

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

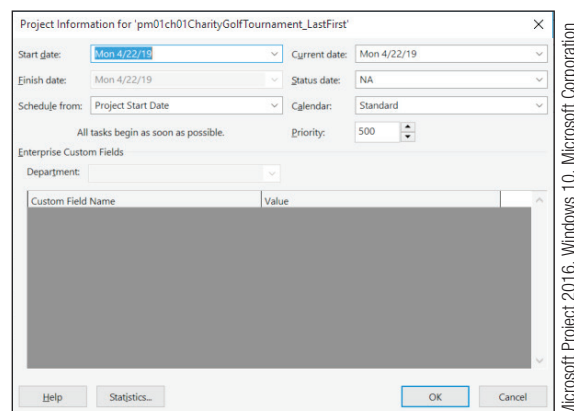


Figure 9 Project Information dialog box

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.

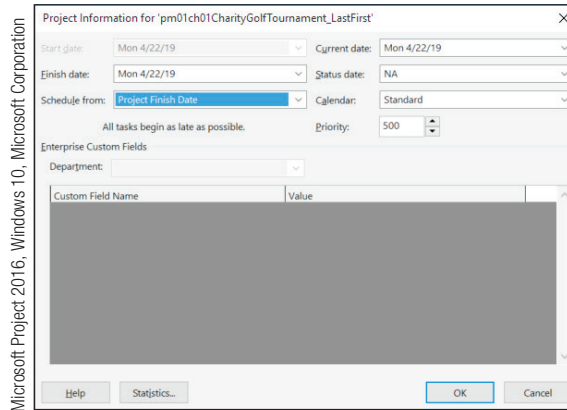


Figure 10 Project Scheduled by Finish date



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.

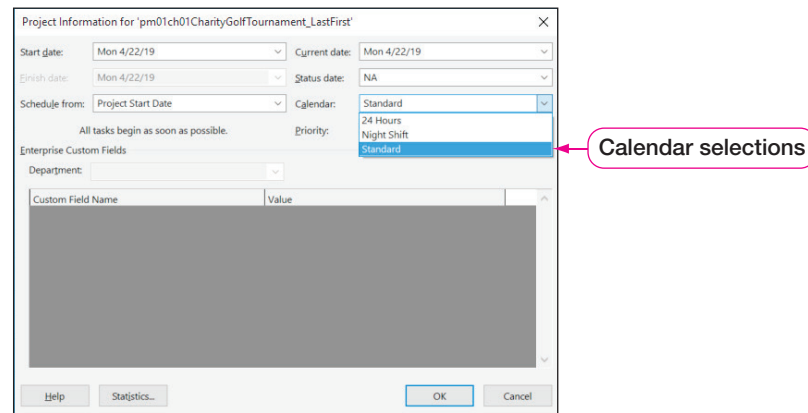
The **Current date** is today's date as determined by your computer's clock. The current date can be changed by entering a new date in the Current date section of the Project Information dialog box or by clicking the arrow for Current date and selecting a new date.

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.



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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.

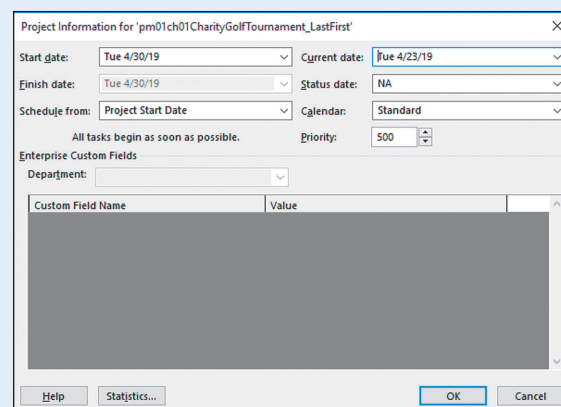
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SIDE NOTE Selecting a Start Date

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**.



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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.

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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.

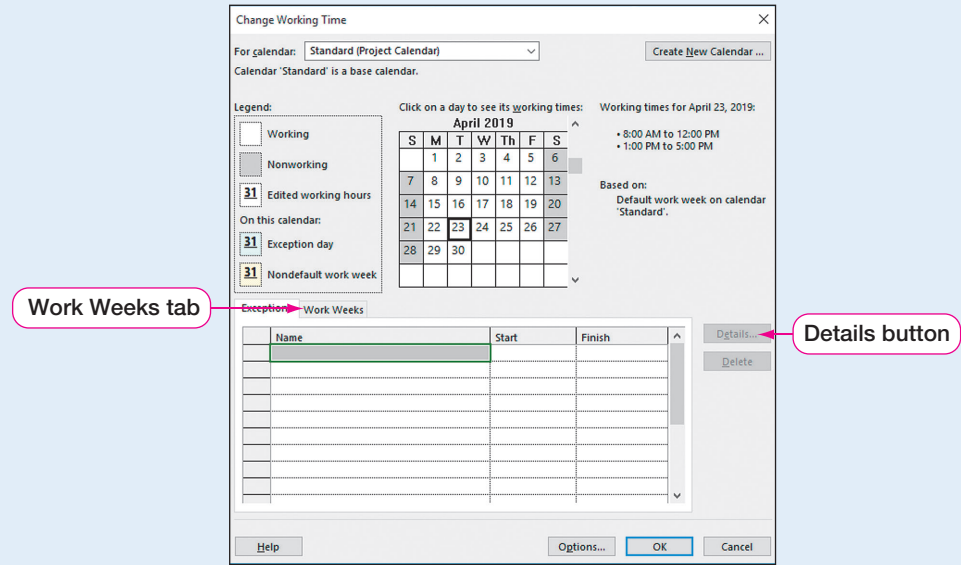


Figure 13 Change Working Time dialog box

- 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.

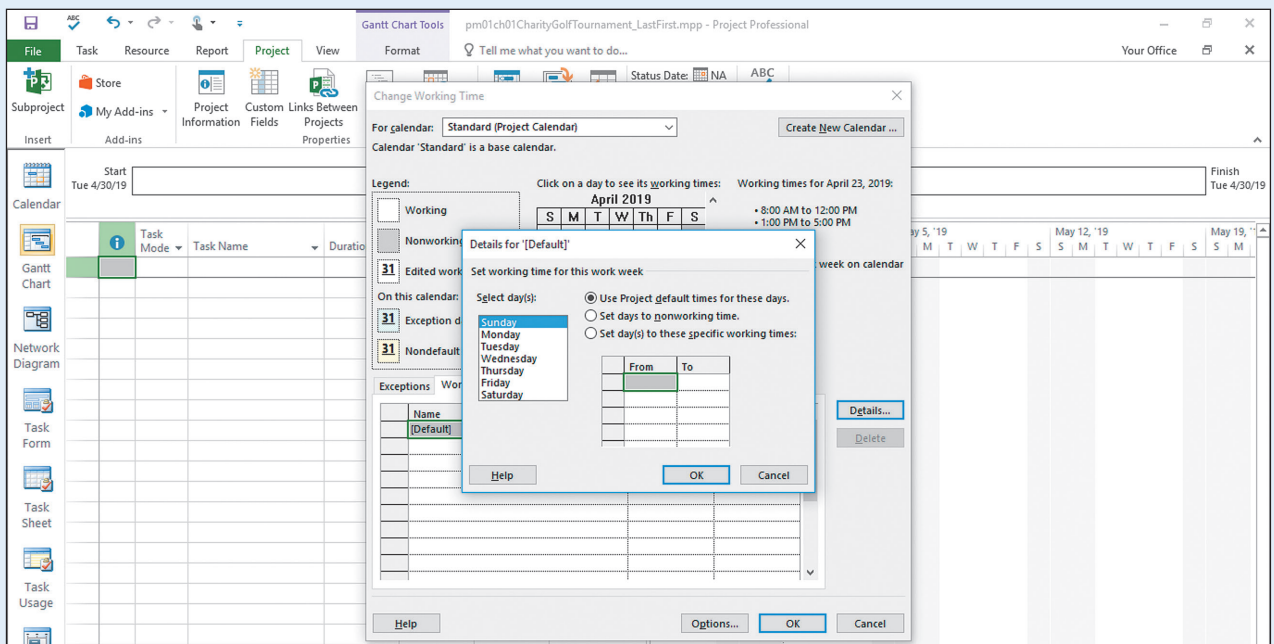


Figure 14 Calendar Details dialog box

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

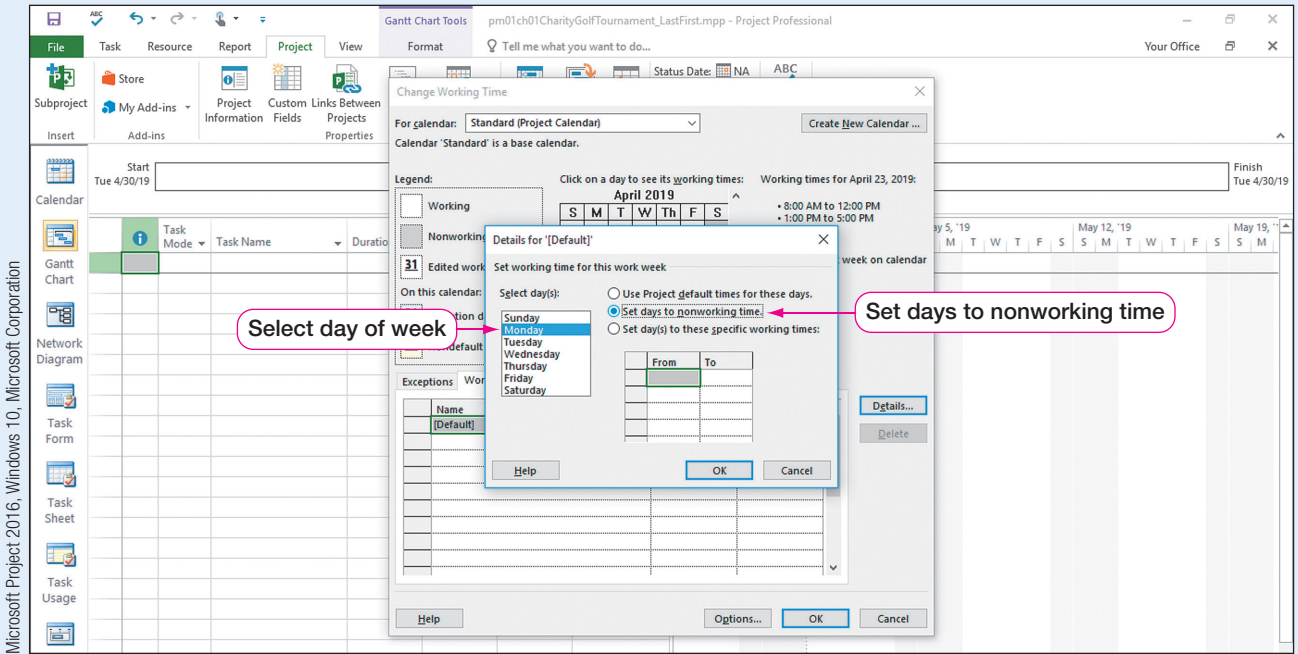


Figure 15 Mondays set to nonworking days

- 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.

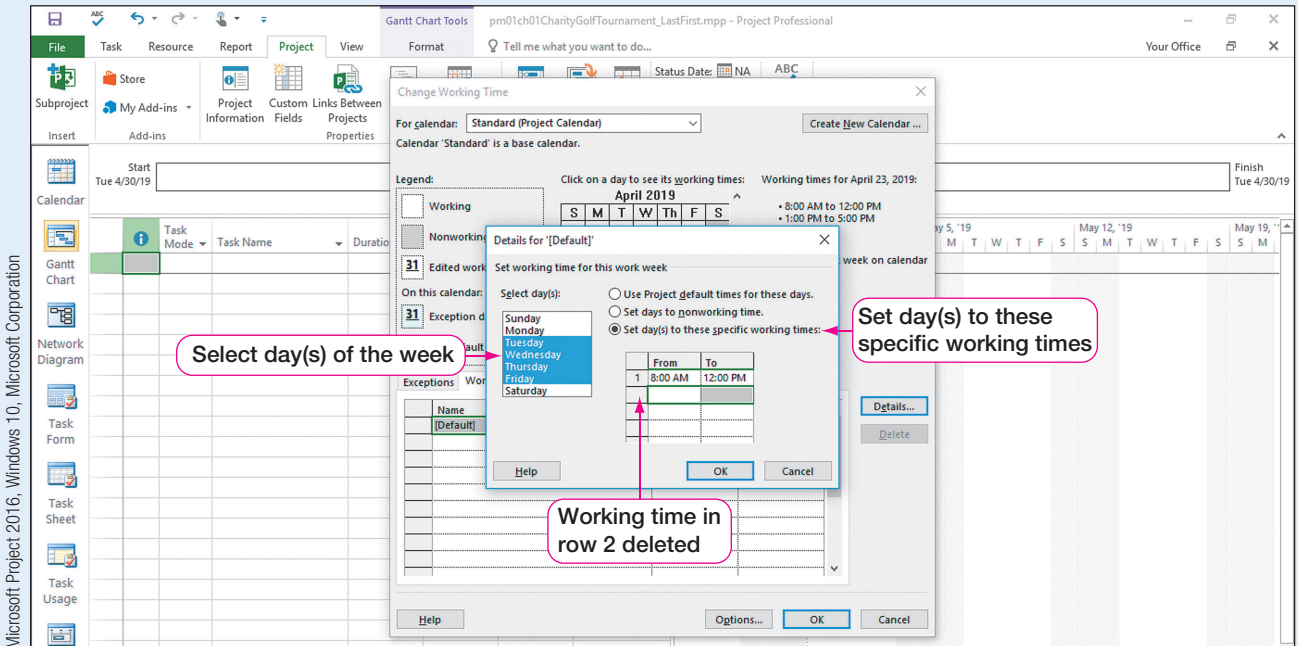


Figure 16 Specific working time for days of the week

- 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.

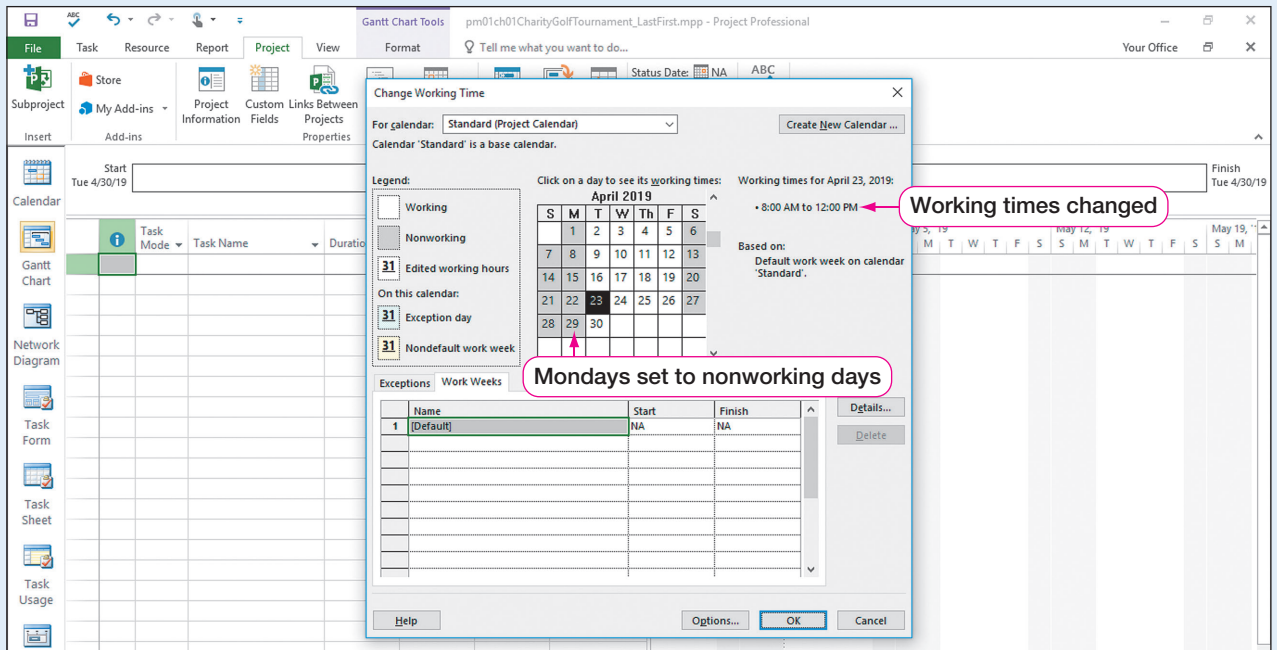



Figure 17 Change Working Time dialog box

- 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.

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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.

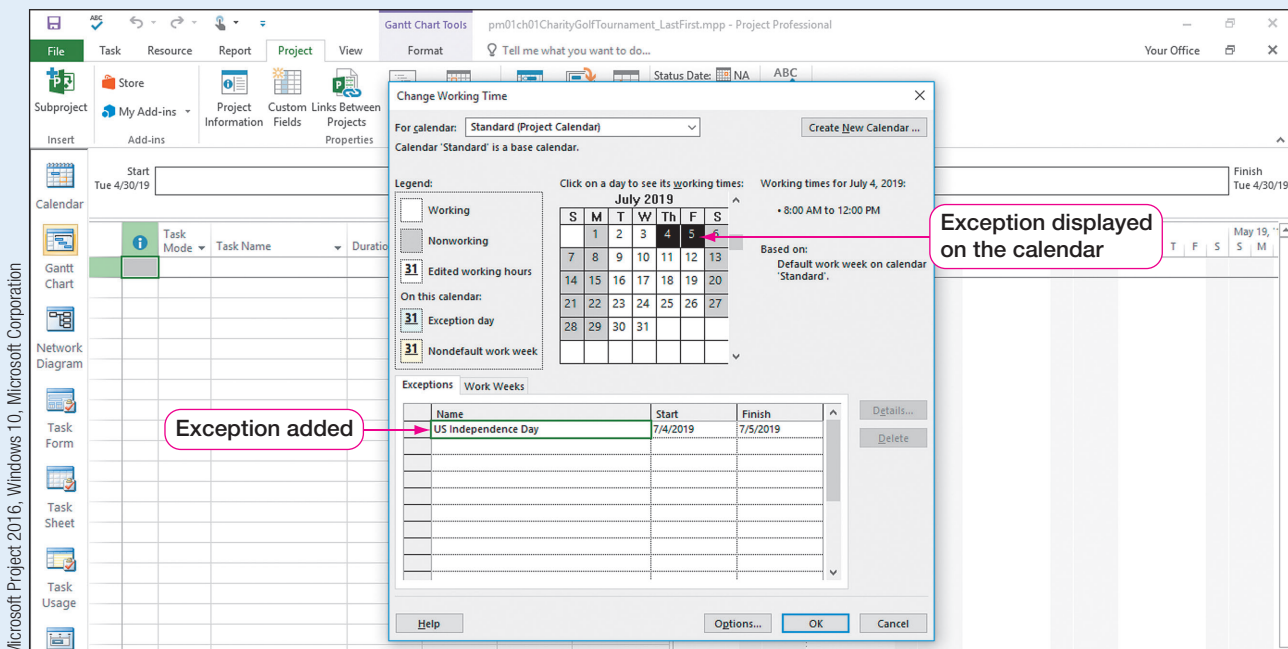


Figure 18 Calendar exception added

- 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.

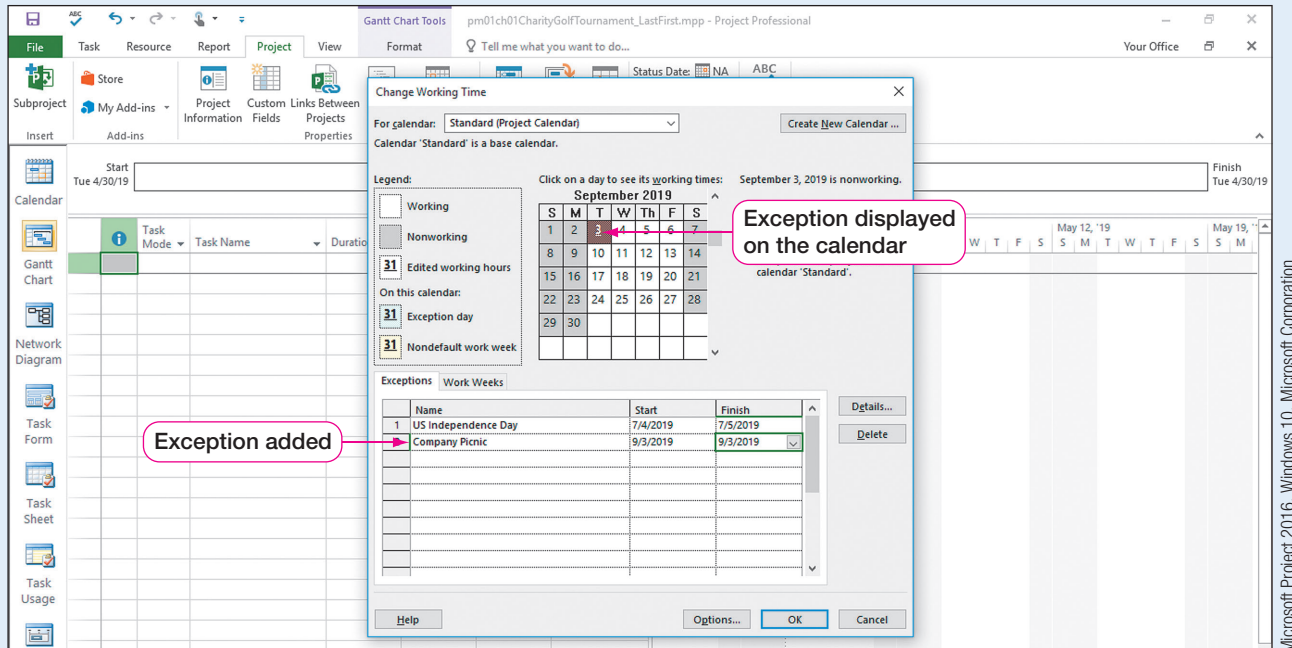



Figure 19 Calendar exception added

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.

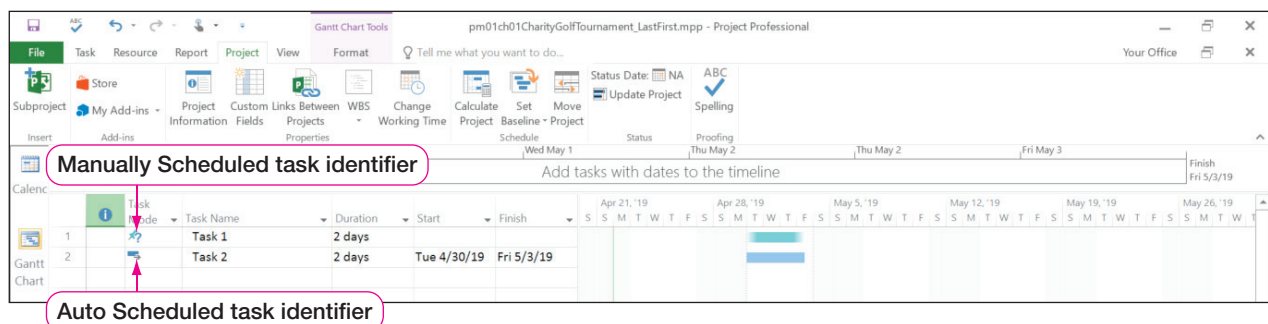
Once the new task calendar is created, it would need to be assigned to specific tasks using the Task Information dialog box.

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.



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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.

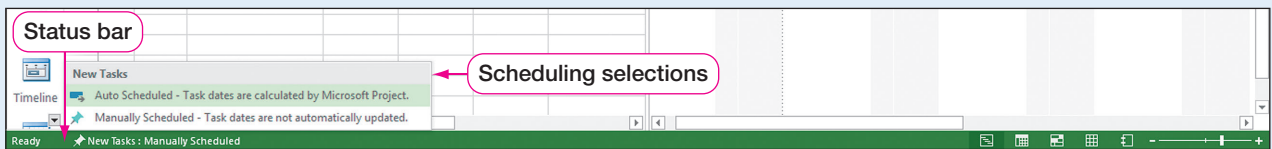
You are asked to set the project to Auto Scheduled so that Project 2016 can help you determine when it is possible to hold the charity golf tournament. In this exercise, you will change a project to Auto Scheduled.



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To Change a Project to Auto Scheduled

- a. 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.

- b. 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.
- c. **Save**  the project. If you need to take a break before finishing this chapter, now is a good time.