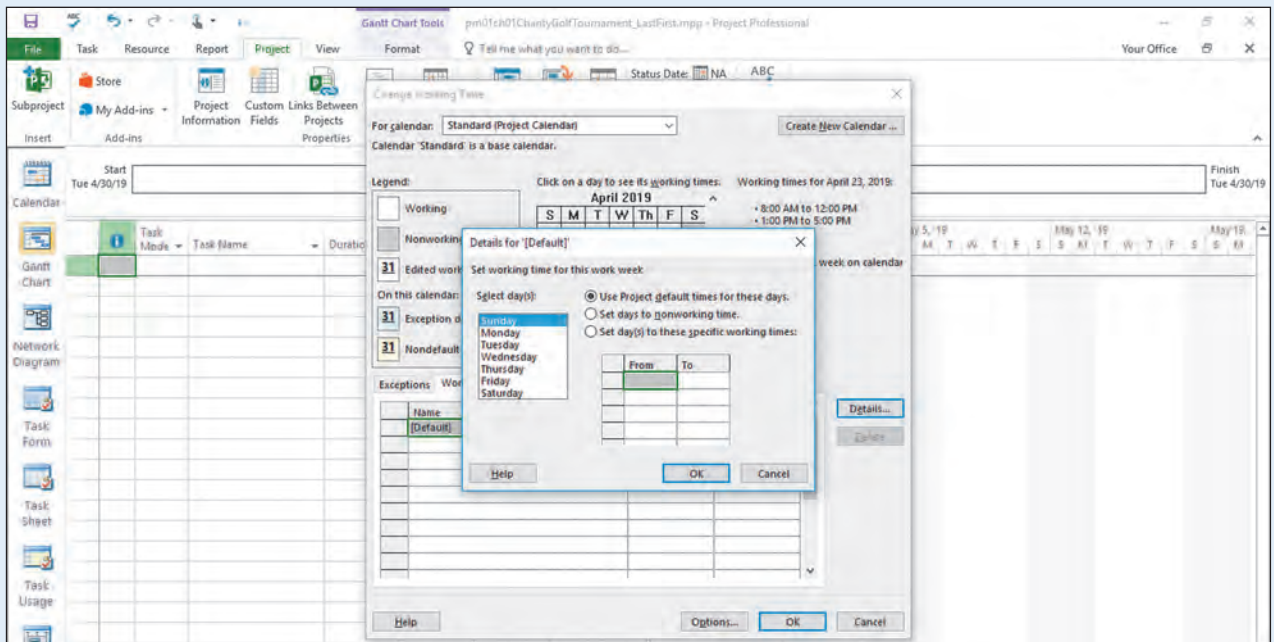


Figure 14 Calendar Details dialog box

- d. In the Details for dialog box, click **Monday**, and then click **Set days to nonworking time**.

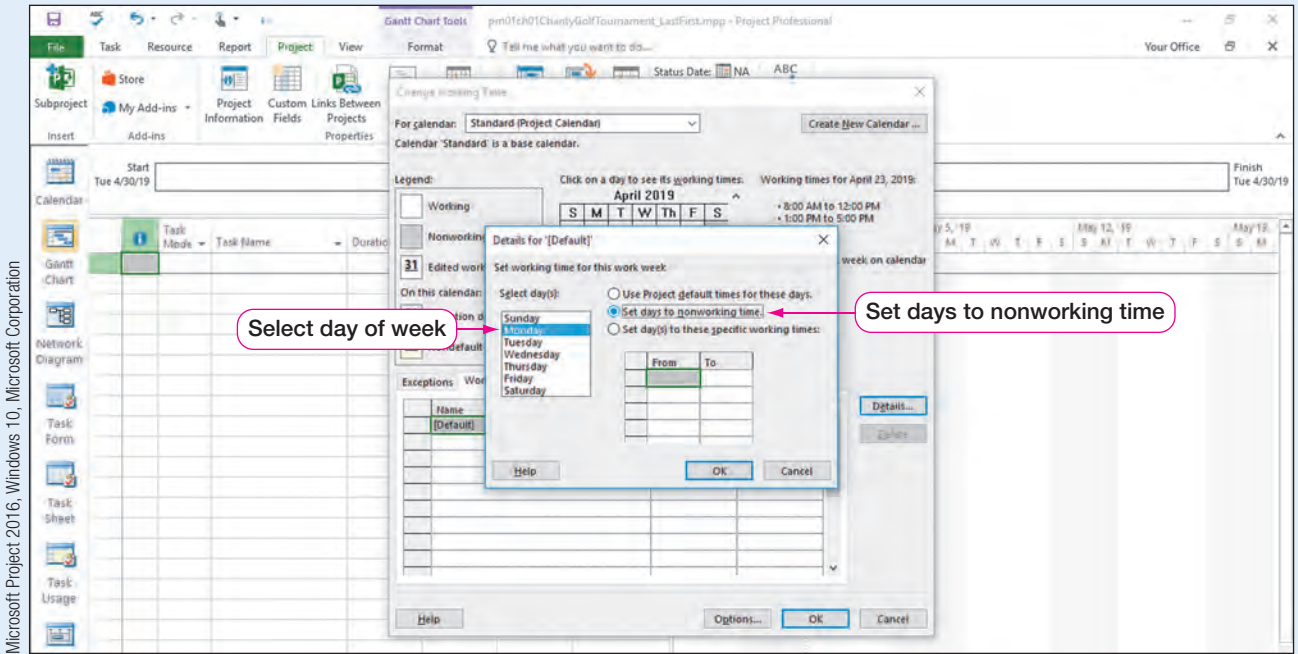


Figure 15 Mondays set to nonworking days

- e. Click **Tuesday**, press and hold **Shift**, and then click **Friday**.
- f. Click **Set day(s) to these specific working times**.
- g. In the specified work times grid, point to row 2, and then click the **2** in row 2. Press **Del** to clear the 1:00 PM–5:00 PM work times.

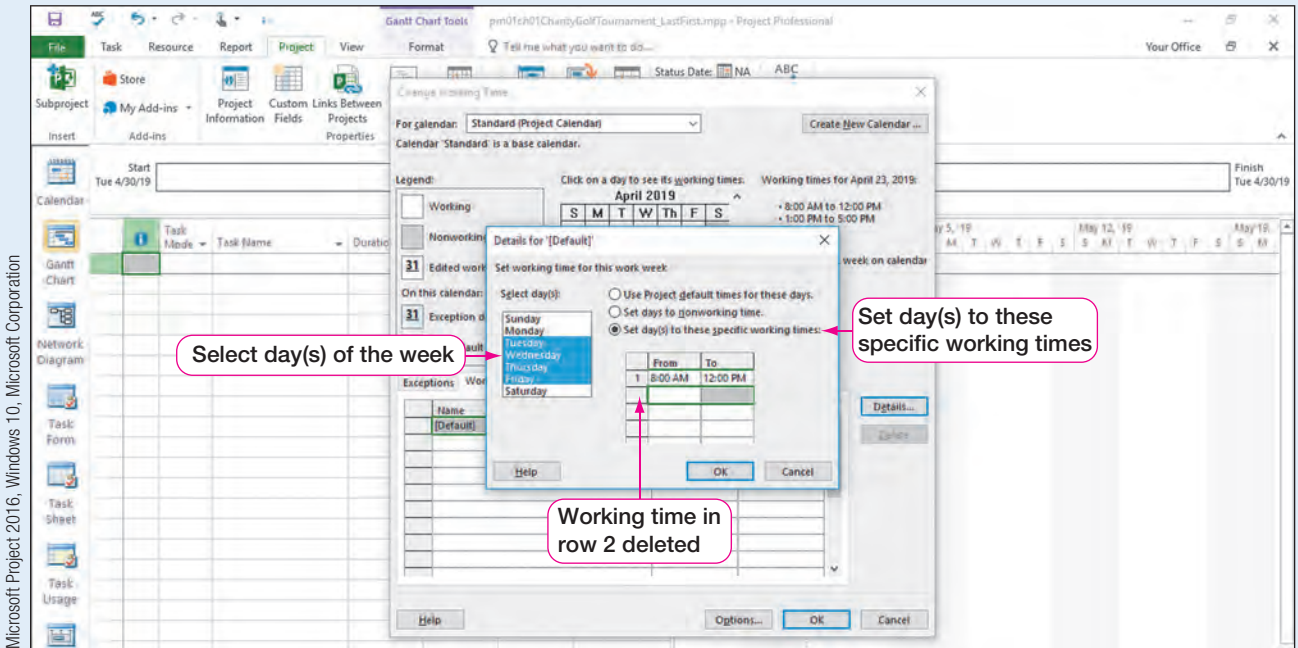


Figure 16 Specific working time for days of the week

- h. Click **OK**. The base calendar has now been changed to reflect that Mondays are nonworking days and Tuesday–Friday working hours are 8:00 AM–12:00 PM.

Troubleshooting

If necessary, scroll through the calendar in the Change Working Time dialog box until you see April 2019.

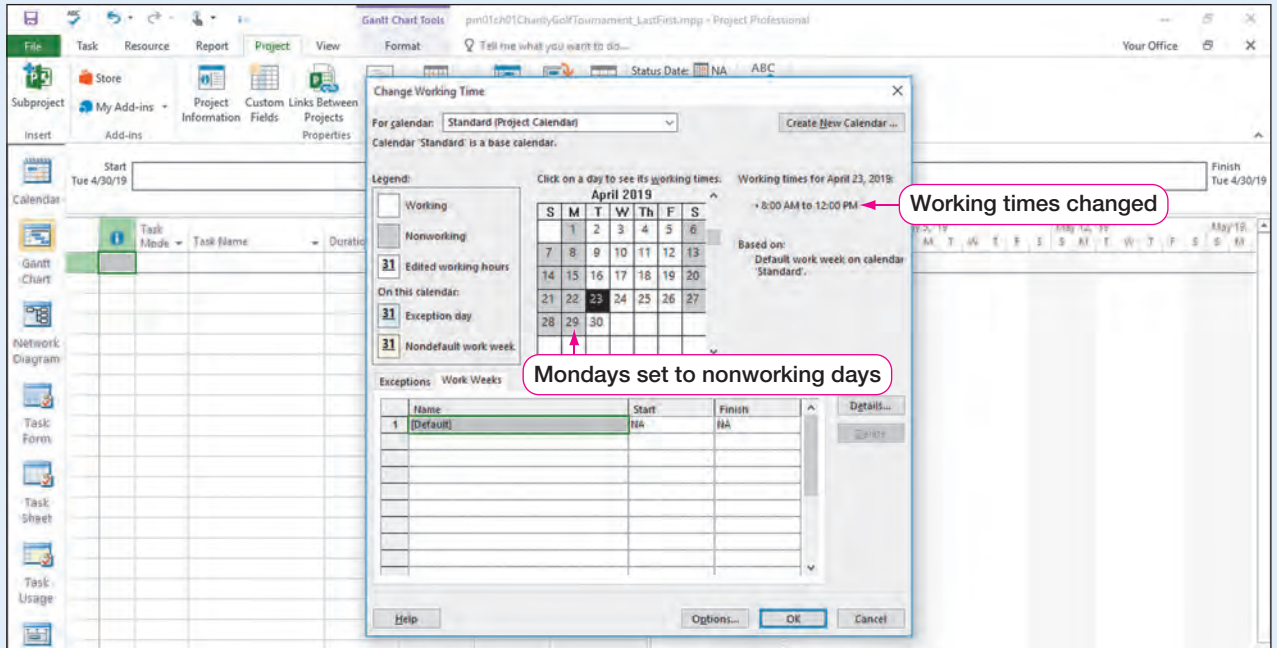



Figure 17 Change Working Time dialog box

- i. Click **OK** to close the Change Working Time dialog box, and then **Save**  the project.

REAL WORLD ADVICE

Working with Microsoft Project 2016 Around the Globe

In today's global economy, it is likely you will work for a company that has locations in different states or even countries. Therefore, when preparing your project calendar, consideration must be given to where your project team members reside. Although many countries consider a typical work week Monday through Friday with Saturday and Sunday as nonworking days, some countries may work on a 6-day work week or even a 4-day work week. So that Project 2016 has accurate information when creating a project's schedule, it is important that the base calendar accurately reflects the availability of all project team members.

Adding Exceptions to the Project Calendar

Since all organizations do not observe the same holidays, Project 2016 does not include holidays in the Project calendars. If your organization and/or project team observes holidays, you should account for them in the project's calendar. If holidays are not accounted for, Project 2016 cannot factor them into the project's schedule and therefore may miscalculate the project schedule by assigning work on a nonworking day. Holidays can be added to a project calendar by creating exceptions to a project's base calendar.

Patti Rochelle, the project manager for the charity golf tournament, has clarified that the following holidays will be observed by the project staff: July 4-5, 2019, and September 3, 2019. Therefore, you will need to make these days nonworking days in the project's calendar by adding exceptions to the project's calendar.

In this exercise, you will add exceptions to the project calendar.

PM01.04

To Add Exceptions to the Project Calendar

- Click the **Project** tab, if necessary, and then in the Properties group, click **Change Working Time** to open the Change Working Time dialog box once again.
- On the calendar, click **July 4, 2019**, press and hold **⇧ Shift**, and then click **July 5, 2019**.

Troubleshooting

If you do not see the correct dates in the Change Working Time calendar, you may need to scroll through the calendar until July 2019 is visible.

- In the bottom section of the Change Working Time dialog box, click the **Exceptions** tab, and then click in the **first empty cell** in the Name column.
- Type **US Independence Day** as the first exception, and then press **⇧ Tab**. Click in the next blank row of the Exceptions table. Verify that the dates of July 4-5, 2019, have been changed to nonworking days.

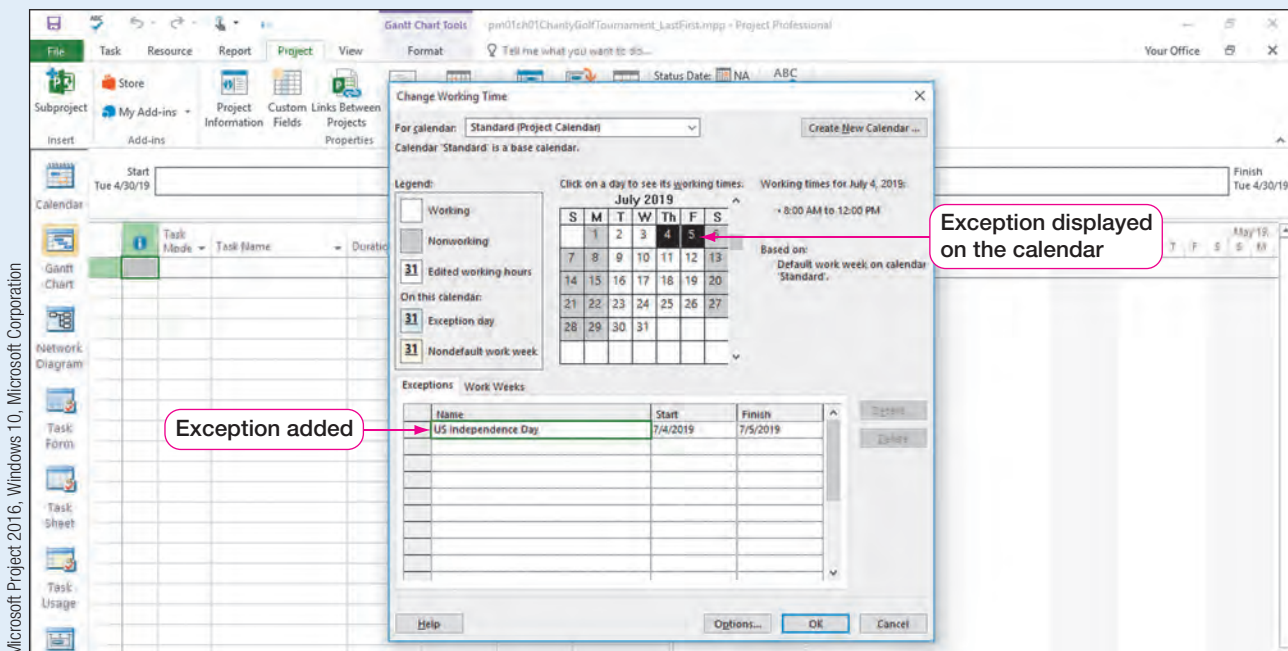


Figure 18 Calendar exception added

- Click in the **next empty cell** in the Exceptions Name column, and then type **Company Picnic**.
- Press **⇧ Tab**, and then click in the **Start** column.

- g. Click the **Start** column arrow to display the date picker, change the Start date to **September 3, 2019**, and then press **Tab**. Click the **Finish** column to verify that September 3, 2019, is a nonworking day.

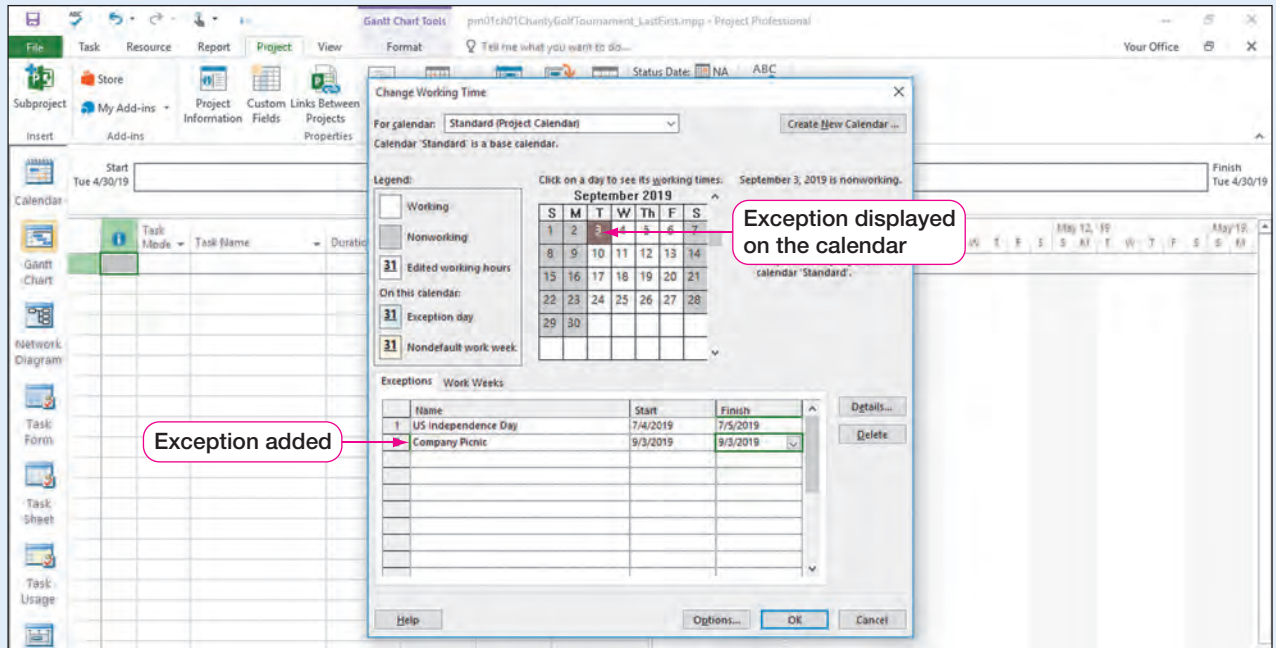


Figure 19 Calendar exception added

Troubleshooting

If an exception is not appearing as a nonworking day in the calendar, click the Exception row in the Exceptions Name box, and then click the Details button. Set the selected Exception day to Nonworking, and then click OK.

- h. Click **OK** to close the Change Working Time dialog box, and then **Save**  the project.

REAL WORLD ADVICE

Task Calendars

One size does not fit all when it comes to Project 2016 calendars! To make sure Project 2016 is creating an accurate schedule, individual tasks may need to be completed outside of the base calendar working time. For example, if the charity golf tournament's base calendar is set to working times of Tuesday–Friday, 8:00 AM to 12:00 PM, but training for event staff needs to occur from 1:00 PM to 5:00 PM, a task calendar can be created to reflect the training times of 1:00 PM to 5:00 PM. Once a task calendar is created, the calendar is applied to the appropriate task(s), and Project 2016 is then able to schedule those particular tasks outside of the base calendar working times. Task calendars can be created for any task that does not follow the working and nonworking times set on the project's base calendar.

QUICK REFERENCE

Creating a Task Calendar

To create a task calendar, click the Project tab, and then:



1. Click Change Working Time in the Properties group.
2. Click the Create New Calendar button, and then enter a name for the task calendar. Click OK.
3. Click the Work Weeks tab.
4. Click the next empty cell in the Name column. Enter a descriptive name and press **Tab**, and then click in the Start cell.
5. Click the Details button. In the Details dialog box, choose the appropriate option for your task calendar. Edit the From and To times as necessary. Click OK in both dialog boxes.

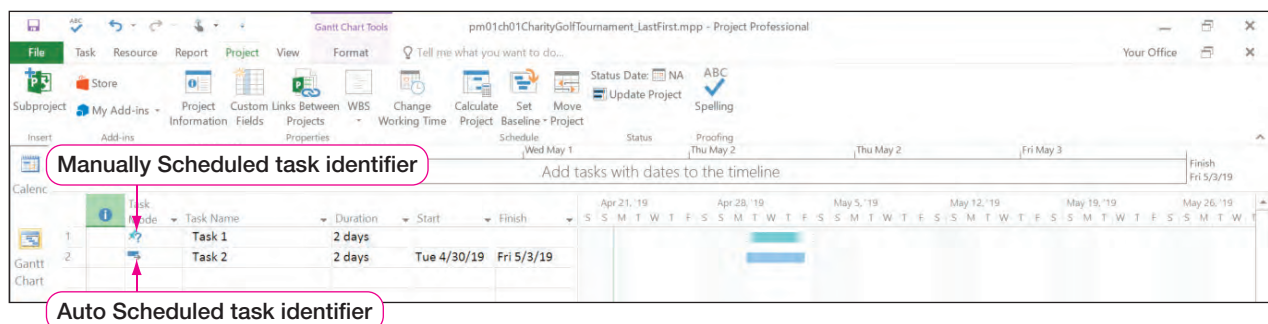
Once the new task calendar is created, it would need to be assigned to specific tasks using the Task Information dialog box.

Understand Manually Scheduled Versus Auto Scheduled Projects

To understand how Project 2016 schedules tasks, it is important to identify if tasks are being scheduled manually or automatically. The default in Project 2016 is for tasks to be **Manually Scheduled**. In this mode, you enter a task duration and the task Start date for a task, and then Project 2016 will calculate the Finish date. In other words, task dates are not calculated or adjusted by Project's 2016 scheduling engine, even if changes to related tasks are made. Project managers who desire more control over the project schedule may elect to use manual scheduling.

If a project manager wants to take advantage of Project's 2016 scheduling engine, however, the project would likely be set to Auto Scheduled. If a project is set to **Auto Scheduled**, the project schedule is calculated based on the project's calendar, project tasks and task durations, task dependencies, resource assignments, and any constraint dates assigned to tasks. Auto scheduled projects are more structured than manually scheduled projects.

Figure 20 displays how Project 2016 is scheduling the two tasks differently. Because Task 1 is being Manually Scheduled , it has no Start date or Finish date calculated by Project 2016 even though a duration of two days has been assigned to the task. Task 2 is set to Auto Scheduled , and therefore, the Start date and Finish date are calculated by Project 2016 based on the project's calendar and the task duration. Also note the differences in the Gantt bars in the Gantt chart from Manually Scheduled to Auto Scheduled tasks.



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 20 Manually Scheduled versus Auto Scheduled tasks

Table 3 explains additional differences between a manual scheduling and automatic scheduling of project tasks.

	Manual Scheduling	Automatic Scheduling
Duration	Can be number, date, or text information, such as “4 days” or “a few days”	Only numbers can be used that represent length and units, such as “4 days” or “2 weeks”
Project Calendar	Ignored by Project	Used by Project to determine a project’s schedule
Constraints	Ignored by Project	Used by Project to determine task Start or Finish date
Task Relationships (links)	Can be assigned but won’t change the task schedule	Can be assigned and will change the schedule of a task
Resources	Can be assigned to tasks but won’t change the task schedule	Can be assigned to tasks. Used by Project to help determine best schedule

Table 3 Manual scheduling versus automatic scheduling

Auto Scheduling a Project

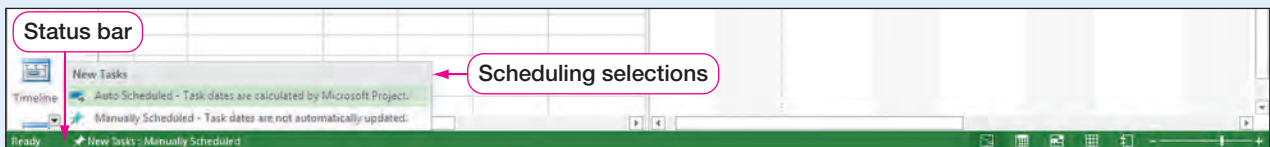
A project can be set to Auto Scheduled so that all tasks, unless otherwise specified, are scheduled by Project’s scheduling engine. If a project is set to Auto Scheduled, individual tasks can be changed to Manually Scheduled, if necessary. A project set to Manually Scheduled will allow the project manager to determine the Start and Finish dates of a project’s tasks. If a project is set to Manually Scheduled, individual tasks can be set to Auto Scheduled. To change individual tasks, click the Task tab and then click Auto Schedule in the Tasks group or click the arrow in the Task Mode column.

You are asked to set the project to Auto Scheduled so that Project 2016 can help you determine when it is possible to hold the charity golf tournament. In this exercise, you will change a project to Auto Scheduled.



To Change a Project to Auto Scheduled

- Click **New Tasks: Manually Scheduled** on the status bar.



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Figure 21 Project status bar

SIDE NOTE

Task Mode Column

The Task Mode column in the Entry table will reflect how a task is being scheduled once a task is entered.

- Click **Auto Scheduled – Task dates are calculated by Microsoft Project**. All tasks will now be calculated by Project 2016 unless set individually to Manually Scheduled.
- Save** the project. If you need to take a break before finishing this chapter, now is a good time.

Creating a Project Plan

Understanding project management terminology, exploring the Project 2016 window, adjusting the Project 2016 calendar, and choosing a scheduling method are just the start to creating a project plan. Time also needs to be spent on identifying project tasks, task durations, task dependencies, and task constraints.

Identify and Enter Project Tasks

Tasks are activities that must be completed to accomplish a project goal. Tasks are entered into the Entry table in Gantt Chart view but can also be entered in the Network Diagram view and the Calendar view. Task names should be concise, and each task should be entered on a separate row in the Entry table. Tasks are assigned durations by the project's manager. In Project 2016, the default for a duration of one day is eight hours. Even if the project schedule is set to a 20-hour work week versus a 40-hour work week, Project 2016 still calculates one day as eight hours by default.

Durations help Project 2016 to calculate a task's Start (or Finish) date if a project is set to Auto Scheduled. Durations can be entered into the software using the following abbreviations:

Duration Abbreviation	Result Duration
1 min	1 minute
1 h	1 hour
1 d	1 day (default) or 8 hours
1 w	1 week
1 mon	1 month

Each task in a project is unique from other tasks within the same project, even if the tasks are related in some way. Information about a single task can be found in the Task Information dialog box by selecting the Information button on the Task tab. The **Task Information** dialog box includes all the details for a single task. Project managers can use the Task Information dialog box to view and update task details such as resource assignments, predecessors, and task calendar. Information for a task is divided into six categories (tabs): General, Predecessors, Resources, Advanced, Notes, and Custom Fields, as shown in Figure 22. You can also use the Task Information dialog box to make changes to a task.

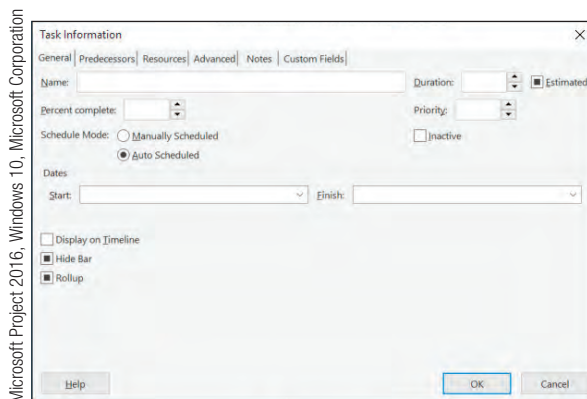


Figure 22 Task Information dialog box

Task names should be brief; therefore, more information may need to be added to a task for clarification. This can be done with a task **Note**. A task Note acts as a sticky note for a task and can be added on the Notes tab in the Task Information dialog box. A Note can provide more information on a task such as a web link, a phone number, or even an embedded file, such as an Excel spreadsheet, that provides further information on the task.

Navigating around an Entry table uses keystrokes similar to those used in other Microsoft applications.

QUICK REFERENCE

Navigating the Entry Table

Keyboard Shortcut

↑
↓
→
←
Enter
Shift + Enter
Home
End
Ctrl + Home
Ctrl + End
PgUp
PgDn
Tab
Shift + Tab

Moves the Active Cell

Up one row in the same column
Down one row in the same column
One column to the right
One column to the left
Down one row in same column
Up one row in same column
First column of the current row
Last column of the current row
First column and row
Last column of the last row
Up one screen
Down one screen
One column to right
One column to left

Entering Project Tasks

Now that you have prepared your project plan by adjusting the project calendar, and setting the project to schedule automatically and by start date, you are ready to create your project plan. Patti Rochelle, the charity golf tournament planning manager, has given you a list of tasks to enter into the project's Entry table.

In this exercise, you will enter project tasks.

PM01.06

SIDE NOTE

Text Wrap

Project 2016 has a Wrap Text feature for task names. If the name is longer than the column, the text will wrap within the cell.

To Enter Project Tasks

- If you took a break, open the [pm01ch01CharityGolfTournament_LastFirst](#) project.
- Click in the **Task Name** cell in row 1. Type **Set tournament objectives**.
- Press **Tab**. The default value of 1 day? will appear in the Duration column.

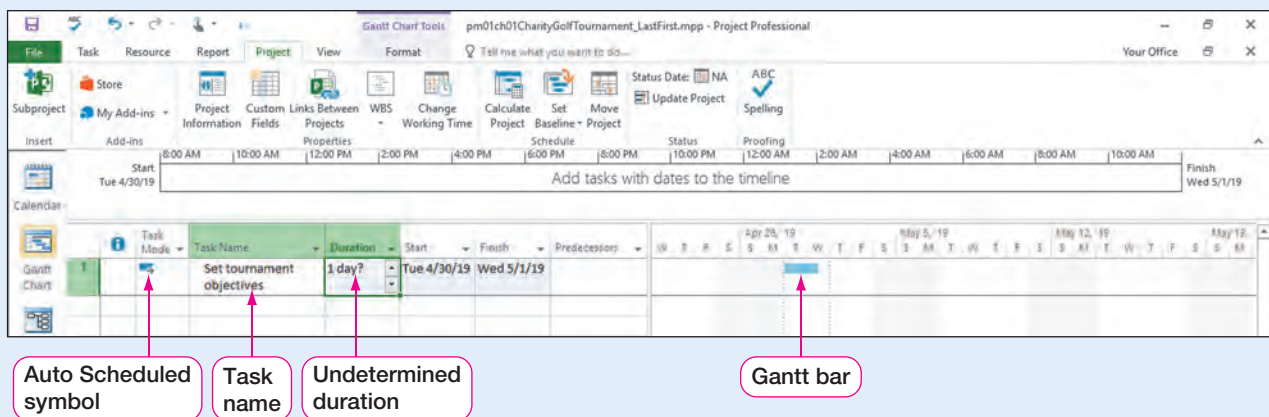


Figure 23 Entry table with new task default duration

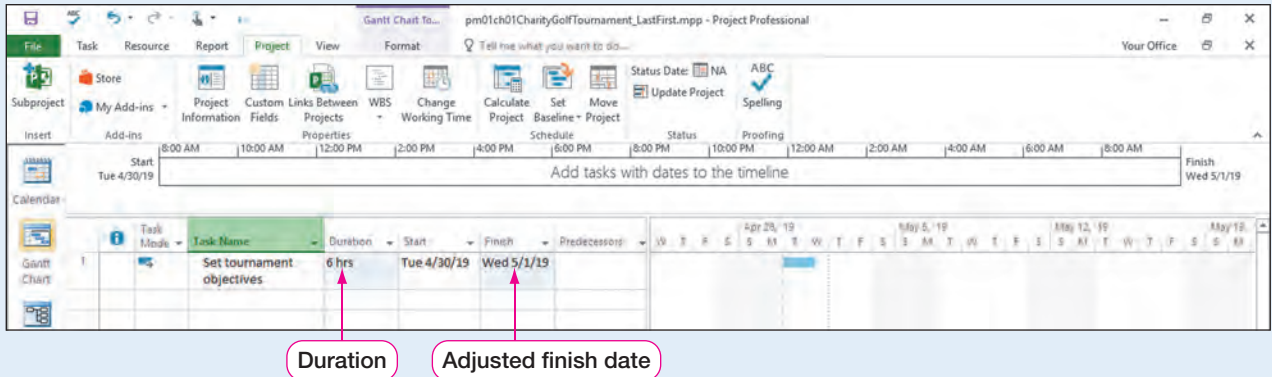
Microsoft Project 2016, Windows 10, Microsoft Corporation

SIDE NOTE

Project-Scheduled Changes

Whenever changes are made to affect a start or finish date of a task(s), those dates will be highlighted with a light colored background.

- d. Type **6h** in the Duration column. Press **Tab**. Notice how Project 2016 assigns a Start date and Finish date because your project is set to Auto Scheduled. The task is scheduled over two days because there are only four hours available in a day to complete a task. Note the Auto Scheduled symbol in the Task Mode column.



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 24 Entry table with task duration

SIDE NOTE

Task Information

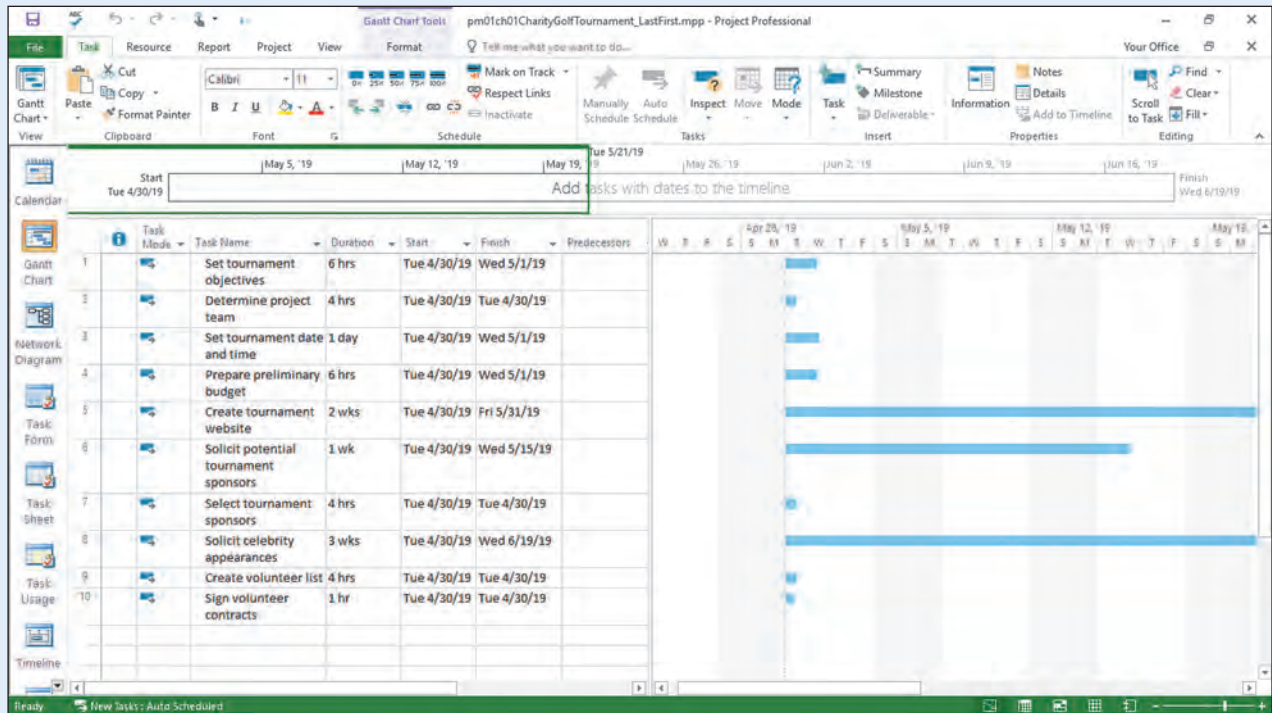
You can also open the Task Information dialog box by double-clicking a task.

- e. With **Set tournament objectives** (Task 1) selected, click the **Task** tab, if necessary, and then in the Properties group, click **Information** to open the Task Information dialog box. Explore the various tabs that can contain information about **Set tournament objectives**. Click **Cancel**.
- f. Enter the remaining tasks below in the Entry table. Remember you can use abbreviations for the durations.

Task	Task Name	Task Duration
2	Determine project team	4 hours
3	Set tournament date and time	1 day
4	Prepare preliminary budget	6 hours
5	Create tournament website	2 weeks
6	Solicit potential tournament sponsors	1 week
7	Select tournament sponsors	4 hours
8	Solicit celebrity appearances	3 weeks
9	Create volunteer list	4 hours
10	Sign volunteer contracts	1 hour



Troubleshooting

If the Start or Finish date column displays the date as wrapped text, you may want to widen the column. To widen a column, point to the right side of the column border in the field name. When your pointer turns into a double-pointed arrow, drag to the right until the date displays appropriately. As in Excel, you can also double-click between the columns to automatically widen the column.



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 25 Entry table with tasks added

- g. On the Quick Access Toolbar, click the **Spelling**  button to check the spelling of the task names.
- h. **Save**  the project.



CONSIDER THIS | Task Duration

Why is a task duration of one day being assigned a calendar duration of two days? The Project calendar for the charity golf tournament was adjusted to a four-hour working day of 8:00 AM to 12:00 PM. Therefore, by entering in a duration of 1d (one day = eight hours), Project scheduled the task to be completed over two calendar days: four available hours on day 1 and four available hours on day 2. Is using the day duration confusing? Consider entering durations in hours instead.

All the tasks are set to start on the project's start date. Project 2016 is scheduling this way because the project is scheduled by Start date and all tasks are scheduled to start *As Soon As Possible*. Project tasks will push ahead in time as you create a more detailed project schedule later in this workshop.

Modify Project Tasks in Project 2016

Project 2016 makes it easy to edit a project plan by adding, deleting, or changing existing tasks. As you are planning your project, you may discover that you need to add an additional task(s) in the middle of your project plan. Project 2016 allows tasks to be inserted by using commands on the ribbon, the shortcut menu, or the keyboard. Inserting a task in the middle of a project plan is similar to adding a row in Excel 2016 because Project 2016 will push every subsequent task down one row and adjust the project accordingly.

Adding and Modifying Project Tasks in the Entry Table

After brainstorming at a team meeting, the charity golf tournament planning team has identified a few additional tasks to be added to the project plan as well as an adjustment to task durations. You will add these tasks.

In this exercise, you will modify a task list.

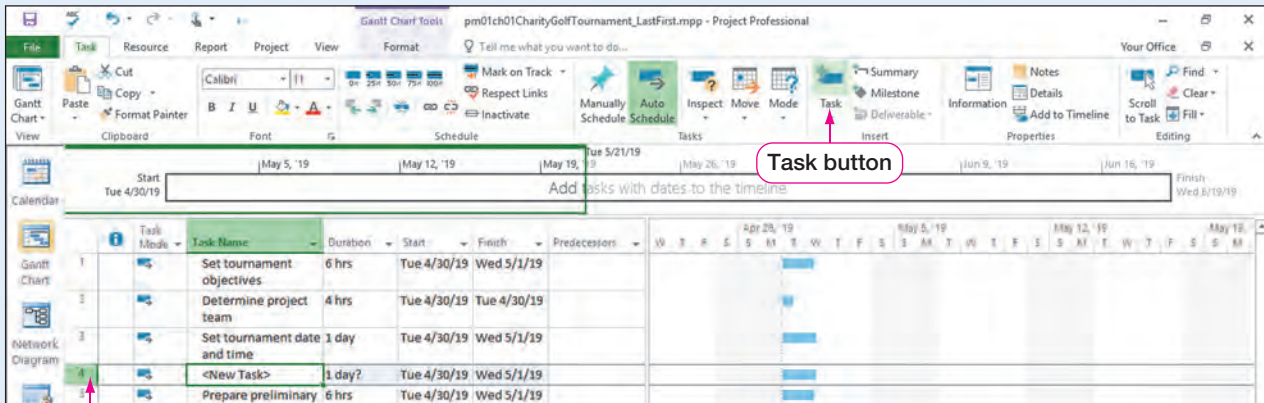
To Modify a Task List

SIDE NOTE

Adding Tasks in the Entry Table

Similar to Excel 2016, new task rows are added above the active row.

- a. Click any cell in task row 4, **Prepare preliminary budget**, and then click the **Task** tab, if necessary. In the Insert group, click the **Task** button. <New Task> appears as the task name.



New Task row added in Entry table

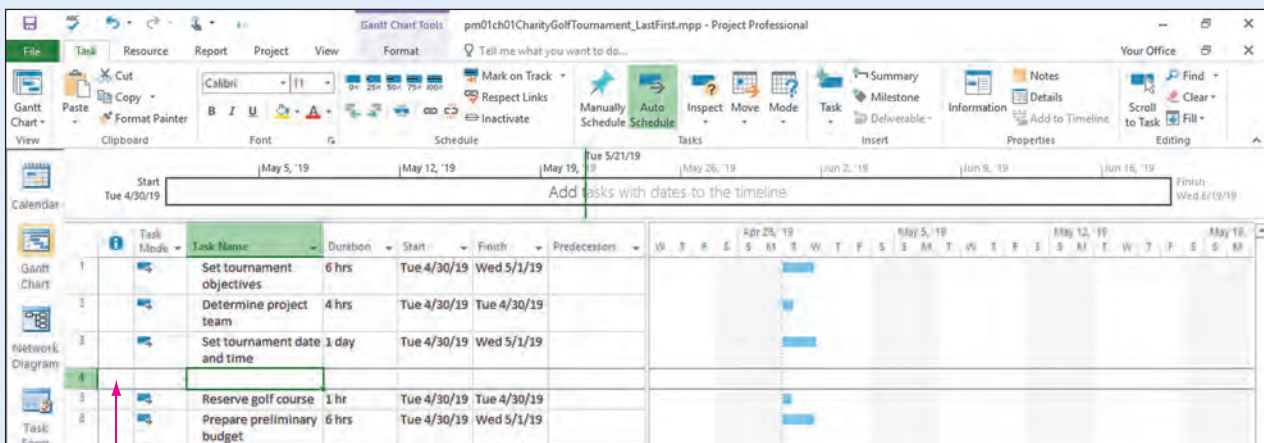
Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 26 New task row added in Entry table

Troubleshooting

If you selected the Task arrow instead of the Task button, select **Task**.

- b. Type **Reserve golf course**, and then press **Tab**. Type **1h**, and then press **Tab**. Reserve golf course becomes the new Task 4.
- c. With Reserve golf course (Task 4) still selected, press the **Insert** key. A blank row is added above the selected row to create a new task. Notice how a blank row is inserted with this method.



Blank row in Entry table

Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 27 Blank row added in Entry table

Troubleshooting

If your keyboard does not have an Insert key, repeat step a.

SIDE NOTE Task Changes

When you make changes to a task, Project 2016 will highlight the affected tasks in the Entry table with a light colored background.

- d. In the Task Name cell for the new Task 4, type **Perform site inspections**, and then press **Tab**. Type **4h**, and then press **Tab**.
- e. Click in the Duration column of Task 3, **Set tournament date and time**, and then type **1h** to change the duration from 1 day to 1 hour.
- f. Select **Solicit potential tournament sponsors** (Task 8), and then on the Task tab, in the Properties group, click **Information**. If necessary, click the General tab. In the upper right-hand corner of the General tab, change the **Duration** from 1 week to **3d**.
- g. Click the **Notes** tab. Add the note **Contact local sporting goods stores for a list of potential sponsors**.

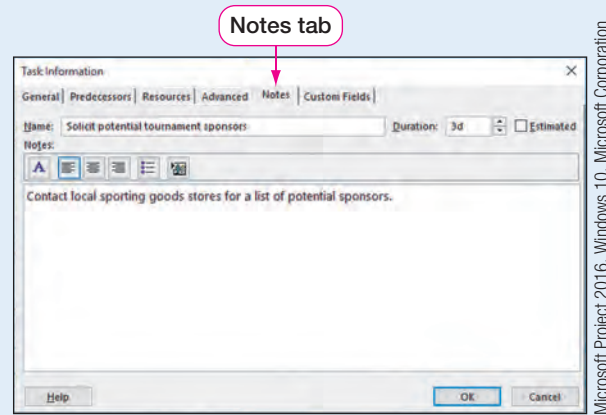


Figure 28 Task Information dialog box Notes tab

SIDE NOTE Task Note

Double-click the **Note** icon or hover over the Note icon in the Indicators column to display the note.

- h. Click **OK**. Notice the **Note indicator** in the Indicators column.
- i. Point to the note to see the note text.

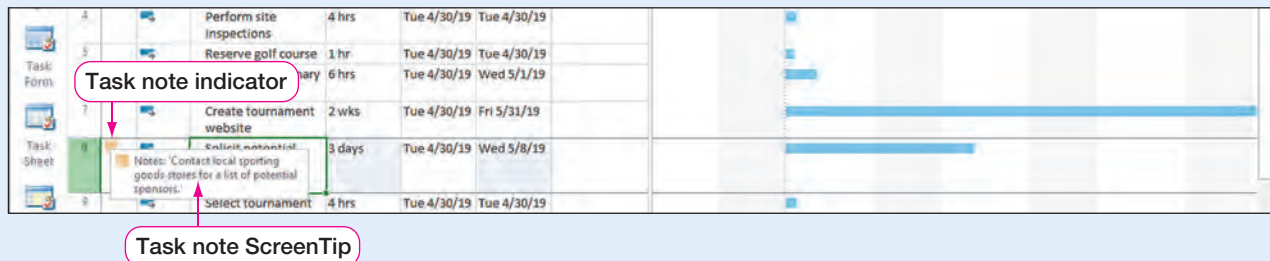


Figure 29 Note indicator in Entry table

- j. **Save** the project.

Microsoft Project 2016, Windows 10, Microsoft Corporation

QUICK REFERENCE

Inserting a Task

In the Entry table, click any cell below the row where you wish to insert a task.

- Right-click the row number of the task, and then click Insert Task from the shortcut menu, or
- Click the Task button in the Insert group on the Task tab, or
- Press Insert on the keyboard.

Deleting Project Tasks in the Entry Table

As a project planner, you may decide a project task is no longer needed. As well as inserting tasks, Project 2016 allows for tasks to be deleted. Deleting a task removes an entire task row and moves any subsequent tasks up a row. As with inserting tasks, there are several ways to delete tasks in Project 2016 such as using the ribbon, the shortcut menu, or the keyboard.

Since the project team for this charity golf tournament is already in place, in this exercise, you will delete a task.

PM01.08

To Delete a Task

- Right-click the row selector for **Determine project team** (Task 2).

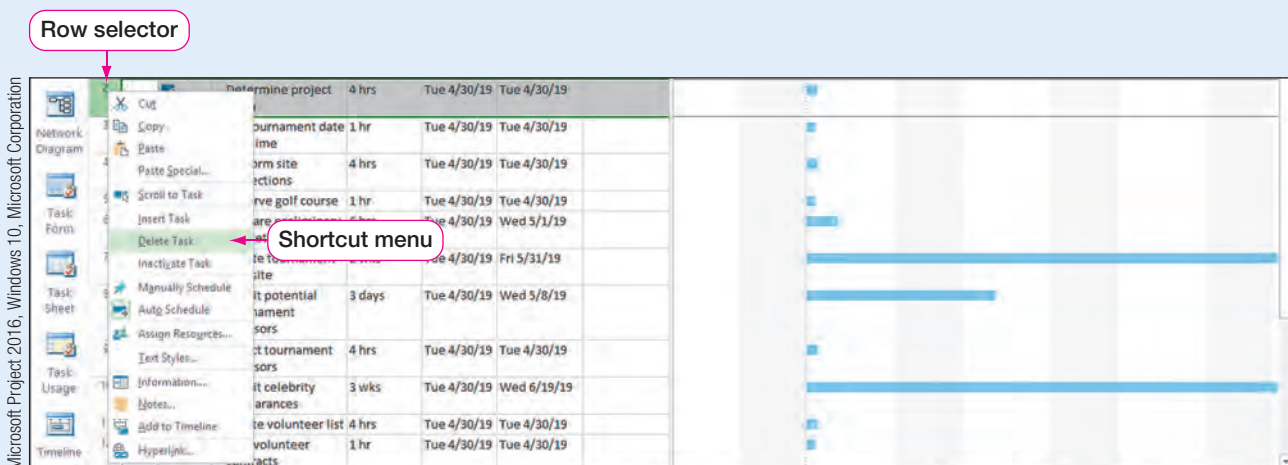


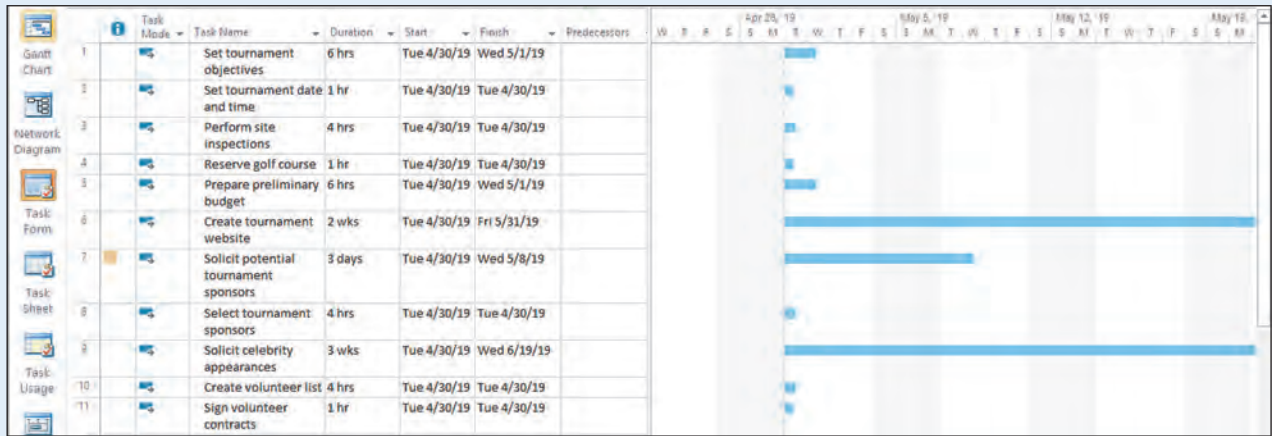
Figure 30 Task shortcut menu

- Click **Delete Task** from the shortcut menu. The Determine project team task is deleted.
- Click the row selector for **Create volunteer list** (Task 10). With the task selected, press **[Del]**. Task 10 is now deleted.

Troubleshooting

If you press **[Del]** on the Task Name cell of a task row, Project 2016 will prompt you to 1) delete the task name or 2) delete the task. To avoid this prompt, select the task row selector, and then press **[Del]**.

- d. On the Quick Access Toolbar, click **Undo**  to undo the deletion of Task 10.



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 31 Entry table with task deleted

- e. **Save**  the project.

QUICK REFERENCE

Deleting a Task

In the Entry table, click any task row you wish to delete.

- Right-click the row number of the task, and then select Delete Task from the shortcut menu, or
- Click the row selector of the task to be deleted, and then press the Delete key on your keyboard, or
- Click any cell of a task you want to be deleted, and then in the Editing group, on the Task tab, click the Clear button to display the menu. Click Entire Row to delete the task.

Moving, Cutting, Copying, and Pasting Project Tasks in the Entry Table

Project planners may decide to reorder tasks or even copy tasks. Moving tasks will simply reorder tasks within the Entry table. If a task is cut, the task will be temporarily deleted and placed on the Project 2016 clipboard. If a task is copied, the task stays in its current location but is also placed on the clipboard to be pasted in another location in the Entry table. Any tasks on the clipboard can be pasted within the Entry table of the project.

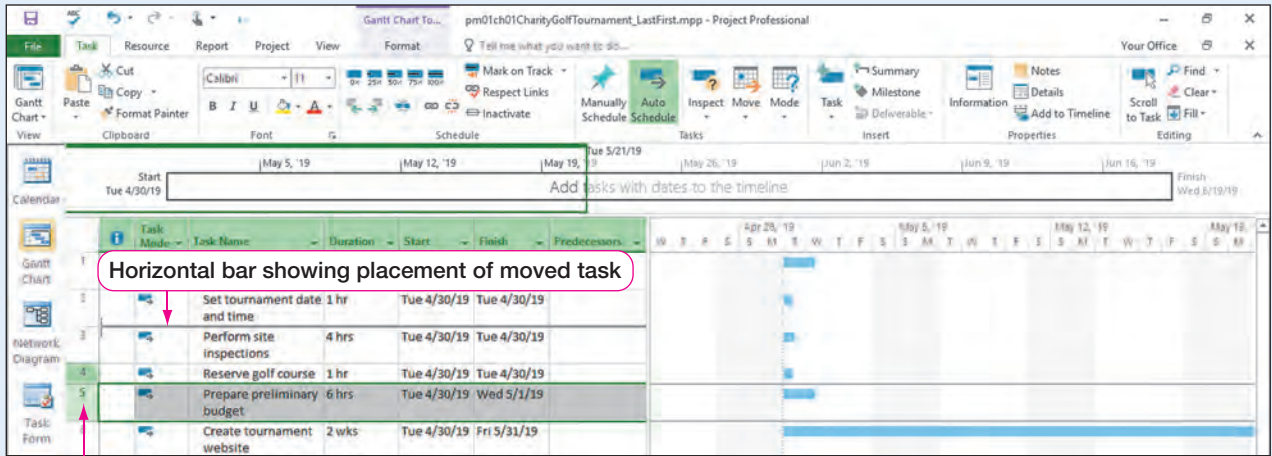
After reviewing the project tasks, you have decided it is important to prepare your budget before you perform site inspections. Therefore, you will move Task 5.

In this exercise, you move a task in the Entry table.

PM01.09

To Move a Task

- Click the row selector for **Prepare preliminary budget** (Task 5) to select the task.
- Press and hold the row selector again (you will see a four-arrow pointer). Drag the row selector above **Perform site inspections** (Task 3). As you drag Task 5, a dark gray horizontal bar will indicate the position of the task if you were to let go of your mouse.



Selected task

Figure 32 Moving a task in the Entry table

Microsoft Project 2016, Windows 10, Microsoft Corporation

- c. Release the mouse button. The **Prepare preliminary budget** task is now Task 3.

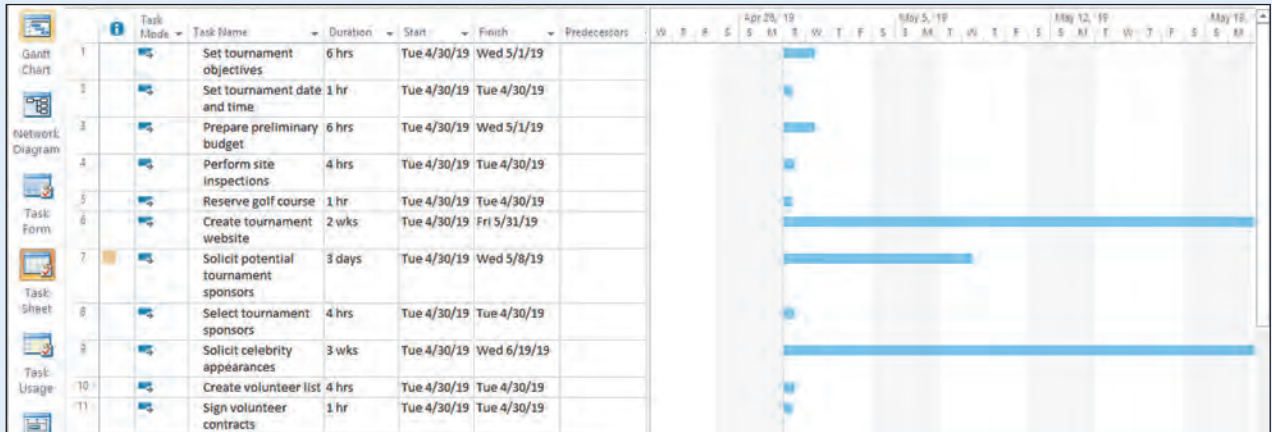


Figure 33 Entry table with task moved

Microsoft Project 2016, Windows 10, Microsoft Corporation

Troubleshooting

If you are having difficulty moving a task, be sure you first click the row selector of a task. Then click the task row selector again and drag the task to the desired location.

- d. Right-click the row selector for **Set tournament objectives** (Task 1). Click **Copy** on the shortcut menu. Click in row 12, the first blank row, and then on the Task tab in the Clipboard group, click **Paste**. This creates a copy of the task.
- e. Delete the copied task.

Troubleshooting

When deleting Task 12, be sure to click the row selector for the task.

- f. **Save**  the project.

Modifying Project Tasks in Calendar View

The Project 2016 software has several views from which to edit or view your project tasks. You can switch from one view to the other using the View Bar, which appears at the left-hand side of the project window. Gantt Chart view displays tasks, task durations, and task dependencies in a Gantt chart with horizontal bars and is the default view in Project 2016. The length of the task bars in the Gantt chart relates to the task detail such as duration and the zoom of the timescale at the top of the Gantt chart.

Calendar view displays tasks as bars on a calendar in a monthly format. Calendar view may be used to see upcoming weekly or monthly tasks. Managers may also choose to print from Calendar view because it gives an overview of the week or month ahead.


Patti Rochelle, the tournament planning manager, has asked you to add additional tasks to the charity golf tournament project plan. You decide to make these additions in the Calendar and Network Diagram views.

In this exercise, you will add and modify tasks in Calendar view.


PM01.10

SIDE NOTE

Alternate Method

You can also switch views by using the Calendar view  on the View Bar.

To Add and Modify Tasks in Calendar View

- Click **Create volunteer list** (Task 10), and then click the Task tab, if necessary.
- On the Task tab, in the View group, click the **Gantt Chart**  arrow, and then click **Calendar** to switch to Calendar view.

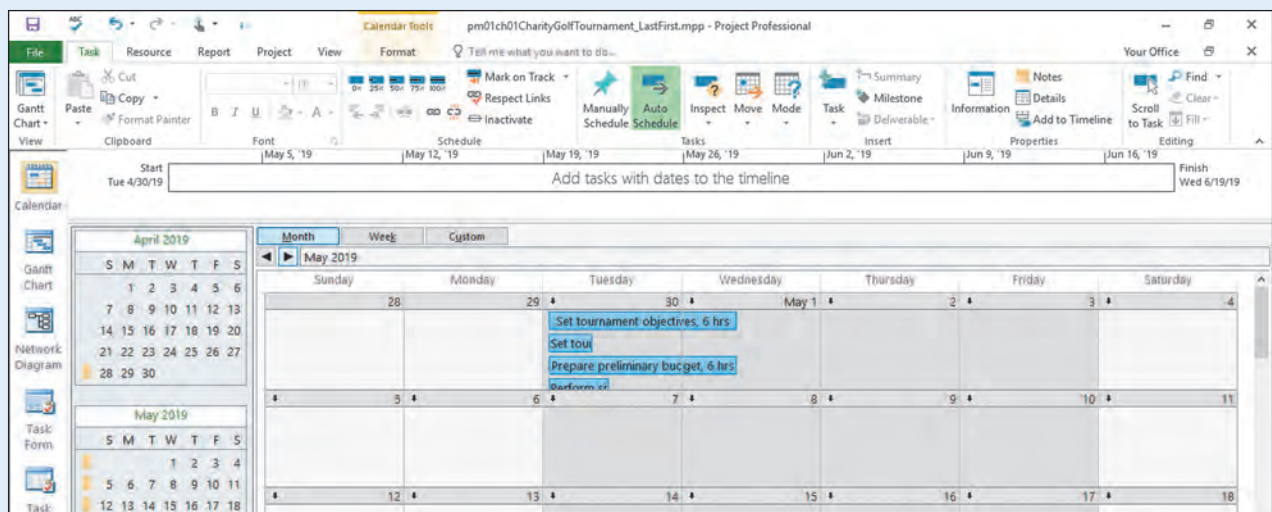


Figure 34 Calendar view

- c. In Calendar view, click **Week** to change the calendar to Week view format.

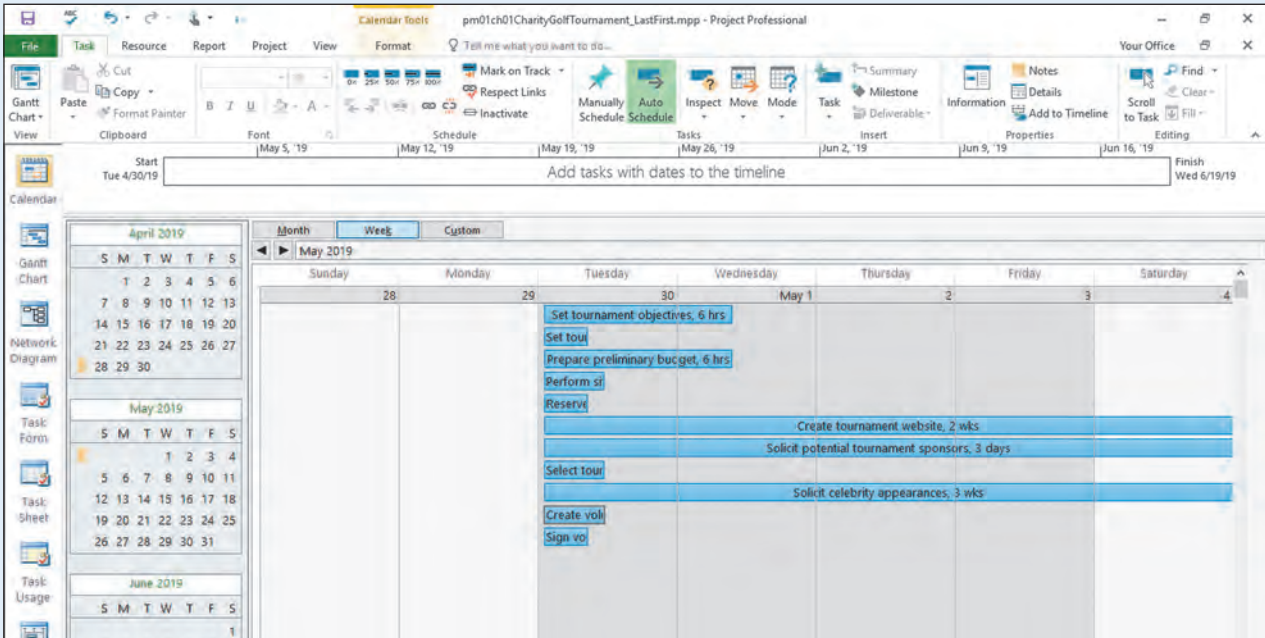


Figure 35 Week view option in Calendar view

- d. With Calendar view in the Week format and Task 10 still selected, click the Task tab, if necessary. In the Insert group, click the **Task +** button to add a new blank task.

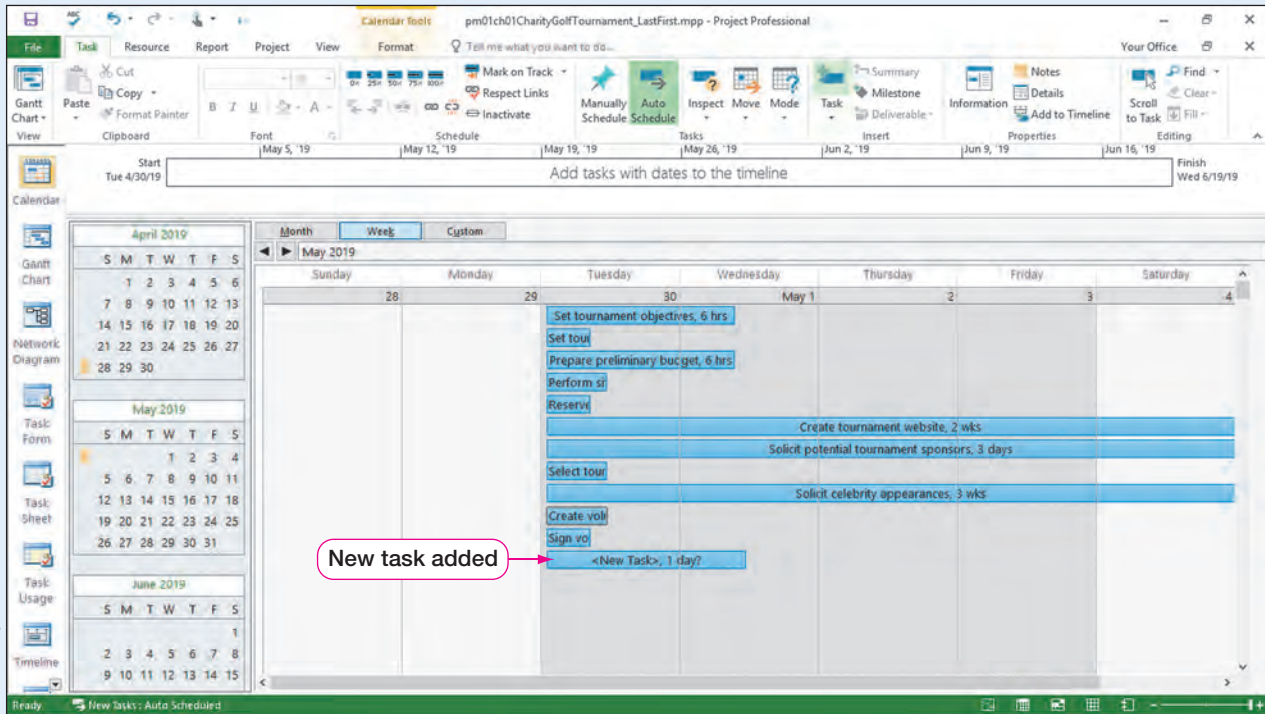
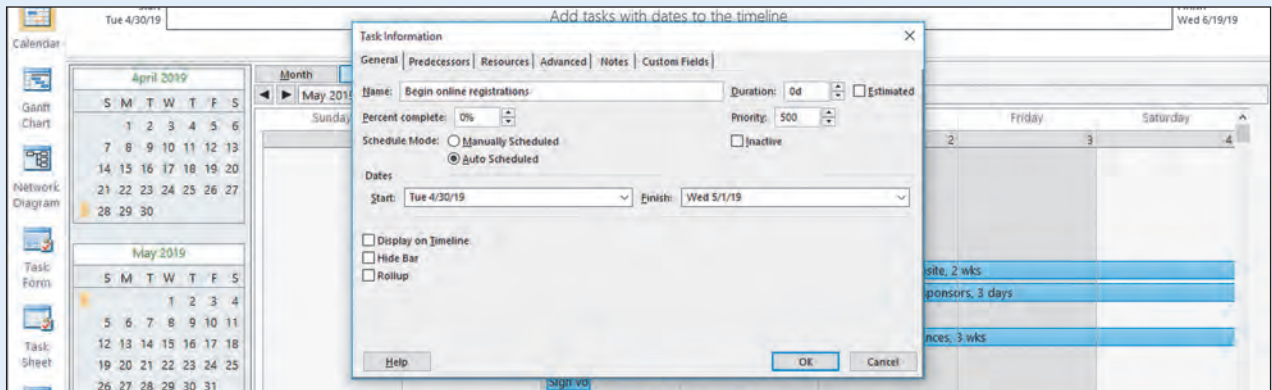


Figure 36 New task added in Calendar view

- e. Double-click **<New Task>, 1 day?** on the Calendar to open the Task Information dialog box.

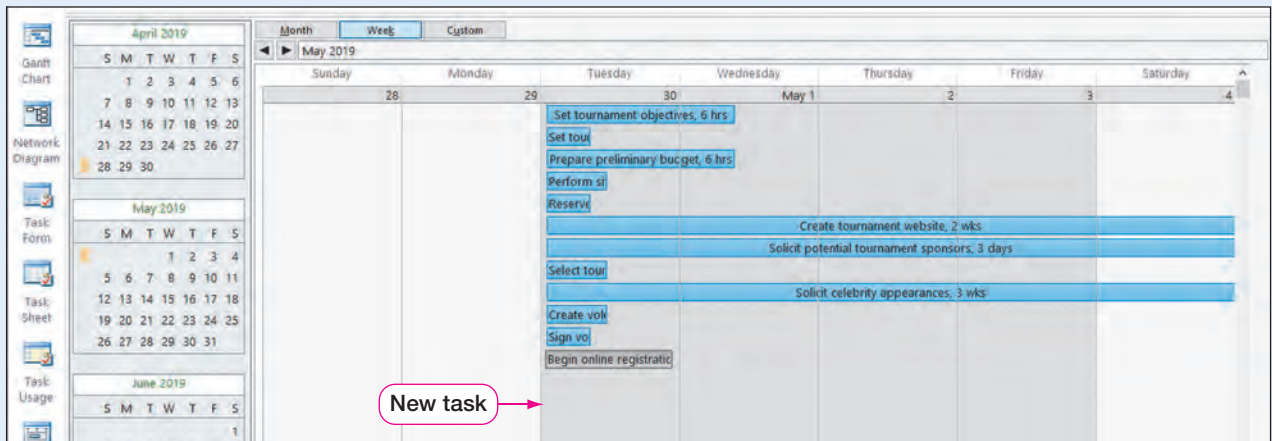
- f. On the General tab of the Task Information dialog box, click in the Name box, and then type **Begin online registrations**. Press **Tab**, and then type **0d** in the Duration box to enter the Milestone task.



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 37 Task Information dialog box

- g. Click **OK**.




Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 38 Calendar view with new task added

SIDE NOTE


Milestone Task

Notice the milestone task is identified in the Gantt chart as a diamond.

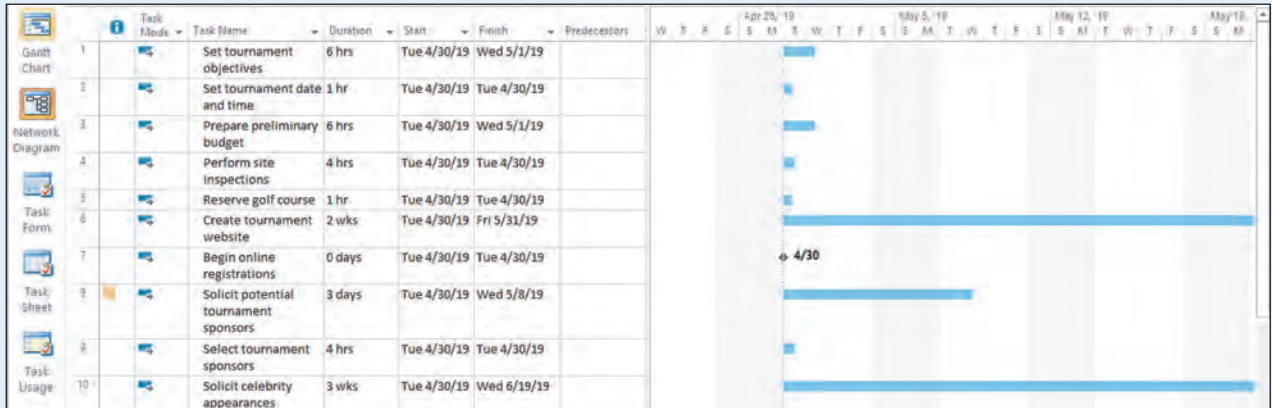
- h. Click **Gantt Chart**  on the View Bar on the left-hand side of the Project 2016 window to view the new Task 10 in the Gantt chart.

Troubleshooting

If the View Bar is not visible on the left-hand side of the Project 2016 window, right-click the vertical text **GANTT CHART** on the left-hand side of the Project 2016 window, and then click **View Bar**.

- i. Click in the **Task Name** cell of Task 10. Click the **Gantt Chart Tools Format** tab. In the Columns group, click **Wrap Text**  twice to wrap the text of the new task. Notice the wrapped text of the task names in the Entry table.

- j. Click the row selector for **Begin online registrations** (Task 10), and then move the task above **Solicit potential tournament sponsors** (Task 7). Begin online registrations is now Task 7.



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 39 Gantt Chart view with new task added and moved

- k. **Save**  the project.

Modifying Project Tasks in Network Diagram View

Not only can tasks be added in Gantt Chart view and Calendar view, but they can also be added and modified in Network Diagram view. **Network Diagram** view also displays tasks and task dependencies. However, this view provides more information by displaying each task in a detailed box and clearly representing task dependencies with link lines. The Network Diagram also displays the critical path. The **critical path** consists of tasks (or a single task) that determine the project's Finish date (or Start date); tasks on the critical path are considered critical tasks. The main purpose of the Network Diagram is to assist project managers in viewing the critical path.

Critical tasks are displayed in light red on the network diagram. A **critical task** must be completed on time in order to meet the project's Finish date (or Start date). A task becomes critical based on the task dependencies, task durations, and task resource assignments. Project managers must monitor critical tasks to be sure they are being completed on time in order to successfully meet the project schedule. You decide to switch to this view and add another project task.

In this exercise, you will add and modify tasks in Network Diagram view.


PM01.11

SIDE NOTE

Identifying a Critical Task

Task 10 is a critical task because at this point in the planning process, Task 10 has the longest duration.

To Add and Modify Tasks in Network Diagram View

- a. With Task 7 still selected, click **Network Diagram**  on the View Bar to switch to Network Diagram view.
- b. Scroll down the Network Diagram as necessary to view **Begin online registrations** (ID: 7). Note the shape of this task is different from the other tasks with a rectangle shape because Task 7 is a milestone task. Also note the task has a black background because it is the selected task.
- c. Scroll down again until you see **Solicit celebrity appearances** (Task 10). Note this task appears in red because it is a critical task.

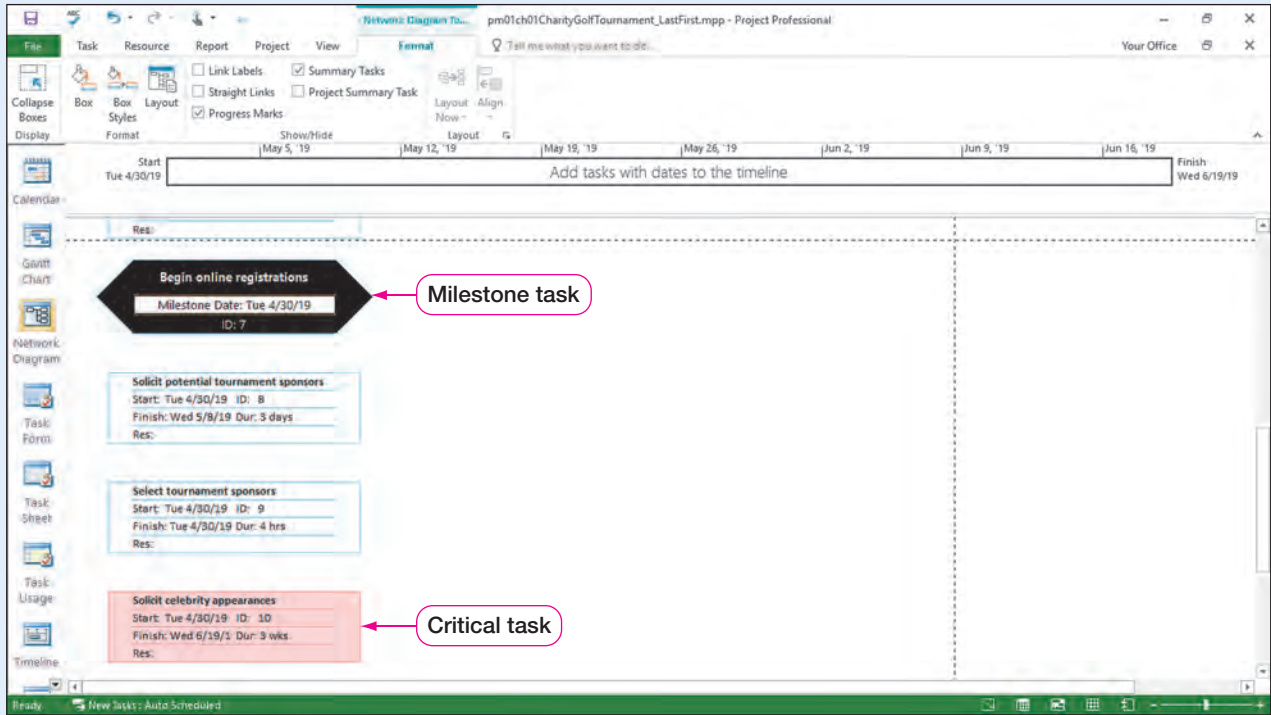


Figure 40 Network Diagram view of tasks

SIDE NOTE


Tasks in Network Diagram View

A selected task in the Network Diagram will appear with a black background and white text.

SIDE NOTE

Adding a New Task in the Network Diagram

You can also add a task in Network Diagram view by clicking in a blank area of the Network Diagram and dragging to draw a small rectangle.

- d. While still in Network Diagram view, scroll up, and then click **Create tournament website** (Task 6) to select the task.
- e. Click the **Task** tab, and then in the Insert group, click **Task**  to add a new blank task in Network Diagram view. The new blank task becomes Task 6 with Create tournament website (Task 7) still selected.
- f. Double-click the **<New Task>** rectangle to open the Task Information dialog box.

Troubleshooting

If you clicked on the new task's border, the Format Box dialog box will appear. Click Cancel, and then double click inside the task box instead.

- g. Click the **General** tab of the Task Information dialog box, add the Name **Design tournament logo**, and then press **Tab**.
- h. Enter a Duration of **1d**, and then click **OK**. The new task has the task name Design tournament logo with a duration of one day.
- i. With **Design tournament logo** (Task 6) still selected, click one time in the **Dur:** box, type **2d**, and then press **Enter** to change the duration of the task from one day to two days.

Troubleshooting

If the Task 6 Task Information dialog box opened when attempting to adjust the duration, you double-clicked the task. Close the Task Information dialog box, and then click once to select Task 6.

- j. Select **Reserve golf course** (Task 5). Change the duration of Task 5 to **0d** to make this task a milestone and change the shape of the task in Network Diagram view.

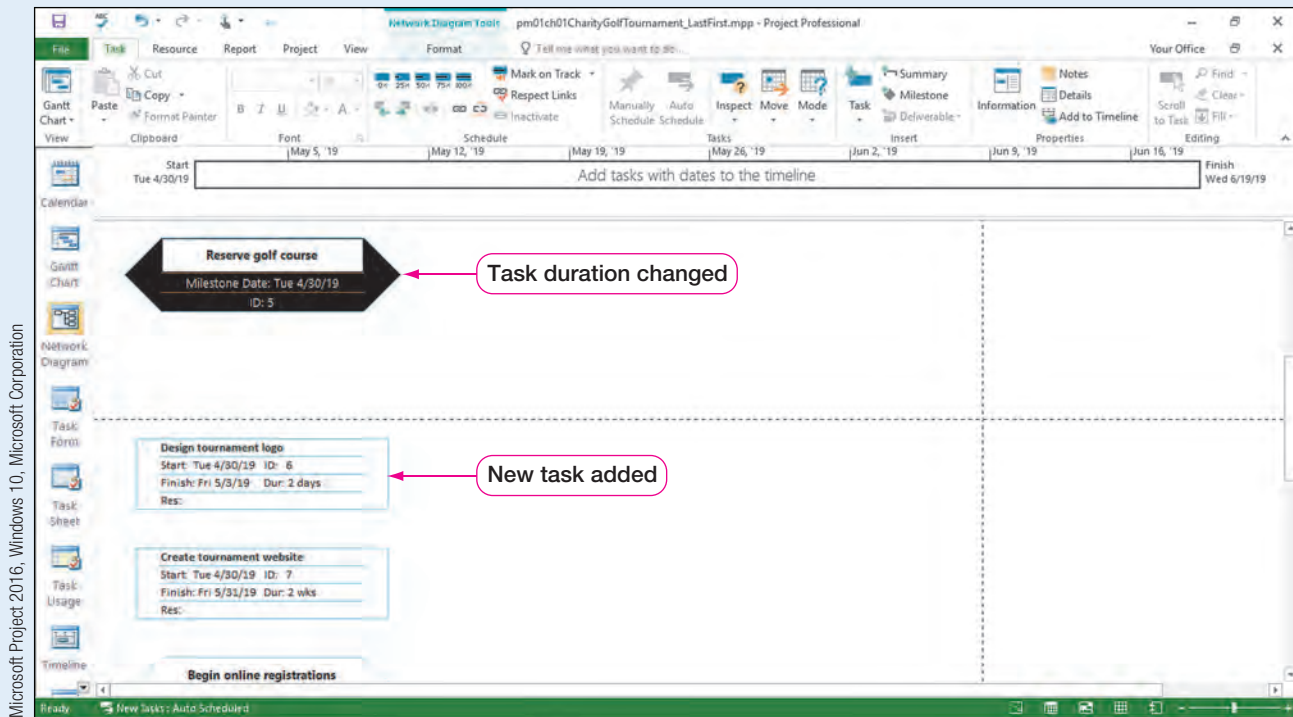




Figure 41 Network Diagram view with task additions and changes

- k. Click **Gantt Chart** on the View Bar to return to Gantt Chart view. Note the new tasks and the change in durations.
- l. Click **Design tournament logo** (Task 6). Click the **Gantt Chart Tools Format** tab, and then in the Columns group, click **Wrap Text**  twice.
- m. **Save**  the project.

SS CONSIDER THIS | How Can You Motivate Team Members?

Have you ever been a member of a team? How did your coach motivate you? Did your coach recognize team successes as they occurred? Project successes can be recognized by milestones. Therefore, milestones can help motivate the project team by recognizing project accomplishments.

Create Task Dependencies

When creating a project schedule, if you do not define task dependencies, all tasks will start on the project Start date or finish on the project Finish date. However, in most projects, tasks may be dependent on other tasks. Therefore, Project 2016 allows project planners to create task dependencies.

Task dependencies create predecessor tasks and successor tasks. For example, you could not begin a task of “begin online registrations” without first completing the task of “set tournament date and time.” In this case, “set tournament date and time” would be the predecessor task to “begin online registrations” (which then becomes the successor task).

Remember, project managers often use the terms relationship, dependency, or link when referring to how the predecessor or successor tasks are connected.



CONSIDER THIS | Why Create Task Dependencies?

Have you ever baked a cake? If so, then you know you need to purchase the ingredients before mixing them together; mix the ingredients together before pouring them into a pan; prepare the pan before pouring in the ingredients; heat the oven before putting the pan into the oven to bake, etc. Baking a cake is a project during which tasks are completed in a certain order. This order is defined by task dependencies.

There are four types of task dependencies in Project 2016, as shown in Table 4:


Type	Detail	Example
Finish-to-Start (FS)	Default. Task 1 must finish before Task 2 can start.	You must finish selecting the tournament date (Task 1) before beginning online registration (Task 2).
Start-to-Start (SS)	Task 1 must start before Task 2 can start.	As soon as the tournament website goes live (Task 1), you can start accepting online registrations (Task 2).
Start-to-Finish (SF)	Task 1 must start before Task 2 can finish.	You must start working on the tournament website (Task 1) before you can finish promotional materials (Task 2).
Finish-to-Finish (FF)	Task 1 must finish before Task 2 can finish.	You must finish accepting online registrations (Task 1) before you finalize the tournament supply list (Task 2).

Table 4 Task Dependencies

In Project 2016, task dependencies are recorded in the row for the second (successor) task. For example, if you are creating a dependency between “set the tournament date” (Task A) and “begin online registrations” (Task B), you record the dependency in the row for Task B.

Dependencies in the software are also often referred to as task relationships or task links. Project managers often use these terms interchangeably. If you are manually scheduling your project, you can still assign task dependencies. However, if manually scheduling, the task dependencies will not affect the project schedule.

There are several ways to create task dependencies to the default Finish-to-Start relationship:

- Select the tasks to be related in Gantt Chart, Network Diagram, or Calendar view, and then click the Link the Selected Tasks  button in the Schedule group on the Task tab as shown in Figure 42.
- Double-click a task in Gantt Chart, Network Diagram, or Calendar view, and then click the Predecessors tab. Enter in the task row(s) of the predecessor task(s), and then click OK.
- In Gantt Chart, Network Diagram, or Calendar view, click the predecessor task and drag to the successor task. Release the mouse and the tasks become linked.
- In Gantt Chart view, click the successor task to select the task. In the Predecessors column, enter the task row(s) of the related task(s), and then press **Enter**.
- Select the tasks to be related, and then press **Ctrl** + **F2**.

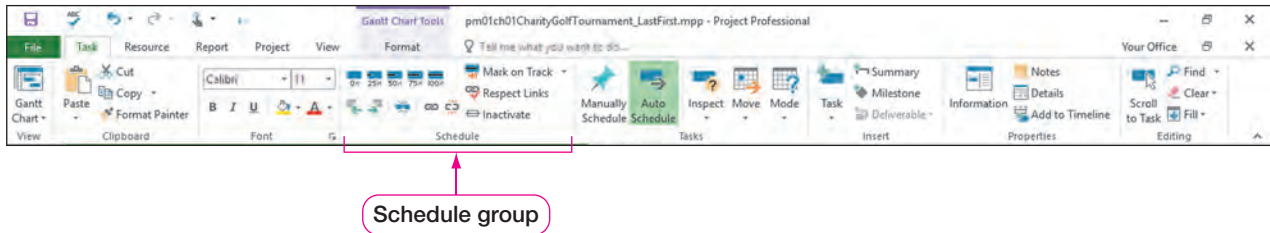


Figure 42 Task tab Schedule group

Microsoft Project 2016, Windows 10, Microsoft Corporation

Adding Task Dependencies

In order to create a more detailed and realistic project plan, you have been asked to create task dependencies for the tournament project tasks.

In this exercise, you will set task dependencies.

PM01.12

SIDE NOTE Task Relationships

Because the project is scheduled by Start date, the Finish-to-Start relationship between tasks 1 and 2 and the start date of task 2 changes.

To Set Task Dependencies

- In **Gantt Chart** view, move the split bar between the Gantt chart and the Entry table to the right edge of the Predecessors column by dragging the **split bar** to the right.
- Click and drag to select the Task Names **Set tournament objectives** (Task 1) and **Set tournament date and time** (Task 2).
- Click the **Task** tab, and then in the Schedule group, click **Link the Selected Tasks**. Linking Tasks 1 and 2 created a Finish-to-Start relationship. Notice the link line in the Gantt chart as well as the change to the Start date in Task 2. Also notice a “1” was added to the Predecessors column in Row 2.

Task Name	Duration	Start	Finish	Predecessors
1 Set tournament objectives	6 hrs	Tue 4/30/19	Wed 5/1/19	
2 Set tournament date and time	1 hr	Wed 5/1/19	Wed 5/1/19	1
3 Prepare preliminary budget	6 hrs	Tue 4/30/19	Wed 5/1/19	
4 Perform site	4 hrs	Tue 4/30/19	Tue 4/30/19	

Figure 43 Finish-to-Start relationship between Tasks 1 and 2

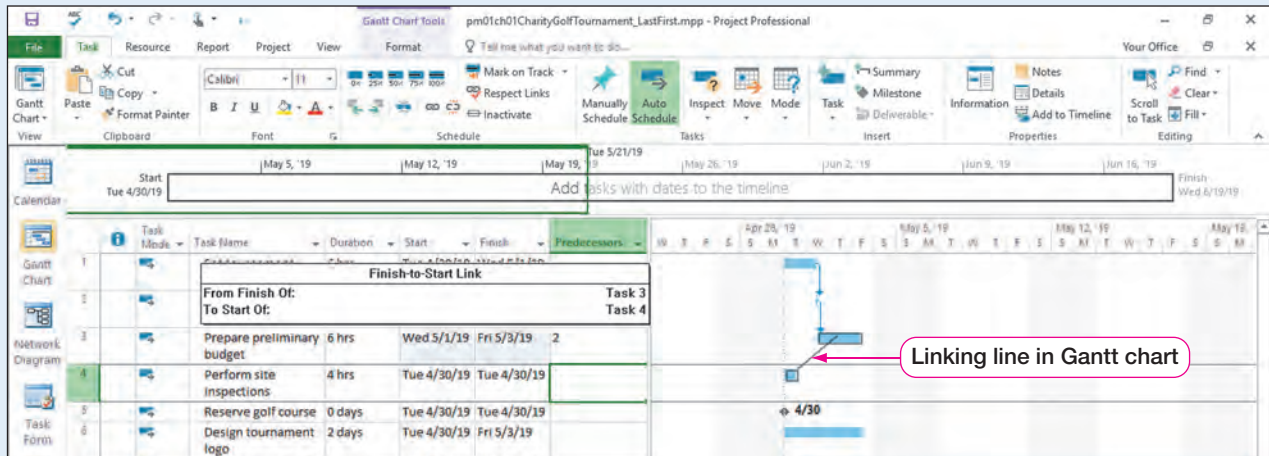
Microsoft Project 2016, Windows 10, Microsoft Corporation

- Click in the **Predecessors** column for **Prepare preliminary budget** (Task 3). Type **2**, and then press **Enter**. Task 2 becomes a predecessor of Task 3.

Troubleshooting

If you cannot see the Predecessor column in the Entry table, click and drag the split bar to the right.

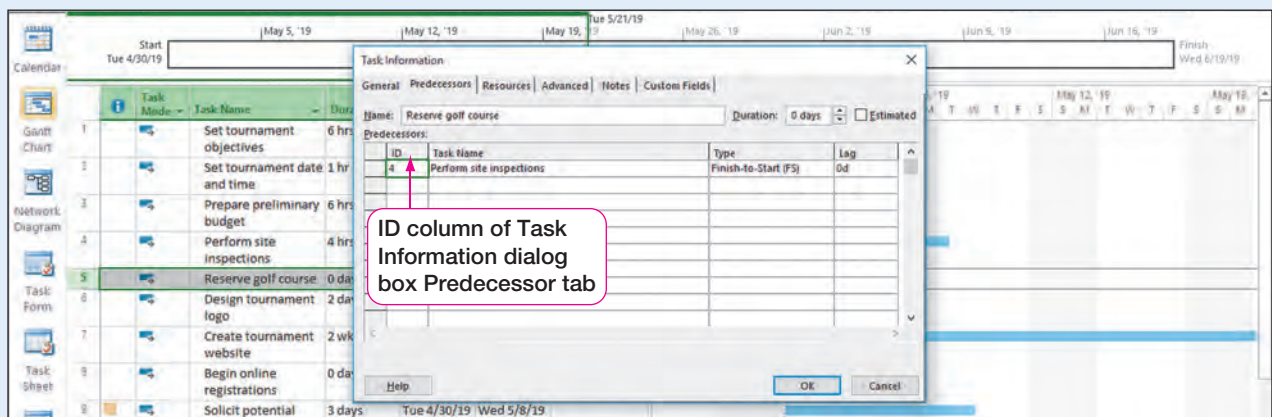
- e. In the Gantt chart on the right-hand side of your screen, click and hold the **Prepare preliminary budget** (Task 3) Gantt bar and then drag to the **Perform site inspections** (Task 4) Gantt bar.



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 44 Linking tasks in the Gantt chart

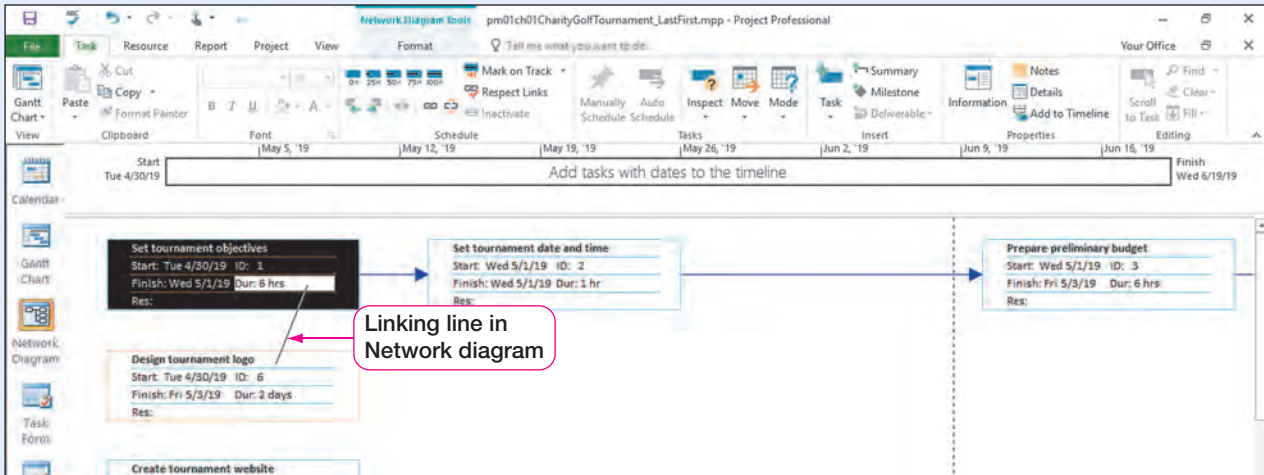
- f. Release the mouse button to create a relationship between Tasks 3 and 4.
- g. Double-click **Reserve golf course** (Task 5) to open the Task Information dialog box. Click the **Predecessors** tab. Click in the **ID** column of the first row of the Predecessors table. Enter a **4** in the ID column of the first row, and then press **Tab** to assign the predecessor of Task 4, **Perform site inspections**.



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 45 Assigning predecessors in the Task Information dialog box

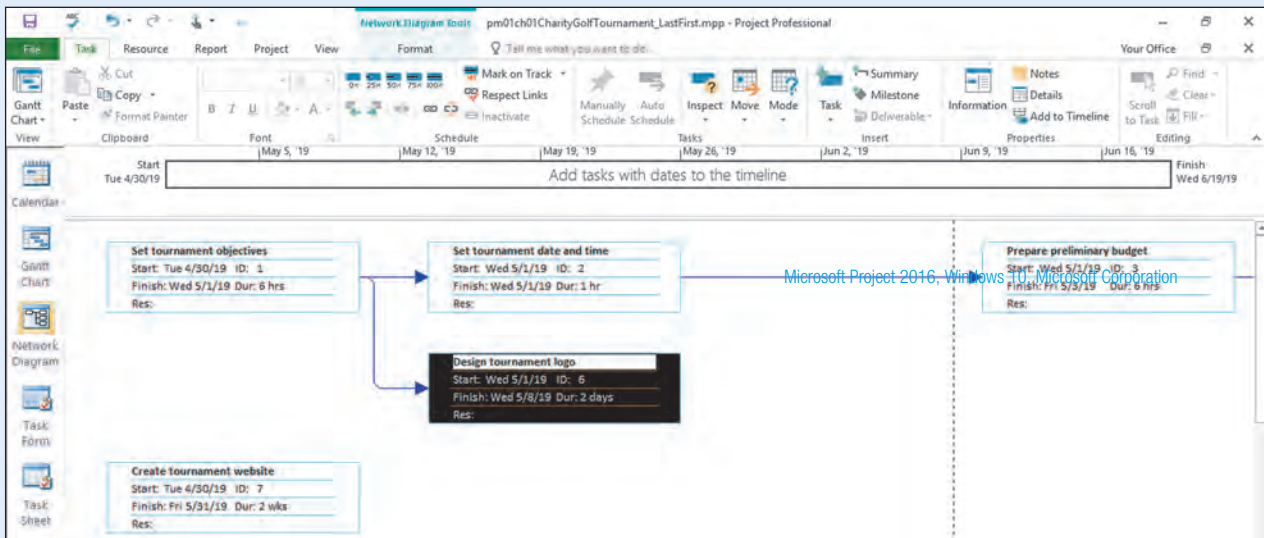
- h. Click **OK**, and then select Task 1, **Set tournament objectives**.
- i. On the View Bar, click **Network Diagram**. Click and hold **Set tournament objectives** (Task 1), and then drag to **Design tournament logo** (Task 6).



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 46 Linking tasks in Network Diagram view

- j. Release the mouse button to create a Finish-to-Start relationship between Task 1 and Task 6.




Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 47 Linked tasks in Network Diagram view

SIDE NOTE

Linking Tasks

When linking tasks in the Gantt chart, you will see the  Link the Selected Tasks symbol as you drag from one task box to the next.

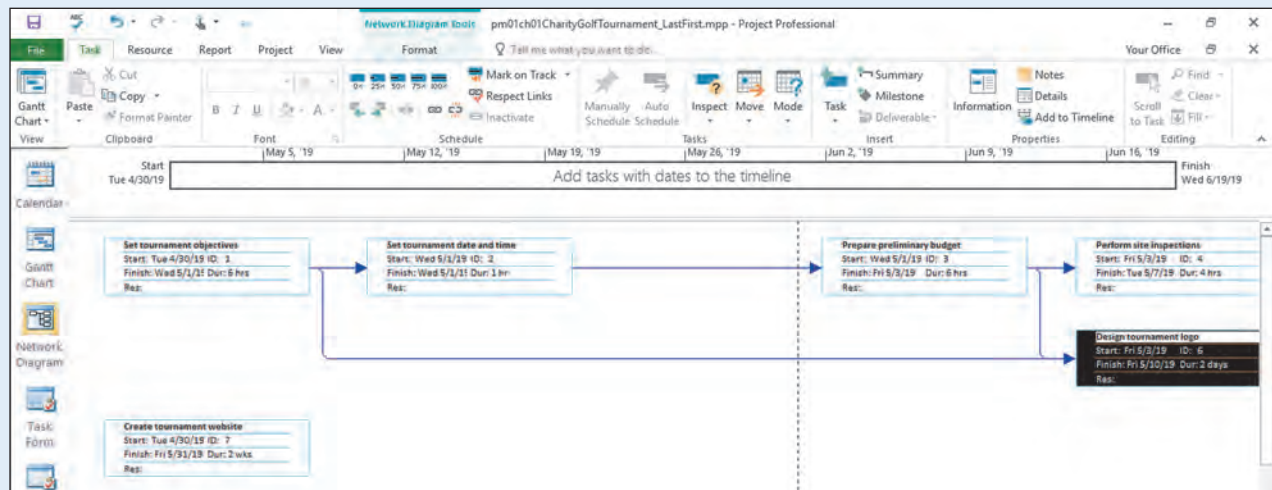
Troubleshooting

If you do not see the tasks in Network Diagram view you desire, you may need to scroll to the left or right to view the tasks. You can also click the Zoom button in the Zoom group on the View tab, and then select from the Zoom In or Zoom Out options.

SIDE NOTE**Scrolling to Task**

To view a task from the Entry table that is not visible in the Gantt chart, right-click the task, and then click Scroll to Task.

- k. Click and hold **Prepare preliminary budget** (Task 3) and drag to **Design tournament logo** (Task 6). Tasks 3 and 6 now have a Finish-to-Start relationship.




Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 48 Network Diagram view with tasks linked

SIDE NOTE**Dragging to Link Tasks**

If you selected Task 7 and dragged to Task 6, the relationship would have a different result than selecting Task 6 and dragging to Task 7.

- l. Click **Calendar view**  in the View Bar. Click and hold **Design tournament logo** (Task 6), and then drag to **Create tournament website** (Task 7).

Troubleshooting

If you do not see the tasks you are looking for in Calendar view, be sure your Calendar is showing the correct month in which your project tasks are scheduled. You may need to change the Calendar to Week view and expand the Week view and scroll to the week of May 1, 2019.

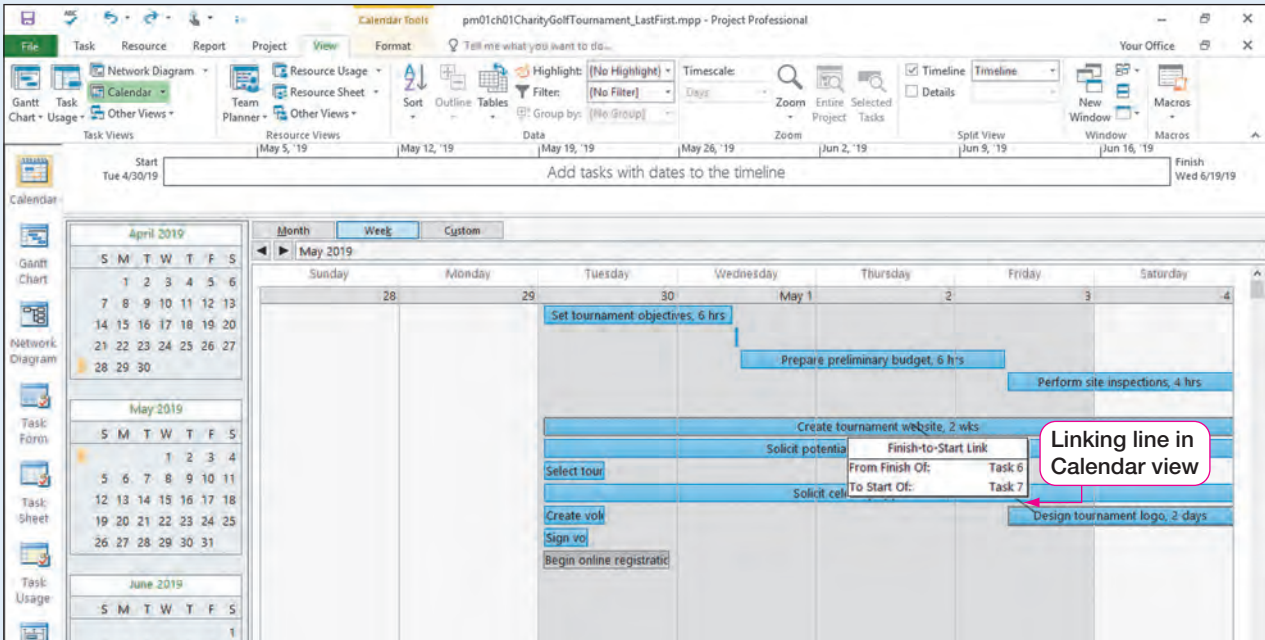


Figure 49 Linking tasks in Calendar view

SIDE NOTE

Selecting Tasks

When you select more than one row in an Entry table, the selected tasks will be shaded.

- m. Release the mouse button to create a relationship between Tasks 6 and 7.
- n. Return to **Gantt Chart** view. Select **Tasks 7-13** by selecting the task row selectors. Press **Ctrl + F2** to link the selected tasks. All task relationships are now defined.

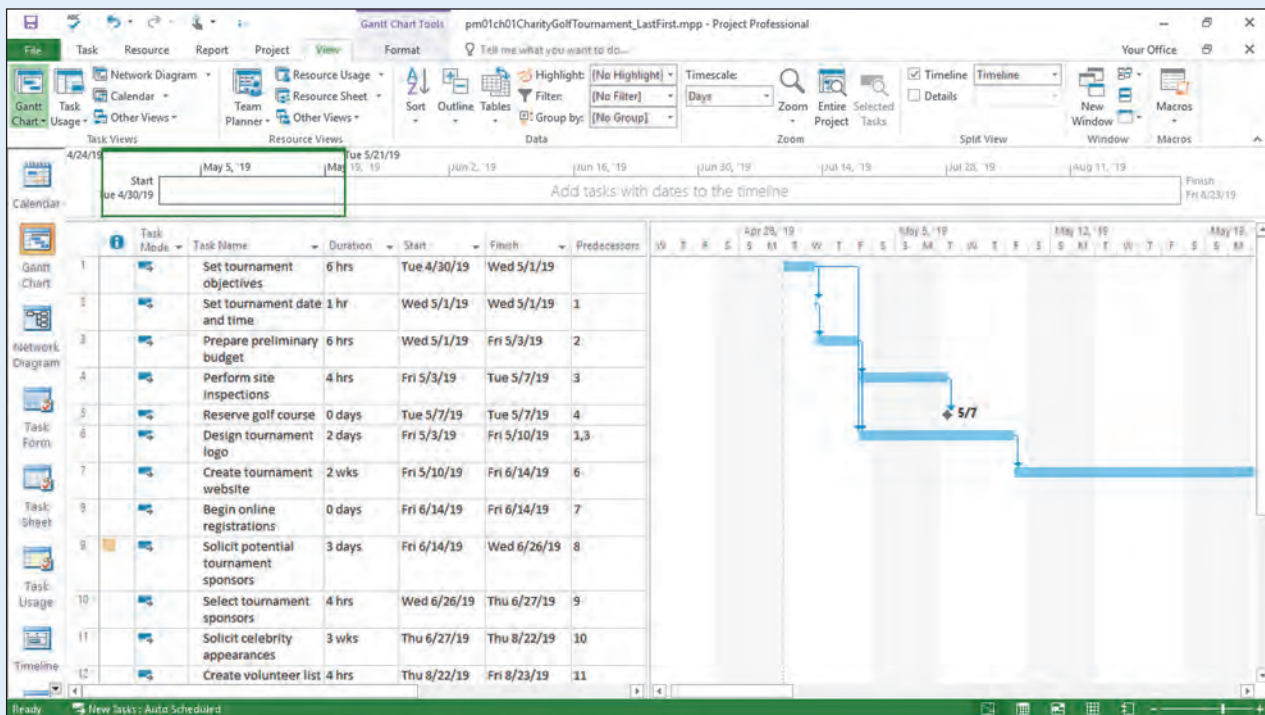


Figure 50 Gantt Chart view with task relationships defined

- o. Click **Save**

Modify Task Dependencies and Task Constraints

Although setting task relationships and task constraints is an important part of the planning process, it is equally important for project managers to evaluate the task relationships and constraints to be sure the results are logical. Therefore, Project 2016 allows project managers to modify, add, or delete task relationships and task constraints throughout the planning process. Task constraints can be modified by using the Task Information dialog box Advanced tab.

Task relationships can be added, deleted, or modified in the following ways:

- Using the Predecessors column of Gantt Chart view
- Using the Task Information dialog box Predecessors tab
- Double-clicking the link line in Gantt Chart and Network Diagram views and using the Task Dependency dialog box

Although a project may be set to Auto Scheduled, ultimately the project manager of the project has control over the scheduling of tasks. For example, a project manager can add, delete, or change task relationships to adjust the project schedule. A project manager can also add task constraints such as constraint deadlines, constraint types, and/or constraint dates to further control how tasks are being scheduled.

Modifying Dependencies and Constraints

After reviewing the project schedule, you want to make a few adjustments to the way the tasks are being scheduled. You will add a deadline to a task to ensure the task is completed on or before a certain date. You will also change a task's constraint type and change a task relationship.

In this exercise, you will modify task dependencies and task constraints.

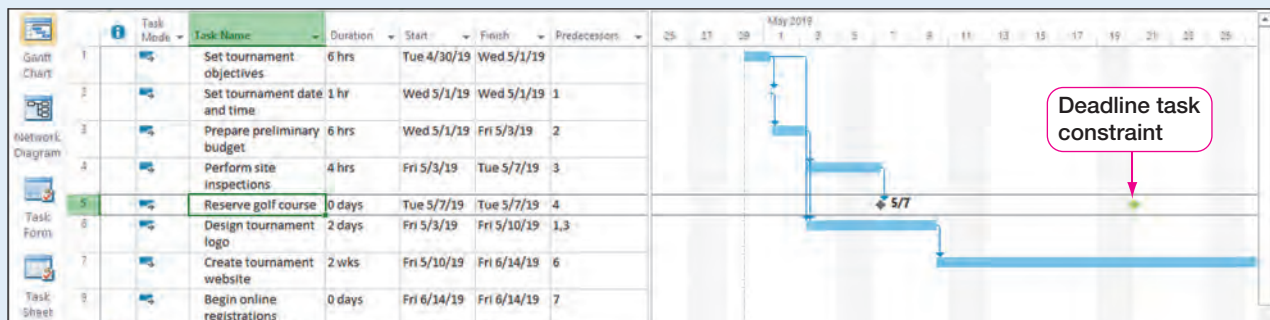
PM01.13

SIDE NOTE Task Constraints

Changing the constraint from As Late As Possible to As Soon As Possible allows the task to begin once its predecessor tasks are complete.

To Modify Task Dependencies and Task Constraints

- Double-click **Reserve golf course** (Task 5), and then click the **Advanced** tab in the Task Information dialog box.
- Click in the **Deadline** box, and then type **5/20/2019**. Click **OK**. Note that the Green arrow indicator on the Gantt chart indicates the task must finish by this date.



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 51 Modified task constraint

- c. Select **Create volunteer list** (Task 12). If necessary, right-click the task, and then click **Scroll to Task** to view the task and its predecessor in the Gantt chart.
- d. Press **[Ins]** to add a blank task row. Type **Schedule celebrity appearances** for the task name. Press **[Tab]**, type **1w**, and then press **[Tab]**. Press **[Tab]** two more times, type **11** in the Predecessor column, and then press **[Enter]**.
- e. Select **Create tournament website** (Task 7). Right-click the task, and then click **Scroll to Task** to view the task and its predecessor in the Gantt chart.
- f. In the Gantt chart, double-click the **link line** between Tasks 6 and 7 to open the Task Dependency dialog box.

SIDE NOTE

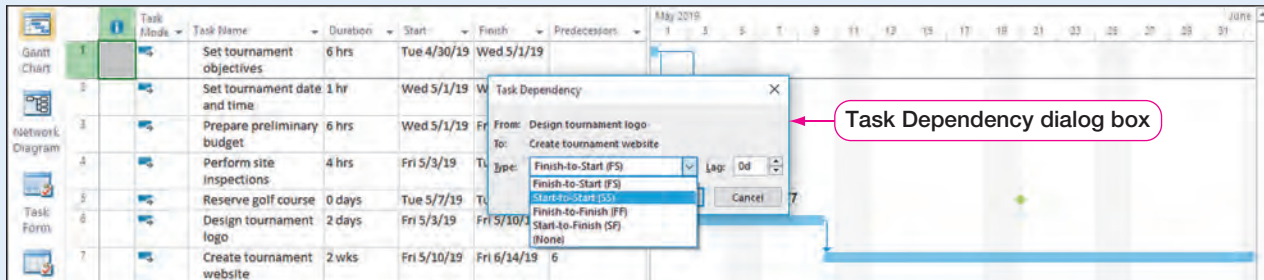
Changing Dependencies

You can also type in a task dependency in the Predecessor column such as 6SS.

Troubleshooting

If you have difficulty determining which link line is between Tasks 6 and 7, zoom in on the Gantt chart.

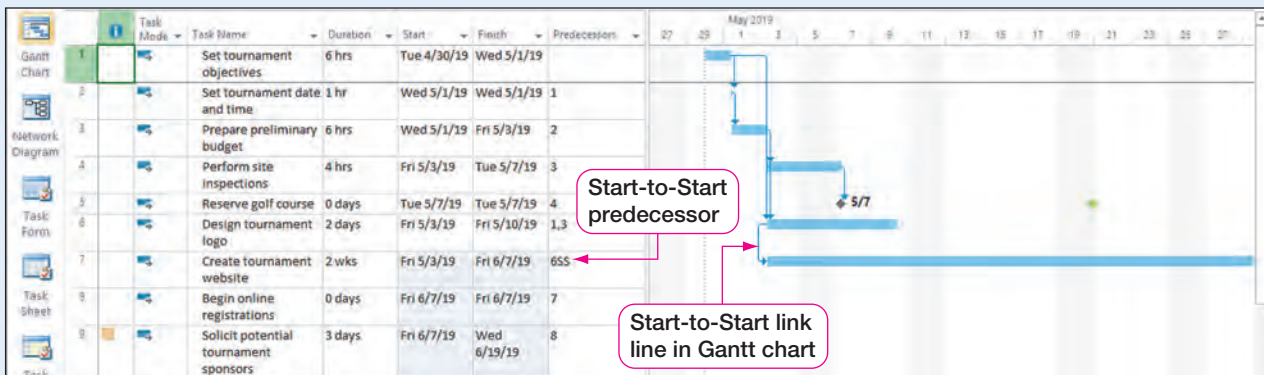
- g. In the Task Dependency dialog box, click the **Type** arrow. Click **Start-to-Start**.



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 52 Task Dependency dialog box

- h. Click **OK**.



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Figure 53 Start-to-Start task dependency set

- i. Select **Sign volunteer contracts** (Task 14). Press **[F2]** on the keyboard to enter Edit mode. Select the word "Sign" and then type **Mail** to rename the task "Mail volunteer contracts." Press **[Enter]** to accept the change.
- j. Double-click **Begin online registrations** (Task 8). Click the **Advanced** tab.

- k. Click the **Constraint type** arrow, and then select **Start No Earlier Than**. In the Constraint date box, type **6/21/19**. Click **OK**. Notice how this constraint changed the scheduled finish date of the project. Also, note the Constraint indicator in the Indicators column.

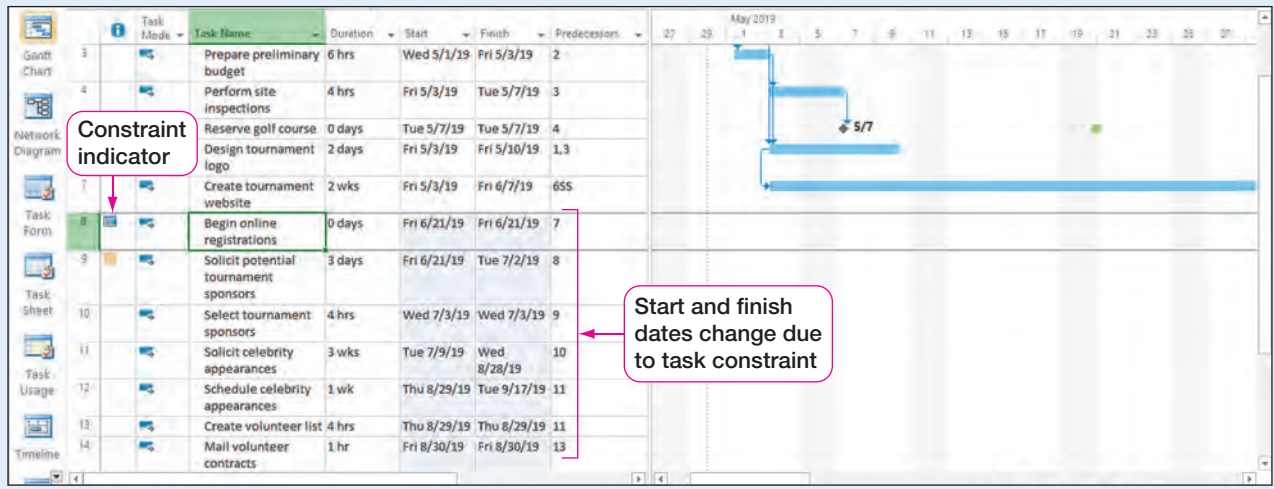


Figure 54 Constraint indicator

Microsoft Project 2016, Windows 10, Microsoft Corporation

- l. Save  the project.

If a project is scheduled by Start date, another way to modify task dependencies is to create lag time or lead time. **Lag time** moves a successor task forward in time so the Start dates between the tasks become further apart. **Lead time** moves a successor task back in time so the two tasks overlap and the Start date between the tasks gets closer. Lead time is the opposite of lag time and is sometimes referred to as negative lag. Lag time will likely extend the length of the project.

REAL WORLD ADVICE

Using Lag Time in a Project

In projects, some tasks can be assigned to begin past the task's original assigned start date by adding a lag time. For example, a task "website goes live" may have a successor task of "analyze website traffic" with a Start-to-Start relationship. Although you can start analyzing website traffic at the start of the website going live, it makes sense to wait a week or two before you begin analyzing data. In this case, you would add lag time to the dependency. Adding lag time to tasks on the critical path will increase the overall project's duration. Lag time can be added by:

1. Double-clicking the link line between tasks in the Gantt chart or the Network Diagram.
2. In the Task Dependency dialog box, entering a duration in number or percentage format.

Adding Tasks to the Timeline

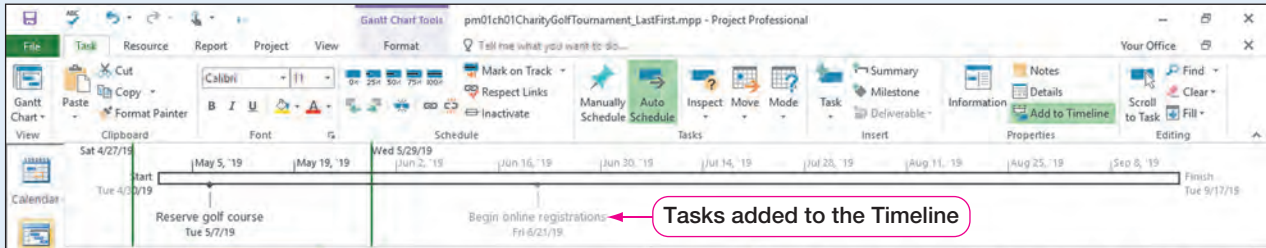
A timeline is used to display tasks, such as milestone tasks, in a simple compact format. The timeline can be used to display a summary of project plans. Timelines can also be shared with other Microsoft applications such as Microsoft PowerPoint 2016.

In this exercise, you will add tasks to the Timeline.

PM01.14

To Add Tasks to the Timeline

- Click **Reserve golf course** (Task 5), and then on the Task tab, in the Properties group, click **Add to Timeline**.
- Click **Begin online registrations** (Task 8), and then on the Task tab, in the Properties group, click **Add to Timeline**.



Microsoft Project 2016, Windows 10, Microsoft Corporation

Figure 55 Project Timeline

- Save the project.

Deleting Task Dependencies

After linking tasks and setting task dependencies, you may decide a dependency is no longer needed or was created in error. Project 2016 allows you to not only modify task dependencies but also delete task dependencies.

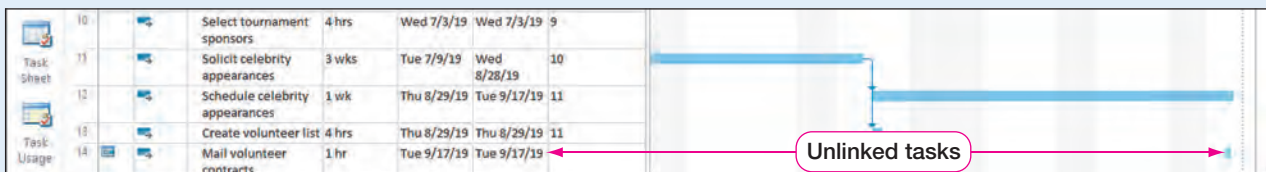
You realize the scheduling of these tasks does not work with your project plan, so you explore ways of adjusting how these tasks are scheduled.

In this exercise, you will modify task dependencies and task constraints.

PM01.15

To Delete a Task Dependency

- Double-click **Mail volunteer contracts** (Task 14).
- On the Task Information dialog box, click the **Advanced** tab.
- Type a Constraint date of **9/17/2019**, and then click **OK**.
- On the Task tab, in the Schedule group, click **Unlink Tasks**. Note the task Start date did not change because a Constraint date has been set on the task.



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Figure 56 Gantt Chart view with unlinked task

- Save the project.

Prepare Project for Printing Project Views

Various views can be printed in Project 2016. Prior to printing, it is important to set up the project view to the appropriate zoom, include any header or footer information, and be sure all printing options are set the way you desire. Printing options are found on the File tab in Backstage view. **Backstage view** is where you manage your project file and perform tasks such as saving, printing, and setting project options. In Backstage view, you can preview each page layout before printing. You can also view the status of your project and make related project changes in Backstage view. Backstage view displays in full screen to allow for more window space to work with relevant features.

When printing in Gantt Chart view, the printout will appear as it looks on your screen. For example, if you only want to print the Task Name column and the Gantt chart, move the split bar to the right edge of the Task Name column with a left click and drag before printing. If the split bar is in the middle of a column, Project will not print that column. The default is for a legend to appear in the bottom portion of each page in Gantt Chart view.

When printing in Network Diagram view, you may want to zoom in to view fewer tasks or zoom out to view more tasks. When printing from Calendar view, you should decide if you want to print a month calendar or a week calendar. If neither option fits your needs, you can customize a Calendar Print option.

A header or footer can be added to all views in Project 2016. However, adding a header in Gantt Chart view does not add a header to Calendar view. If you desire a header on Calendar view or Network Diagram view, you will need to add one in each view by clicking on the Page Setup link in the Backstage view Print option.

Preparing to Print in Gantt Chart View

You want to print the Gantt chart to show the team the charity golf tournament project plan you have started. Before printing, you will prepare your project views by adding your name to the header in the Gantt Chart view.

In this exercise, you will prepare to print in Gantt Chart view.



To Prepare for Printing in Gantt Chart View

- a. Drag the **split bar** between the Entry table and the Gantt chart to the right edge of the Finish date column in Gantt Chart view.

Troubleshooting

If your screen does not display a column you want to print when you are in Backstage view, make sure the entire column is visible in Gantt Chart view. Project will not print a column if the split bar is even slightly covering the column.

- b. Click the **File** tab, and then click **Print**. Your project will appear in the Preview pane on the right side of the screen.

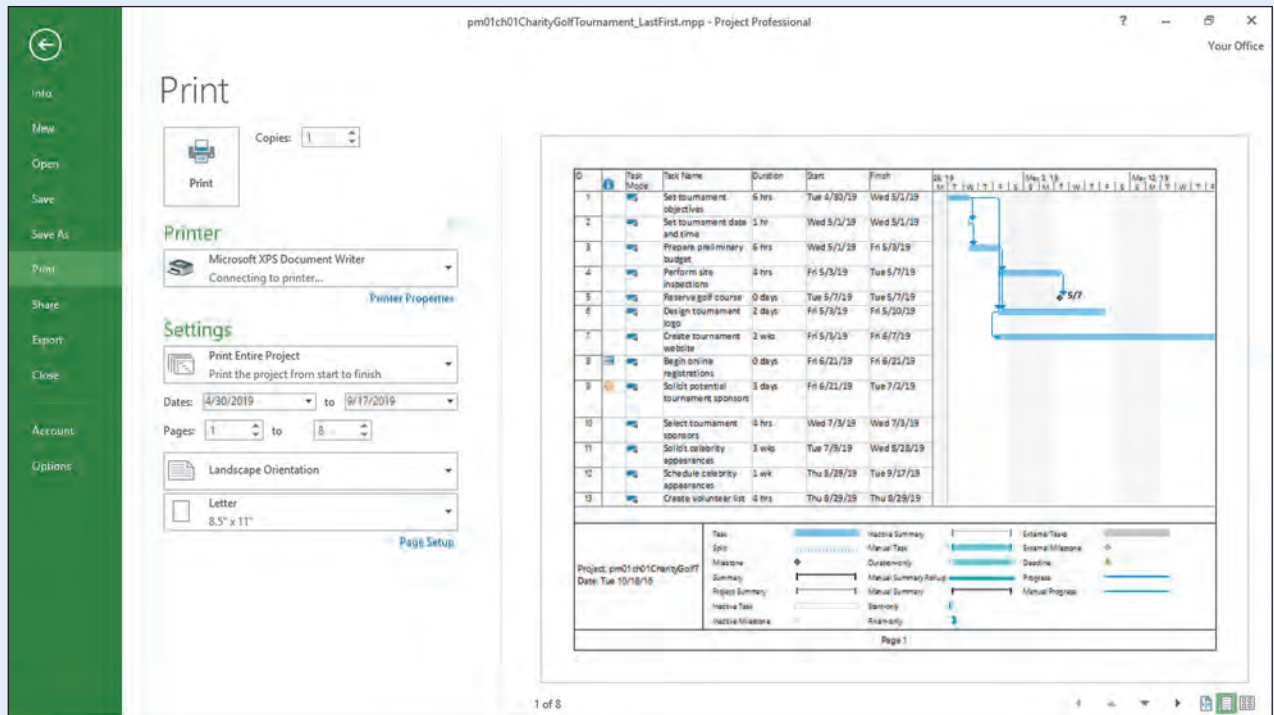



Figure 57 Gantt Chart in Preview pane

Troubleshooting

The printer displayed in the Printer list is determined by your installation and may be different than the printer shown in Figure 57.

- c. Click in the Preview pane on the right-hand side of the Project 2016 window. The preview will zoom so you can see more detail.
- d. Click the **Multiple Pages**  button in the lower, right-hand corner of the Preview pane to view all pages of Gantt Chart view.

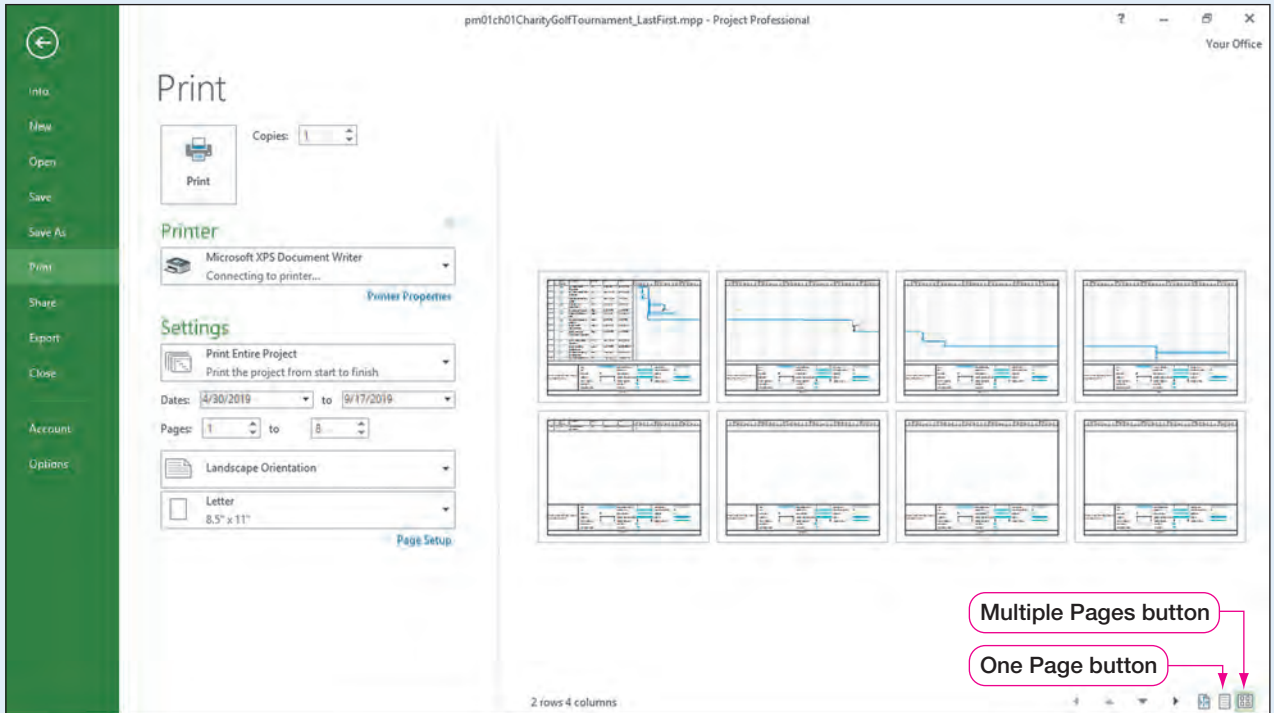


Figure 58 Preview pane navigation buttons

- e. Click the **Page Setup** link. The Page Setup dialog box will open.
- f. Click the **Header** tab. Click the **Right** tab, and then type your first and last name.

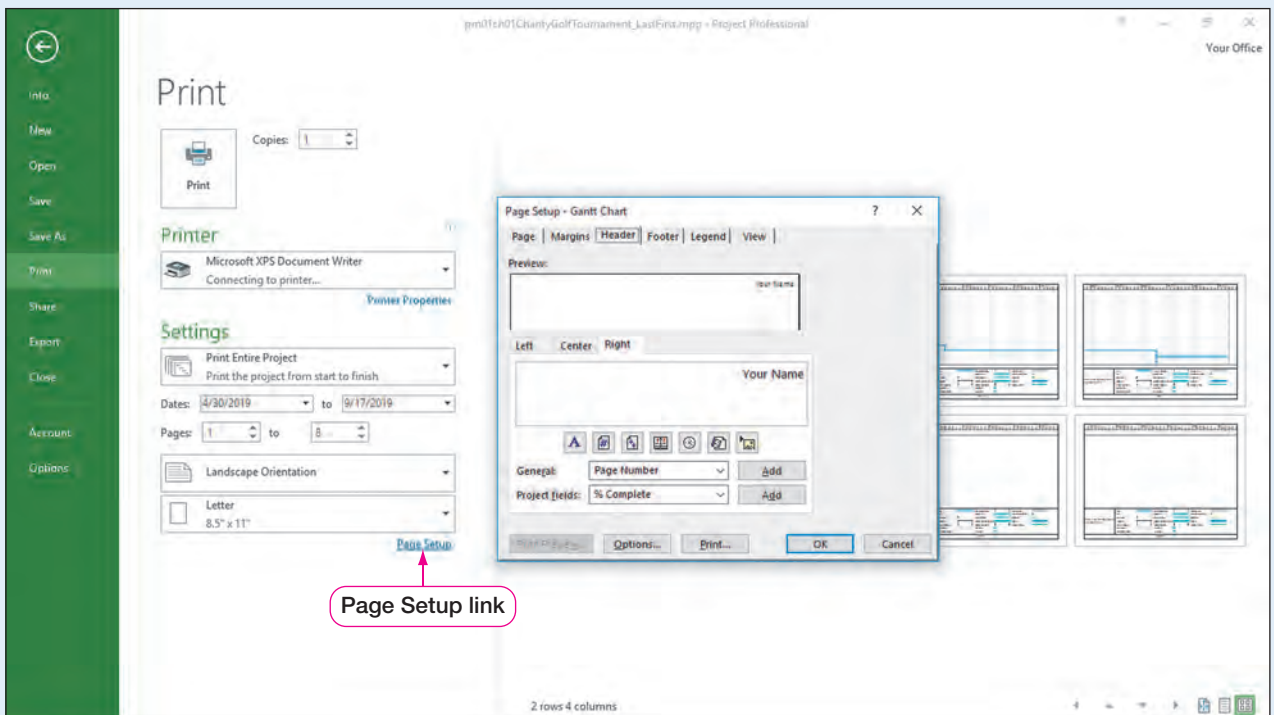



Figure 59 Page Setup dialog box

Microsoft Project 2016, Windows 10, Microsoft Corporation

Microsoft Project 2016, Windows 10, Microsoft Corporation

- g. Click **OK**.
- h. Click the **One Page** button  in the lower right-hand corner of the Preview pane to view one page of the Gantt chart along with your change to the header.

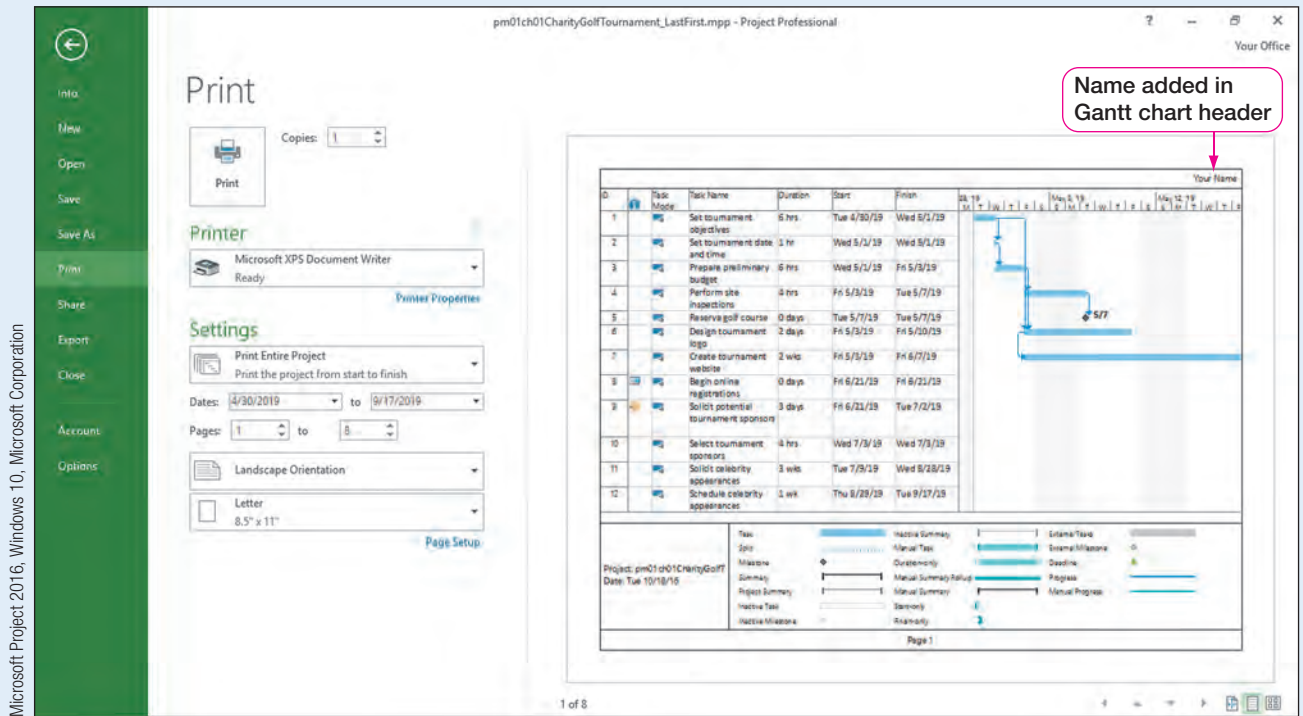




Figure 60 Preview pane with header added

- i. Click **Back** , and then **Save**  the project.


Preparing to Print in Calendar View

You may also want to print from Calendar view to give your team members a visual representation of what will happen week to week. Before printing, you will prepare Calendar view by adding your name to the header and setting up the Calendar to print week by week.

In this exercise, you will prepare to print in Calendar view.

PM01.17

To Prepare for Printing in Calendar View

- a. Click **Calendar**  on the View Bar.
- b. Click the **File** tab, and then click **Print**.
- c. Click the **Page Setup** link, and then click the **Header** tab. Click the **Right** tab, and then type your first and last name. Click **OK**.
- d. To view the project tasks, click the **list arrow** for the starting date.

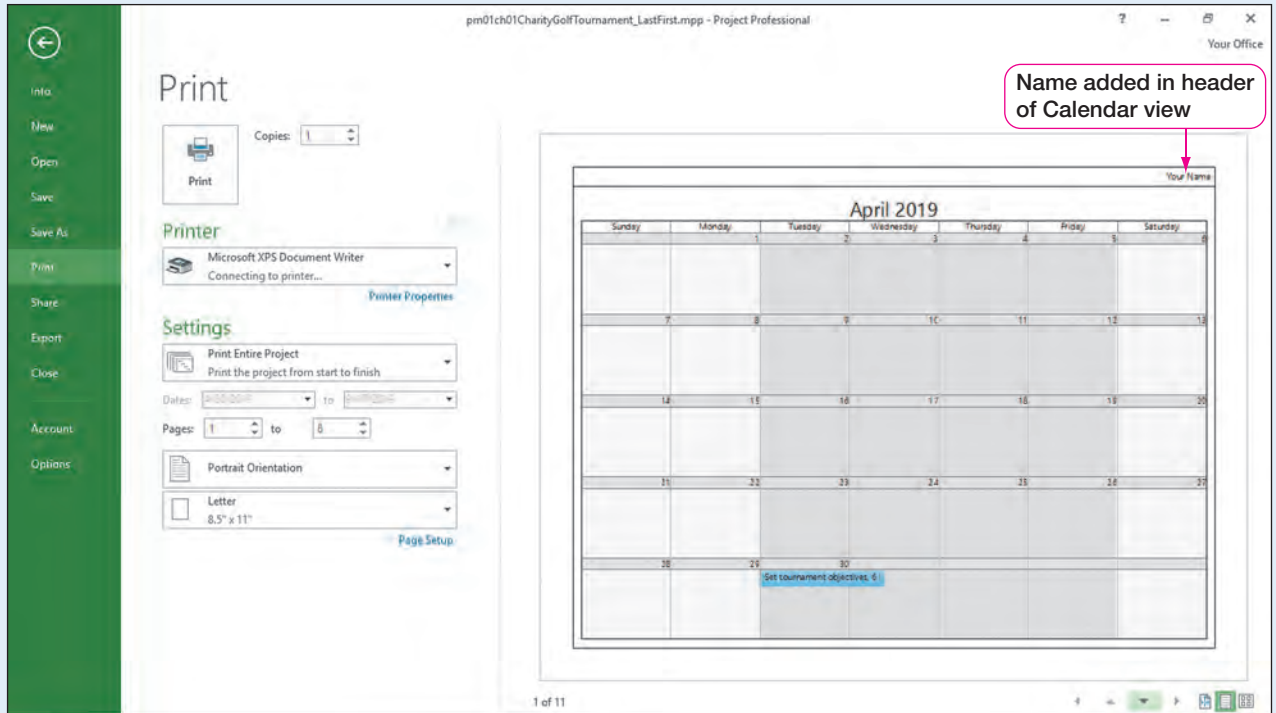




Figure 61 Preview pane with header added in Calendar view

- e. Click **5/20/2019**.

Troubleshooting

If you only see the month of April, use the view buttons in the lower right-hand corner of the preview window to scroll to the month of May in the preview pane.

- f. Click **Back** .
- g. **Save**  the project.


Preparing to Print in Network Diagram View

One of your team members has asked for a printout of the project's task to be in a graphical format, not in Calendar or Gantt Chart format. Therefore, you decide to print the project tasks in Network Diagram view.

In this exercise, you prepare the Network Diagram view to print.

PM01.18

To Prepare for Printing in Network Diagram View

- On the View Bar, click **Network Diagram**  view.
- Click the **File** tab, and then click **Print**.
- Click the **Page Setup** link, and then click the **Header** tab. Click the **Right** tab, and then type your first and last name. Click **OK**.
- Click the **Landscape Orientation** arrow, and then click **Portrait Orientation**.

- e. Use the **Page Navigation** buttons  to scroll through the pages that will print. Note the shape of the milestone tasks in the Network Diagram.

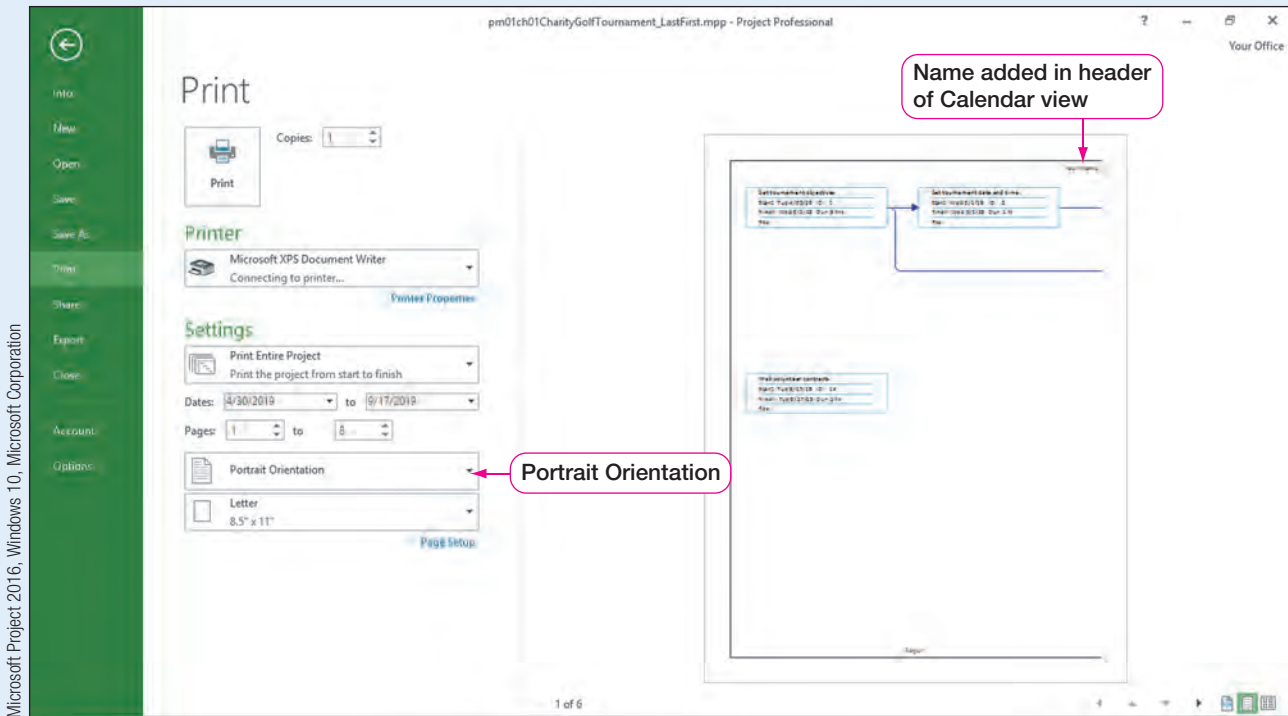




Figure 62 Preview pane with header added in Network Diagram view Portrait and Orientation

- f. Click **Back** .
- g. **Save**  the project, exit Project 2016, and then submit your file as directed by your instructor.

Concept Check

1. Explain the following terms to someone new to Project 2016 software:
 - a. Predecessor task
 - b. Successor task
 - c. Constraint
 - d. Milestone
2. What is the purpose of a Gantt chart?
3. Describe the components of the Project Information dialog box.
4. Why is it important for a project's base calendar to accurately reflect the available working time of a project?
5. Describe the difference between a Manually Scheduled and an Auto Scheduled project.
6. List the task durations and task duration abbreviations in Project.
7. How can a Note be applied to a task? When would a Note be applied to a task?
8. Describe at least three ways you can add task dependencies.
9. Describe at least three ways you can change a task dependency between tasks.
10. How do you add your name to the header of the Gantt chart?

Key Terms

24 Hours calendar 10	Manually Scheduled 18	Split bar 5
Auto Scheduled 18	Material resource 3	Standard calendar 10
Backstage view 45	Milestone 3	Start date 9
Baseline 10	Network Diagram view 32	Status date 10
Calendar view 29	Night Shift calendar 11	Successor task 3
Constraint 3	Nonworking day 6	Task 3
Cost resource 3	Note 20	Task dependency 3
Critical path 32	Predecessor task 3	Task duration 3
Critical task 32	Project goal 2	Task Information 20
Current date 10	Project Information dialog box 9	Task Mode column 6
Entry table 5	Project management 2	Task Name column 6
Finish date 9	Project manager 2	Timeline 5
Gantt chart 3	Quick Access Toolbar 6	Timescale 6
Gantt Chart view 5	Resource 3	View Bar 6
Indicators column 6	Row selector 5	Work resource 3
Lag time 43	Scope 3	
Lead time 43	Select All 5	

Visual Summary

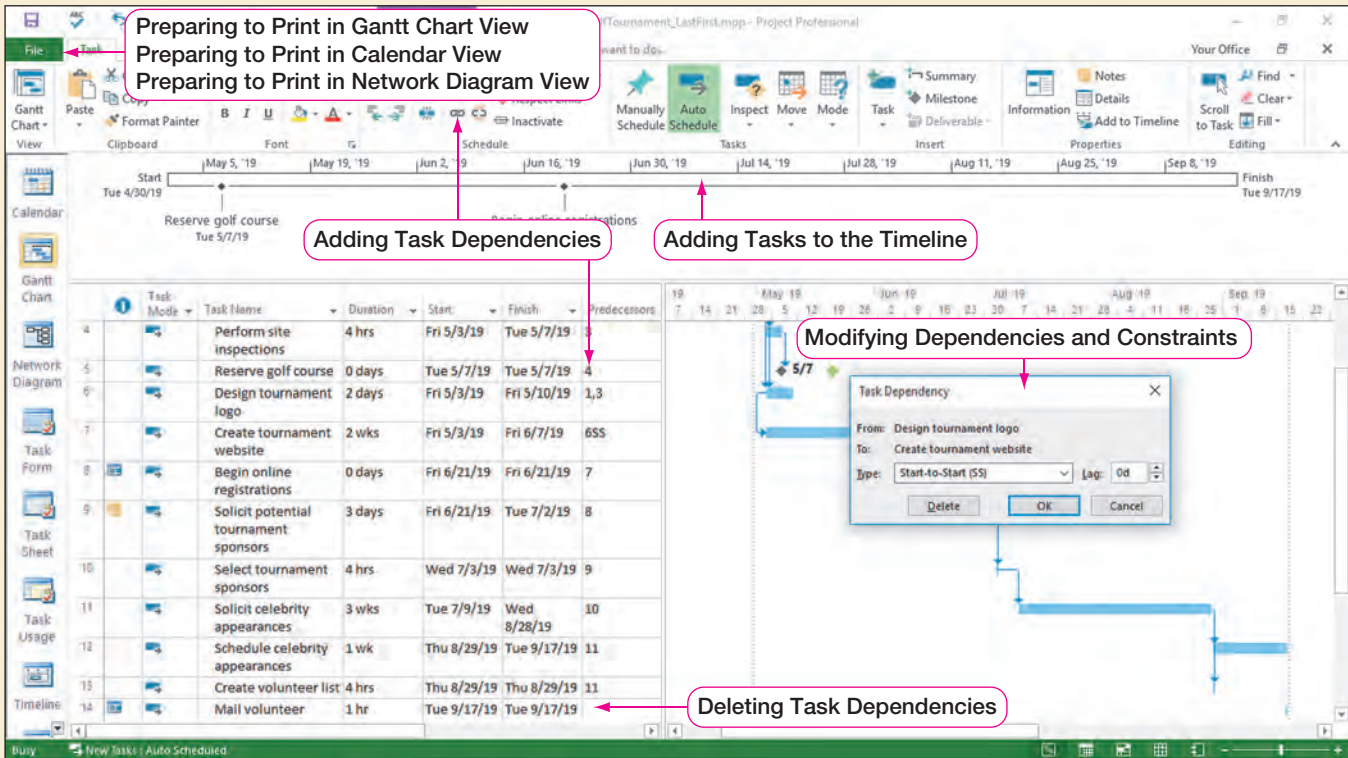
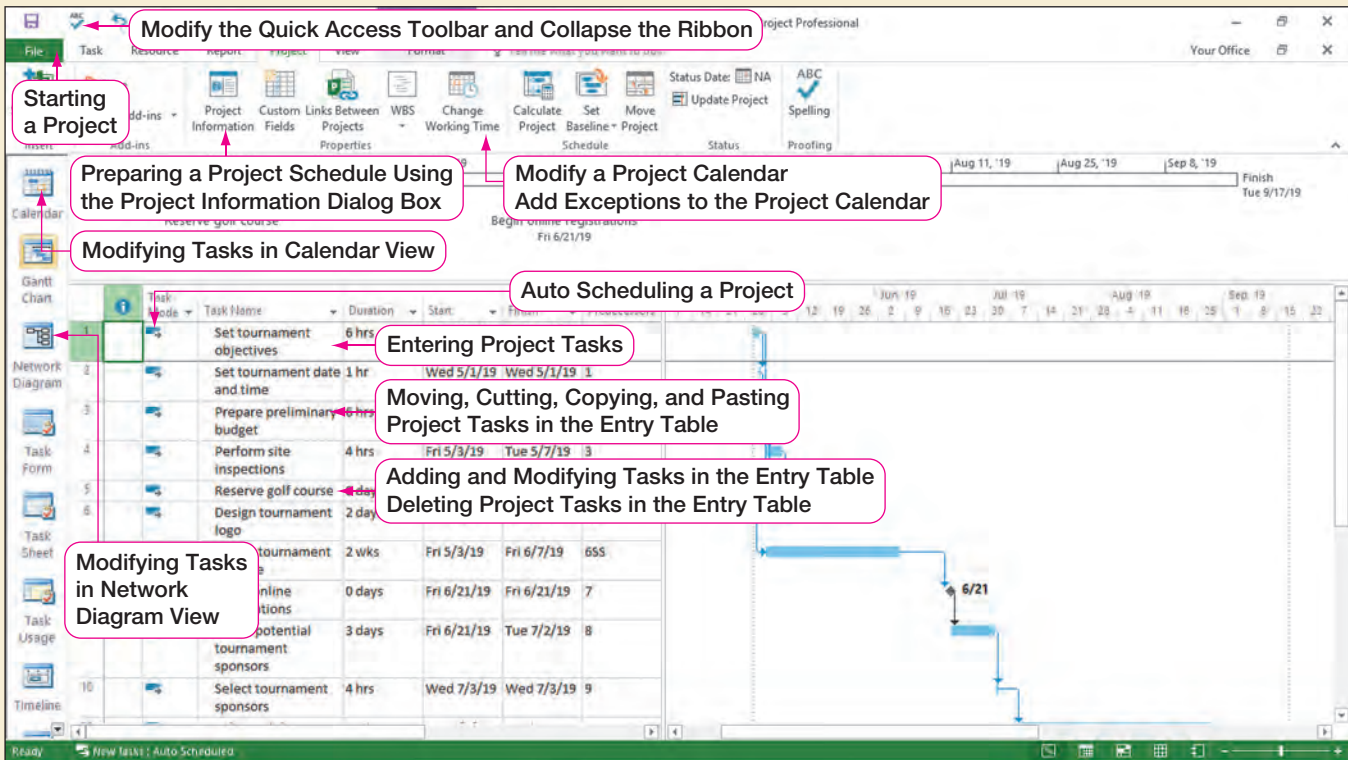




Figure 63

Student data file needed:

No data file needed

You will save your file as: pm01ch01BloodDrive_LastFirst.mppInformation
Technology**Organizing a Blood Drive at Your Community College**

You have been asked by the student senate to be the project lead of a blood drive at your school to promote a cause that saves millions of lives each year. To demonstrate your project management skills, you decide to use Project 2016 to set up the plan for the blood drive. The senate would like to hold the blood drive in October. They note that the campus will be closed on September 27, 2019. You decide to use Project 2016 to help determine a date for the blood drive. You are available to work on the planning of this project Wednesday through Friday, 8:00 AM to 12:00 PM.

- Open a **Blank Project**. Click the **File** tab, and then click **Save**. Click **Browse**, and then navigate to the location where you are saving your files. Click in the **File** name box, type **pm01ch01BloodDrive_LastFirst.mpp** using your last and first name, and then click **Save**.
- Click the **Project** tab, and then in the Properties group, click **Project Information**. Set the Start date to **August 29, 2019**. Click **OK**.
- On the Project tab, in the Properties group, click **Change Working Time** . Click the **Work Weeks** tab, and then click **Details**. Select **Monday** and **Tuesday**. Click **Set days to nonworking time**.
- Click **Wednesday**, press and hold **⇧ Shift**, and then click **Friday**. Click **Set day(s) to these specific working times**. Select row 2 in the specific working times grid. Press **Del** to clear the 1:00 PM to 5:00 PM working times. Click **OK**.
- Click the **Exceptions** tab in the Change Working Time dialog box. Enter the exception name **College closed for inservice**, and then press **Tab**. Click in the Start column in row 1. Change the start date in row 1 to September 27, 2019, and then press **Tab**. Click **OK**.
- Click the **Task** tab. In the Tasks group, select the Mode arrow, and then click **Auto Schedule**.
- Be sure the View Bar is showing on the left-hand side of your screen. (Hint: If the View Bar is not showing, right-click GANTT CHART on the left-hand side of your screen, and then click View Bar from the shortcut menu.)
- If necessary, add the **Timeline** below the ribbon. (Hint: If the Timeline is not showing, click the **View** tab, and then in the Split View group, click Timeline.)
- Enter the following tasks and durations into the Entry table:


	TASK NAME	DURATION
1	Select blood drive campus location	4h
2	Set blood drive goal	1h
3	Form a recruitment team	2d
4	Divide team roles and duties	2h
5	Plan promotional strategies	4h
6	Publicize the blood drive	1d
7	Schedule appointments	2w
8	Check site arrangements	4h
9	Get visitor parking passes	2h
10	Email appointment reminder messages	4h
11	Post directional arrows and posters around campus	1h

- j. On the Quick Access Toolbar, click the Spelling button to check the spelling of the task names.
- k. Click **Publicize the blood drive** (Task 6). Press **[Ins]** to add a blank task. With the new blank task selected, add the task name **Create promotional materials**. Assign this task a duration of **5 hours**.
- l. Click the row selector of **Get visitor parking passes** (Task 10). While holding the mouse, drag Task 10 after Email appointment reminder messages (Task 11). Release the mouse. Get visitor parking passes is now moved to become Task 11.
- m. Click **Publicize the blood drive** (Task 7). Click the **Task** tab, if necessary, and then in the Insert group, click **Task**  to add a new task. Enter the task name **Contact local businesses**, and then add the duration of **6 hours**. Task 7 is now Contact local businesses.
- n. Double-click **Contact local businesses** (Task 7) to open the Task Information dialog box. Click the **Notes** tab. Type **Contact the webmaster to place blood drive info on college website**. Click **OK**.
- o. Click the **File** tab, and then click **Print**. Click the **Page Setup** link, and then click the **Header** tab. Click the **Right** tab, and then type your first and last name. Click **OK**.
- p. Click the **Back** button  to exit Backstage view and return to Gantt Chart view. Click **Network Diagram**  on the View Bar. Click **Post directional arrows and posters around campus** (Task 13). Click the **Task** tab, if necessary, and then in the Insert group, click **Task**  to add a new task in Network Diagram view.
- q. Double-click the new task, and then type the task name **Blood drive begins**. Type a duration to **0 days** to make this task a milestone task. Click **OK**. Note the shape of the Milestone task in the Network Diagram view.
- r. With Blood drive begins (Task 13) selected, in the Properties group of the Task tab, click **Add to Timeline**. The milestone is now added to the Timeline.
- s. Click **Gantt Chart**  on the View Bar to switch to Gantt Chart view.
- t. Move **Blood drive begins** (Task 13) after **Post directional arrows and posters around campus** (Task 14) to make it the final project task.
- u. Select **Tasks 1-14**. Click **[Ctrl] + [F2]** to link all the tasks.
- v. Select **Schedule appointments** (Task 9), and then change the duration from 2 weeks to **20h**.
- w. Change the relationship to a **Start-to-Start** relationship between Schedule appointments (Task 9) and Check site arrangements (Task 10).
- x. Click **Email appointment reminder messages** (Task 11). On the Task tab, in the Properties group, click the **Information**  button to open the Task Information dialog box. Click the **Advanced** tab. Add the Constraint date **October 9, 2019**.
- y. Select the task names. Click the **Format** tab. In the Columns group, click **Wrap Text** twice.
- z. Save your **pm01ch01BloodDrive_LastFirst** project file, exit Project 2016, and then submit your file as directed by your instructor.

Student data file needed:

 No data file needed

You will save your file as:

 pm01ch01JobSearchPortfolio_LastFirst.mpp



Planning Your Job Search Portfolio

You will be graduating in May 2019 from your program of study at your local community college. You decide it is time to start preparing for your job search portfolio. Due to other school obligations, you can only dedicate 10 hours a week to work on your portfolio. To stay on task, you will work two hours per day Monday through Friday. You have afternoon classes, so you will set 8:00 AM to 10:00 AM as working time. The remainder of the days and times will be set to nonworking time. You begin brainstorming a list of tasks, and you realize there are many tasks that need to be completed. To be sure you don't miss an important step, you decide to use Project 2016 to help you organize and keep track of your task list.

- a. Open a blank Project 2016 file, and then save it as **pm01ch01JobSearchPortfolio_LastFirst.mpp** in the location where you store your files.
- b. Since you are just starting your portfolio, you will leave the default schedule of Project Start Date. Set the Start date to **February 1, 2019**.
- c. Change the project calendar to set working time to Monday through Friday, 8:00 AM to 10:00 AM. The remainder of the days and times will be set to nonworking time.
- d. Add the exception **Spring Break** to set March 11–15, 2019, as nonworking days.
- e. Set the project to Auto Scheduled so the task dates are calculated by Project 2016.
- f. Enter in the following tasks:



	TASK	DURATION
1	Purchase portfolio supplies	2 h
2	Get an unofficial transcript	4 h
3	Identify references	1 w
4	Write resume	6 h
5	Create a resume in PDF format	2 h
6	Write a cover letter	3 h
7	Conduct online job search	5 d
8	Gather work examples for portfolio	10 h
9	Conduct a mock interview	3 h
10	Send resumes to potential employers	2 h
11	Compile portfolio	4 h

- g. Select **Create a resume in PDF format** (Task 5). Add a note to Task 5 **Use a PDF resume for online applications**.
- h. With Task 5 still selected, in a Project 2016 view of your choice, add a new task **Edit resume** with a duration of **2 hours**. The Edit resume task becomes Task 5.
- i. Move Write a cover letter (Task 7) after Conduct online job search (Task 8). The Write a cover letter task becomes Task 8.
- j. Add the task note **Contact Career Resource Center**. to Gather work examples for portfolio (Task 9). Click **OK**.
- k. Change the duration of Identify references (Task 3) to 8 hours.

- l. In Gantt Chart view, move the split bar to the right edge of the Predecessors column. Link Tasks 1–12 in the order they appear in the Entry table.
- m. If the Timeline is showing, remove it from Gantt Chart view.
- n. Hide the View Bar.
- o. Hide the Task Mode column. (Hint: Right-click the Task Mode column.)
- p. Add your first and last name as a header on the right tab of Gantt Chart, Network Diagram, and Calendar views. Change the Calendar view to Week. Return to Gantt Chart view.
- q. Save your project, exit Project 2016, and then submit your file as directed by your instructor.

Critical Thinking

Why are exceptions added to a project’s calendar? What could be the result to a project’s schedule if exceptions were omitted from the Project calendar?

Perform 1: Perform in Your Life

Student data file needed:



No data file needed

You will save your file as:



pm01ch01BusinessPlan_LastFirst.mpp

Preparing a Business Plan

You have decided to start a virtual assistant business in which you work from your home offering office-related assistance and software solutions to local businesses. In order to secure funding for your business, you must prepare a detailed business plan. You decide to use Project 2016 to help organize the details of preparing your business plan. Your goal is to have the business plan completed by July 1, 2019. Based on your knowledge of preparing a Project 2016 file, you will:

- a. Determine if you will set your project to schedule by Start date or by Finish date. As directed by your instructor, explain why you chose Start date or Finish date.
- b. Adjust the Standard calendar for a work week maximum of 20 hours of working time. Any combination of days and hours is acceptable. Add a minimum of one exception to the calendar.
- c. As directed by your instructor, explain the adjustments made to the calendar and detail any exceptions to the calendar.
- d. Determine whether you want your project to be Auto Scheduled or Manually Scheduled. As directed by your instructor, explain how you set Project 2016 to schedule your project and why you chose that method.
- e. Research preparing a business plan. There is more than one way to prepare a business plan. (Hint: Open Excel 2016, and in the Search box, type business plan.) You will use Project 2016 to enter a list of tasks you would need to complete to prepare your virtual assistant business plan. You must list a minimum of ten key tasks to preparing a business plan. For example, Step 1 (Task 1) may be “Define business vision.”
- f. After identifying a minimum of ten key steps to preparing a business plan, determine task durations based on your research and/or knowledge of preparing a business plan. Take into consideration your time available to work on the tasks as well.
- g. Create appropriate task relationships (dependencies) for the project tasks. Assign a relationship other than Finish-to-Start to at least one task. As directed by your instructor, explain why you selected the task relationships for the project tasks.

- h.** Add at least one task constraint. As directed by your instructor, explain why you added the constraint and how it affects the project plan.
- i.** Add your first and last name as a header in Gantt Chart, Network Diagram, and Calendar views. Save your project as **pm01ch01BusinessPlan_LastFirst.mpp** in the location where you store your files.
- j.** Exit Project 2016, and then submit your file as directed by your instructor.