This training, which has been approved by BCS, The Chartered Institute for IT, includes exercise items intended to assist learners in their training for an ECDL Certification Programme. These exercises are not ECDL certification tests. For information about Approved Centres in the UK please visit the BCS website at www.bcs.org/ecdl.
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Section 3
Tasks

By the end of this section you should be able to:

- Identify and create tasks
- Insert and remove tasks
- Move tasks
- Edit tasks
- Assign durations to tasks
- Understand milestones

Work through the Driving Lessons in this section to gain an understanding of the above features.

For each Driving Lesson, read all of the Park and Read instructions and then, if applicable, perform the numbered steps of the Manoeuvres. Complete the Revision exercise(s) at the end of the section to test your knowledge.
Driving Lesson 14 - Identifying Tasks

Park and Read

One of Microsoft Project’s most useful features is its ability to effectively represent project activities as virtual tasks. Unlike in paper-based plans, these tasks can be easily edited and rearranged to help create the most efficient project design possible.

A task in Project is any activity that needs to be accomplished within a specific period of time.

Before adding detail to your project plan, it helps to define the broad goals of the project first – what is it that you hope to achieve and how will you accomplish it? These high-level goals will help you to identify the key tasks that need to be performed to achieve the results you are after.

For instance, to make a movie, the following goals would need to be achieved:

- Write script
- Raise finance
- Find location
- Employ people
- Prepare filming
- Shoot movie
- Release movie

These goals can now be turned into high-level tasks in your project plan. Of course, they are obviously not detailed enough to be of much use, but they do give an overview of the main stages of the project – an ideal starting point for any project plan.

All tasks should produce a deliverable (e.g. a script or a movie) or have a means of measuring the percentage of work completed during its progress (e.g. 50% of the movie has been filmed so far).

Once the main goals of the project have been worked out, they can then be broken down further into more manageable “subtasks”, as you will see later.

Breaking your project down into smaller chunks of work is an important first step when creating a project plan. Professionals often refer to the resulting list of tasks as a Work Breakdown Structure (WBS).
Driving Lesson 15 - Adding Tasks

Park and Read

Tasks entered into *Project* can be **Manually Scheduled** or **Auto Scheduled**. This guide will only create automatically scheduled tasks as they are more useful and easier for beginners to work with.

As you will see later, one of the most powerful features of *Project* is its ability to automatically reschedule tasks when a change occurs. For example, if you change a task’s duration, *Project* will automatically update all of the other relevant tasks that come after it and change the project’s end date for you.

Manually scheduled tasks are static and never change unless specifically updated. These can be difficult and time-consuming to work with but give advanced users more control over their plans.

Manoeuvres

1. Start *Project*.
2. Open the *movie* project created earlier.

An up-to-date model copy of the *movie* project is available in the data files folder *Training*. This is named *section3 movie*. If you would like to use this, open the project and save it as *movie* in the main data files folder.

3. Examine the **Status Bar**. Notice that **NEW TASKS** are currently **MANUALLY SCHEDULED**.

4. Click on **NEW TASKS: MANUALLY SCHEDULED** on the **Status Bar** and select **Auto Scheduled** instead. *Project* will now automatically schedule tasks in relation to each other.

Tasks are typed into the **Task Name** column in the **Task List**. They should ideally be entered in the order you want them to occur during the project.

5. Click once in the first row of the **Task Name** column to select it.
Driving Lesson 15 - Continued

6. Enter **Write a script** and press `<Enter>` to complete the entry and move to the next row.

![Table](table.png)

Note that the duration is entered as **1 day?** in the **Duration** column.

7. Next, add the following tasks, each on a new row:

   - Employ people
   - Prepare filming
   - Shoot movie
   - Release movie

8. Your project plan should now feature 5 different tasks, as shown below.

![Table](table.png)

9. Save the **movie** project and leave it open for the next lesson.
Driving Lesson 16 - Inserting or Deleting Tasks

Park and Read

As you learned in the previous lesson, new tasks are easily added to the bottom of the Task List. However, you may also want to insert new tasks between others or remove unwanted tasks completely.

Manoeuvres

1. Your project plan currently contains 5 tasks. Let’s add some more…
2. In the Task List, click once on the Shoot movie task name to select it.
3. Then, press the <Insert> key on your keyboard to insert a new row.

```
<table>
<thead>
<tr>
<th></th>
<th>Task Name</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Prepare filming</td>
<td>1 day?</td>
</tr>
<tr>
<td>4</td>
<td>Raise finance</td>
<td>1 day?</td>
</tr>
<tr>
<td>5</td>
<td>Shoot movie</td>
<td>1 day?</td>
</tr>
<tr>
<td>6</td>
<td>Release movie</td>
<td>1 day?</td>
</tr>
</tbody>
</table>
```

4. Enter the new task Raise finance and press <Enter>.
5. Let’s try another way to add tasks. With the Shoot movie task still selected, click the Insert Task button in the Insert group (click the button’s icon, not the drop-down arrow).
6. Type Find location to overwrite <New Task> and press <Enter>.
7. These two new tasks replace Prepare filming. Place the mouse pointer over the 3 on the Row Heading Bar. The pointer changes to ➔.

```
<table>
<thead>
<tr>
<th></th>
<th>Task Name</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Write a script</td>
<td>1 day?</td>
</tr>
<tr>
<td>2</td>
<td>Employ people</td>
<td>1 day?</td>
</tr>
<tr>
<td>3</td>
<td>Prepare filming</td>
<td>1 day?</td>
</tr>
<tr>
<td>4</td>
<td>Raise finance</td>
<td>1 day?</td>
</tr>
<tr>
<td>5</td>
<td>Find location</td>
<td>1 day?</td>
</tr>
<tr>
<td>6</td>
<td>Shoot movie</td>
<td>1 day?</td>
</tr>
<tr>
<td>7</td>
<td>Release movie</td>
<td>1 day?</td>
</tr>
</tbody>
</table>
```

8. Click once to select the entire row and then press <Delete> to remove it.

You can also right click a task and select Delete Task to remove it.
Driving Lesson 17 - Moving or Copying Tasks

Park and Read

It is simple to move tasks up and down in the Task List, or create a copy of a task that can be edited independently from the original.

Manoeuvres

1. The Raise finance task is currently in the wrong location and should come before Employ people.
2. Move your mouse pointer over 3 on the Row Heading Bar and click once to select this row.
3. The cursor changes to a four-way arrow. Click and drag the task row number upwards to a new position between rows 1 and 2 (a grey “T line” appears to show where the moved task will be inserted).

![Task List with T line]

4. Release the mouse button to drop the Raise finance row. Raise finance should now be task 2.
5. Select the row for task 3, Employ people, using the Row Heading Bar.
6. Someone needs to be hired to write the script. Click Copy, in the Clipboard group. The selected task is copied.
7. Select the row for task 1, Write a script, using the Row Heading Bar.
8. Click Paste (click the button’s icon, not its drop-down arrow).
9. The copied task is pasted into the Task List and appears at the location of the previously selected row (all rows are moved down one to accommodate it). You will edit the copied task name in the next lesson.

Copying a task allows you to duplicate a task’s information, including start dates and durations (which you will learn more about later). If you do not need this information, however, it is often easier to simply insert a new task.
Driving Lesson 18 - Editing Task Names

**Park and Read**

A task name can be replaced by simply selecting it and then overtyping. Alternatively, you can change a name using standard text editing techniques.

Task changes can be immediately “undone” using the **Undo** button, on the **Quick Access Toolbar**. The drop down arrow on the right of the button allows a sequence of tasks to be undone at the same time.

**Manoeuvres**

1. Click once on the task name **Employ People** on row 1 (not row 4). Type **Find a story** to overtype and replace this text. Press **<Enter>** to confirm the change.

2. You’ve decided that it will take far too long to research a story for the film – it would be much easier to hire somebody else to write the script. Click the **Find a story** task name once to select it again.

3. Notice the mouse pointer changes to **I** when over text.

4. Click to place the cursor in the name text and then, using the cursor (arrow) and **<Backspace>/**<Delete> keys, change the text to **Find a writer**. Press **<Enter>** to confirm the change.

5. Next, select the task name **Release movie**. Then, using whichever technique you prefer, change this to **Promote movie** and press **<Enter>**.

6. The last change was a mistake. Click the **Undo** button, **⪠** to reverse the last action. **Release movie** reappears in task 7.

A change can be cancelled by pressing **<Esc>** before completing the change.

Next to **Undo** is the **Redo** button, **⪠**. This button undoes the actions performed using **Undo**.
Driving Lesson 19 - Task Durations

Park and Read

All tasks take a certain amount of time to complete. This time is known as the duration and can be entered in:

- Months (mo)
- Weeks (w)
- Days (d)
- Hours (h)
- Minutes (m)

Days (d) are the default unit of time measurement in Project. However, the abbreviations above (e.g. mo, w, h and m) can be used to specify a different unit of measurement.

If a task’s duration is estimated, it appears with a question mark, ?, after the duration. However, as most task durations can be considered estimates at the planning stage, this feature is rarely needed.

Estimated durations are best used by advanced, experienced project planners who need to distinguish between accurate estimates and rough guesses.

Manoeuvres

1. Examine the Duration column in the Task List. When new tasks are Auto Scheduled, they are given a default estimated Duration of 1 day?

   Notice that the Gantt Chart displays task durations as bars, (all starting on the start date of the project). Watch these change during this lesson.

2. Let’s change the durations of the tasks in the project plan. First, click once on the Duration for task 1 to select it.

3. Type 2 and press <Enter>. As the default unit of time measurement in Project is days, the Duration for task 1 is now 2 days.
Driving Lesson 19 - Continued

Notice that the duration of task 1 also increases on the Gantt Chart.

When adjusting a selected duration, the up/down spinners, , can be used to increase or decrease the current value.

4. Change the **Duration** for task 2 to 2 days also.

5. Change the **Duration** for task 3 to 1 week. To do this, type 1w and press <Enter>.

6. Add the following **Durations** to the remaining tasks:
   - Employ people: 3 days
   - Find location: 6 days
   - Shoot movie: 3 weeks
   - Release movie: 4 hours

Notice that the durations are no longer shown as estimated, ?.

Remember, Sunday has been specified as a non-working day. Any tasks spanning a weekend, e.g. **Find location**, will not count Sunday.

7. It will take much longer to write the script than 2 days. Change the duration of task 2 to 2 **weeks**.

For a project schedule to be accurate, effective and of maximum value, the times (durations) allocated to tasks should be as realistic as possible.
Driving Lesson 20 - Splitting Tasks

Park and Read

The duration of a task in Project represents the time it will take to complete that task, from start to end, without breaks. However, if you need to interrupt a task (perhaps because it can’t be completed all in one go), you can split it.

Manoeuvres

1. Select task 5, Find location in the Task List.

To select a task, simply click its Task Name in the Task List once.

2. There will be a lot of travelling involved in finding a location to shoot the movie and you really don’t want to spend six days back-to-back doing this. It would be much better to perform the task in three separate stages with a number of “days off” in-between. Let’s split the task…

3. Click Split Task, in the Schedule group. Notice the large ToolTip that appears.

4. On the Gantt Chart, move your mouse pointer over the bar for task 5. The pointer changes to !

5. Using the Timescale for reference, place the mouse pointer over the first Wednesday for task 5 (i.e. the third day of the task). Notice that the ToolTip’s Scheduled Start shows when the split will occur.

6. Click once to split the task into two parts. The split appears as a sequence of dots (the task is suspended where the dots appear).
Driving Lesson 20 - Continued

7. Next, place your mouse pointer over the second part of the bar. The pointer changes to \( \text{\(\bigcirc\)}\). Click and drag the second part of the bar so that it starts on the first Monday of the week after (09/01/17).

8. Notice that the dotted line is extended. The task runs for two days, is suspended until the following Monday, and then resumes.

9. Click Split Task, \( \text{\(\bigcirc\)}\), again. This time, place the mouse pointer over the second Wednesday in January for task 5 (11/01/17).

You can click and drag at the same time to create and adjust a split's duration.

10. Click and drag the second part of the bar so that it starts on the first Monday of the following week.

11. Task 5 is now divided into three stages.

12. Next, split task 1, Find a writer, into two. The task should run for one day, be suspended for three days, and then run again for one day.

13. The previous change was made in error. Click and drag the second part of task 1 to the left so that it reconnects with the first part again. The split is removed.
Driving Lesson 21 - Milestones

Park and Read

Milestones are used to mark the start or end of important events in the life of a project. For example, milestones can mark the achievement of a significant goal or the start or end of a particular phase.

Milestones are simply tasks with zero duration. Any task can be made into a milestone by changing its duration to 0 days. Milestones appear as a black diamond with the date that they are scheduled to occur.

Manoeuvres

1. Select task 1, Find a writer, and press <Insert> to insert a new task.
2. Name the new task Make a movie.
3. On the first blank row beneath Release movie, add the new task Movie complete. These milestones represent the start and end of the project.
4. Change the duration of both tasks to 0 days.

Notice the milestone icons, ◆, on the Gantt Chart.

5. Next, add a new milestone named Start filming above task 7, Shoot movie. This is an important date in the movie’s project plan.

All tasks and milestones currently start together on day 1 of the project. This doesn't make much sense at the moment, but you will change their dates and build a more useful schedule later.
Driving Lesson 22 - Notes

Notes can be attached to tasks in Project. This allows you to add a little more detail beyond what is shown on the Task List and Gantt Chart.

Manoeuvres

1. Select task 6, Find location.
2. From the Properties group on the TASK tab, click Task Notes, . The Task Information dialog box appears with the Notes tab selected.
3. In the text area below Notes, enter the text Location must be within 20 miles of studio.
4. Click OK. Notice that an icon, , appears in the Indicators column to show there is a note for this task. Move the mouse over the icon to see it.

The Indicators column, , in the Task List is used to highlight important task information. You will see more icons added to this column later.

5. Add the following note to task 2, Find a writer: Writer must be a famous author - maybe Joe King Rowling?
6. Add the following note to milestone 10, Movie complete: Wrap party to be held at the Hotel Casablanca.
7. 20 miles doesn't give you much scope to find a good location to shoot the movie. Double click on the note icon for task 6, Find location. Edit the note to Location must be within 300 miles of studio and click OK.
8. The note that you added to task 2, Find a writer, is maybe a little too optimistic! Edit and delete the note text. The note icon is removed.
Driving Lesson 23 - Hyperlinks

Park and Read

You can add a hyperlink to a task which will link to another file, web page or e-mail address.

Manoeuvres

1. Insert a new task above task 9, Release movie. Enter the task name Review budget and set its Duration to 2 hours.

2. Right click on the new task 9, Review budget. From the bottom of the pop-up menu that appears, select Hyperlink.

3. A hyperlink is to be created to a spreadsheet containing budget information. Make sure Existing File or Web Page is selected at the left of the Insert Hyperlink dialog box.

4. The Documents folder should be selected in Look in. Below this, double click on DATA FILES, then ECDL, then Project Planning to display the files for this guide. Click the Excel file Budget once to select it.

5. Click OK to create the hyperlink. Notice the hyperlink icon, that appears in the Indicators column.
Driving Lesson 23 - Continued

6. Move the mouse pointer over the hyperlink symbol. It changes to a pointing hand, 🔗.

7. Click once to follow the hyperlink. A security notice may appear – click Yes to continue if it does.


9. Next, attach a hyperlink to task 2, Find a writer. Make sure Existing File or Web Page is selected at the left of the Insert Hyperlink dialog box.

10. A friend has recommended CiA Training to write the movie. Let’s create a link to their webpage. Enter www.ciatraining.co.uk in the Address box.

11. Click OK. Try the new hyperlink: it opens in your computer’s default Internet browser.

12. Close the Internet browser and return to Project.

13. Your friend has provided a Word document with a list of authors to consider instead. Right click on the hyperlink icon for task 2, Find a writer and select Hyperlink | Edit Hyperlink.

14. In the dialog box, select Existing File or Web Page and navigate to the data folder. Select the document Contacts.docx and click OK.

15. The hyperlink now links to the contact file; check it and then close Word.

16. None of these contacts are suitable. Right click on the hyperlink icon for task 2, Find a writer and select Hyperlink | Clear Hyperlinks. The hyperlink is deleted.

17. Save the movie project and close it, but leave Project open.
Driving Lesson 24 - Revision

Park and Read

At the end of every section you get the chance to complete one or more revision exercises to develop your skills and prepare you for your ECDL certification test. You should aim to complete the following steps without referring back to the previous lessons.

Manoeuvres

1. In Project, what is a task?
2. If you want Project's powerful scheduling features to organise tasks for you, should you use manual or automatic scheduling?
3. What is a task's duration?
4. New auto-scheduled tasks appear with a duration of 1 day? What does the question mark indicate?
5. Which keyboard shortcut can be used to add a new task above the currently selected task?
6. How do you delete a task from the Task List?
7. How can tasks be rearranged in the Task List?
8. How do you edit a task's name?
9. If you want a task to be interrupted for a time, what feature can you use?
10. What is a milestone?
11. Why might you want to add a note to a task?
12. Why might you want to add a hyperlink to a task?

Now complete the Record of Achievement Matrix at the back of the guide. You should only move on when confident with the topics and features described in this section.
Section 6
Linking Tasks

By the end of this section you should be able to:

- Recognise link dependencies
- Understand predecessors and successors
  - Link tasks
  - Unlink tasks
- Link using task information
  - Adjust zoom levels

Work through the Driving Lessons in this section to gain an understanding of the above features.

For each Driving Lesson, read all of the Park and Read instructions and then, if applicable, perform the numbered steps of the Manoeuvres. Complete the Revision exercise(s) at the end of the section to test your knowledge.
Driving Lesson 36 - Task Dependencies

**Park and Read**

Once you have entered all of your project’s tasks, you can then start linking them together to build a schedule. This creates dependencies between the start and end of tasks (i.e. the start or end of one task depends on the start or end of another).

*In Project, dependencies define the “relationships” between tasks.*

By default, linking tasks in Project creates Finish-to-Start (FS) task dependencies. As soon as the first task is finished, the following linked task(s) can start.

![An example of four linked tasks with Finish-to-Start dependencies (task 1 has no dependencies)](image)

*Dependencies are shown in the Gantt Chart as an arrow that links tasks, ↓. As the task dependencies are Finish-to-Start, the arrow shows the end of one task linking to the start of the next.*

You can also link tasks using Start-to-Start (SS) dependencies. As soon as the first task starts, the linked task(s) can also start.

![An example of two linked tasks with Start-to-Start dependencies (tasks 3 and 4). The other tasks have standard Finish-to-Start dependencies)](image)

*When tasks are auto-scheduled, Project will use task durations and dependencies to automatically build your schedule. This is one of the most powerful and useful features of the application.*

*Finish-to-Start and Start-to-Start are the two most popular types of dependency. Others include Finish-to-Finish (FF) and Start-to-Finish (SF).*
Driving Lesson 37 - Predecessors & Successors

Park and Read

As you have already learned, a task’s start or end date can depend upon the start or end date of other related tasks. When tasks are linked to each other in this manner, they can be referred to as **predecessors** and **successors**.

The tasks upon which another task depends are known as **predecessors**. For example, actors needing to rehearse their lines in a movie require a script. **Writing a script** is therefore a predecessor (i.e. it comes before) **rehearse lines**.

A **predecessor** is any task which has a start or finish date that determines the start or finish date of another task.

Any delays or changes to a task will have an impact on all of the other tasks that depend on it. These dependent tasks are known as **successors**. For example, **rehearse lines** is a successor (i.e. it comes after) **writing a script**.

A **successor** is a task which has a start or finish date determined by the start or finish date of another task.

Examine the Gantt Chart below: the middle task is selected. The start of that task depends on the completion of the predecessor tasks above it. Similarly, the successor task afterwards depends on the selected task completing before it can start.

A task is always linked to a predecessor task to create a dependency (not the other way around).

Importantly, not all tasks in a project are necessarily related – many can occur simultaneously and are not necessarily affected by changes and delays to other tasks.

You will get to see these concepts in action in the lessons that follow...
Driving Lesson 38 - Finish-to-Start Links

Park and Read

The most common type of dependency between tasks is Finish-to-Start. A Finish-to-Start link is used when a task’s start is dependent upon its predecessor finishing. The start of the task will be delayed if the predecessor’s finish is delayed.

For example, a house building project requires the laying of foundations to be fully completed before any walls can be built on top. Therefore, laying foundations has to be finished before the bricklaying can start (the two tasks have a Finish-To-Start relationship).

Manoeuvres

1. Open the project Links from the data files folder. This project lists the four different types of dependency you can create in Project.
2. Select tasks 1 to 2 using the Row Heading Bar.
3. Click the Link the Selected Tasks button, in the Schedule group on the TASK tab.
4. The selected tasks are linked with a default Finish-to-Start dependency. Notice that the tasks are now linked in the Gantt Chart.
5. Increase the duration of task 1 to 6 days. Task 2’s start date is delayed.
6. Now increase the duration of task 2 to 4 days. Notice that this has no effect on task 1.

You can also select multiple rows at the same time to link. As you will see later, this is useful when you have a lot of tasks to link together at once.
Driving Lesson 39 - Start-to-Start Links

Park and Read

Another common type of dependency between tasks is Start-to-Start. This is used when a task has a start date dependent upon its predecessor’s start date (i.e. it can’t start until its predecessor starts). The task’s start date will be delayed if its predecessor’s start is delayed (but not vice versa).

For example, the start of a train journey can only begin when a train driver’s shift starts. The two tasks can therefore be linked with a Start-to-Start dependency. Delaying the start of the train driver’s shift will delay the start of the train journey (but not vice versa).

Manoeuvres

1. The Links project should still be open. Select tasks 4 to 5 using the Row Heading Bar.
2. Click the Link the Selected Tasks button, , on the TASK tab. The selected tasks are linked with a Finish-to-Start dependency.
3. You now need to change task 5’s dependency to Start-to-Start. Double click task 5 to show the Task Information box.
4. Select the Predecessors tab and notice that a Finish-to-Start link has been created to task 4. Click on the Type box and then use the drop-down arrow to select Start-to-Start (SS).
Driving Lesson 39 - Continued

After clicking in the **Type** box, the required link can be quickly inserted by typing the initials of the link, i.e. **FS, SS, FF or SF**, followed by `<Enter>`.

5. Click **OK**. Notice that the relationship between task 5 and its predecessor, task 4, is now **Start-to-Start**.

6. Change the duration of task 4 to **4 days**. Note that this does not affect the start of task 5.

7. Change the duration of task 5 to **5 days**. Similarly, this does not affect the start of task 4.

8. Leave the project open for the next lesson.