PROJECTLIBRE

ECDL level 2

Abstract

Written for the Open Source Project software ProjectLibre based on the requirements for the ECDL Level 2 course in Project Management.
Worksheets for this book can be downloaded from www.giakonda.org.uk.
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ECDL / ICDL Project Planning

This module provides the essential concepts and skills relating to the use of project management software to prepare project plans and monitor projects including planning and managing time, costs, tasks, and resources.

Module Goals

Successful candidates will be able to:

- Understand the key concepts relating to managing projects.
- Use a project management application to create a new project and maintain an existing project.
- Create and schedule tasks and add project constraints and deadlines.
- Assign costs and create and assign resources to tasks.
- View the critical path, monitor progress and reschedule work.
- Prepare and print outputs, including charts and reports.

Table of Contents

Using these notes

This document falls into two parts. the first section walks you through a simple project. The second section is made up of the syllabus for the European Computer Driving Licence (or ECDL) Level 2 Certificate in project management. Strictly it was designed with Microsoft Project 2010 in mind. I have used this as a starting point for the ProjectLibre project management software. It is not a perfect fit but it's a start.
The Numbering in the second section corresponds to the ECDL syllabus numbering.

The following line is intended to prompt you to have a go at doing something. It appears throughout the book and will help you to focus on the task in hand.

- ⇨ Do something

The updated coursework notes can be found on my website www.giakonda.org.uk

Project Management

What is a project?

One simple definition might be:

A planned set of related tasks to be executed over a predicted period of time and within certain cost, resource and other limitations.

What makes a project different from other work related activities?

- They have specific objectives to deliver new benefits to, the company, their clients, the sponsoring organisation, stakeholders and/or delivery partners;
- Often they introduce significant changes to the way the business operates;
- They create new outputs/deliverables/practices that will enable benefits to be realised;
- They have a specific, temporary management organisation and governance arrangements running alongside current company practices set up for the duration of the project;
- They are susceptible to additional risks not usually encountered in the day to day running of the organisation;
- Usually they involve a range of stakeholders from different parts of the organisation and beyond;
- Sometimes they use methods and approaches that are new or unfamiliar to the adopting company.

In what circumstances may a project fail?

- Failure to take into proper account the needs and influences of stakeholders;
- Failure to communicate and keep the stakeholders informed of developments;
- Lack of attention to the impact of the additional project work on the normal business of the adopting company;
- Producing expensive 'Rolls Royce' solutions when simple workable products would suffice;
- Failure to identify and deal with the many risks that can affect achievement of project objectives;
- Insufficient attention to planning, monitoring and control of the work of the project.

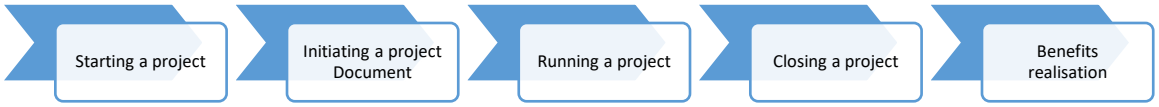
Project management is the process of monitoring and control that ensures the smooth running of the project and minimises the possibility of failure.

ProjectLibre is designed to manage resources usage and project scheduling.

The project lifecycle

The Project life cycle

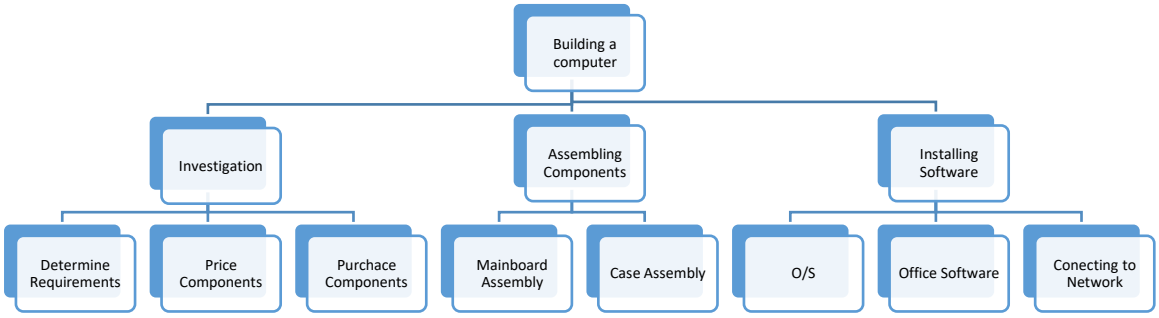
Running the project is the most resource intensive part of the project but it is the start-up and initiation and the planning that goes on there that ultimately has the most impact on its success.



Work Breakdown Structure (WBS)

Displaying a complex project as simpler and more manageable tasks in a structure diagram is sometimes referred to as a Work Breakdown Structure (WBS). Also referred to as top down design by stepwise refinement. It is a technique used to define tasks first developed in the mid 1950's by the US defence program to develop Polaris nuclear submarines.

An example of a WBS for a project to build a computer is shown below.



Exercise

- ⇨ Produce a WBS for Project 1 on the accompanying worksheet.

Introducing ProjectLibre

What is ProjectLibre

ProjectLibre is the project management software produced and supported by the ProjectLibre community. It is a very useful tool for planning a project including the management and tracking of resources and time. There are several other Open Source programs that offer similar features such as TaskJuggler and OpenProject.

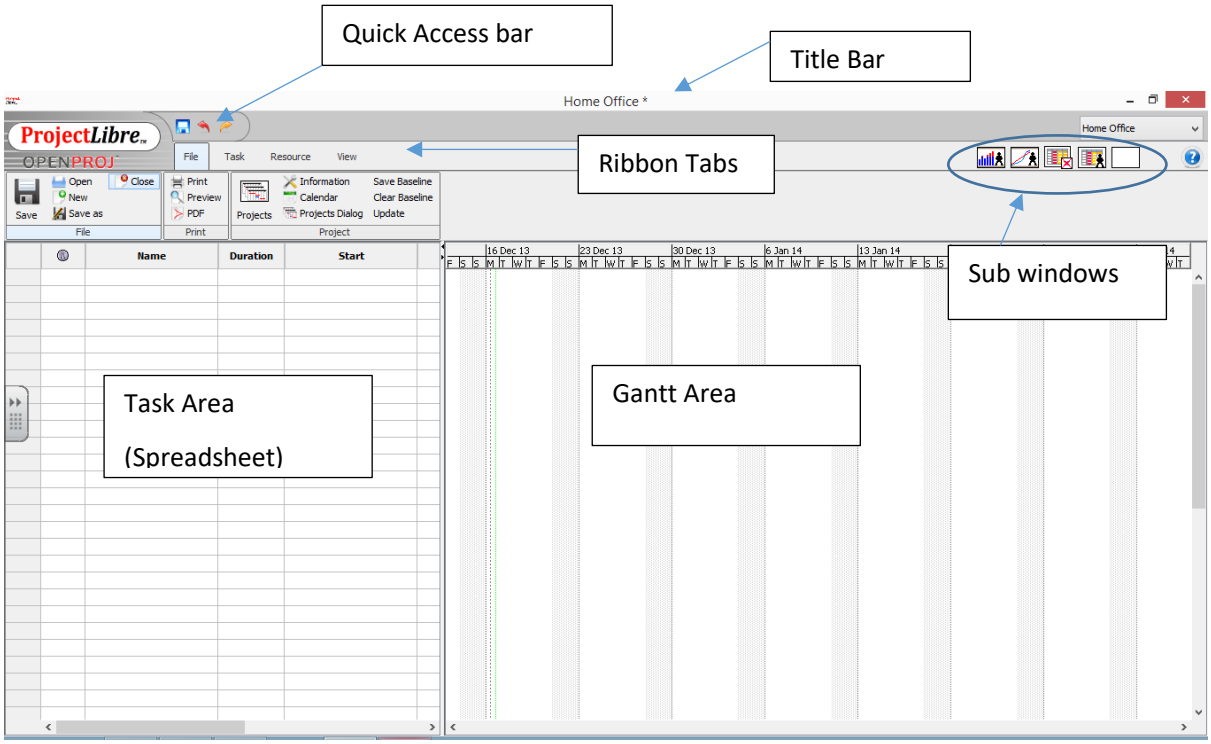
The Start-up Screen

When you first start Project the screen will look similar to the screen below.

The area on the left is the area where you enter the individual tasks that make up your project. The area on the right displays the information in the form of a Gantt chart.

The ribbons in ProjectLibre are similar to the ribbons in the Microsoft Office suite. From 2007 on.

The icons on the ribbons are often called commands, however I prefer to use the term tools as they allow you to perform some sort of action just like the normal use of the word tool.



Title Bar

This tells you the name of the project you are working on, in this case **Home Office**

Quick Access toolbar

This allows you quick access to the commands you use frequently. **Save Undo** and **Redo**. **Save** saves a copy of your current work. **Undo** undoes the last action you applied to your project and **Redo** simply undoes the undo action, i.e. puts you back to where you were.

The Ribbon

This is an easier way of displaying the tools available in a particular menu. It replaces the idea of drop down menus which tended to hide the functionality of a program. There are four ribbons in ProjectLibre each with its own set of tools icons that provide a context sensitive focus. Each ribbon tab provides the tools for a particular set of actions or commands within ProjectLibre. For example the View tab includes tools for producing reports. Each ribbon is sub divided into several groups, each separated by vertical lines. The group name appears underneath the tools.

⇨ Make a note of the groups in the View ribbon

Ribbon Tabs

File, Task, Resource, and View tabs are always present. The **File** tab gives access to actions such as **Save, Open, Close** and **New** which of course applies to the Project files themselves, hence the tab name.

Ribbon groups

On each of the ribbons there are many tools, the Ribbon itself has been sub divided into groups. Each group displays the tools of that group.

Gantt Chart

This is divided into two parts. On the left is a table of the tasks to be undertaken and on the right is the Gantt chart proper which is a graphical representation of the project schedule.

Sub-Window Bar

This bar to the right of the tabs includes the tools to add sub-windows (Below the Gantt Chart) and the Help tool

From left to right the sub-windows are:

Histogram, Charts, Task Usage, Resource Usage and **No Sub Window** and on the far right the **Help** button.

Tool Tips

If you hover the mouse pointer over any icon on the ribbon then the name and purpose of that icon is displayed.

Getting Help

To get help, you click on the help button on the top right of the screen. It is the white question mark on the left of the Title bar.

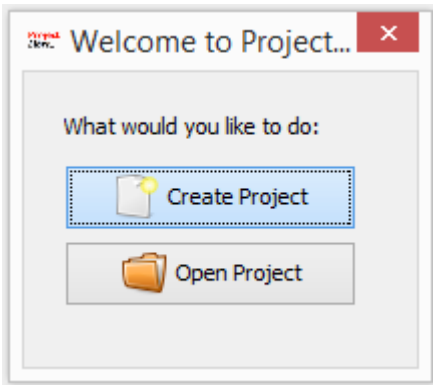
⇨ Look for help on setting a start and finish date

Starting a new project

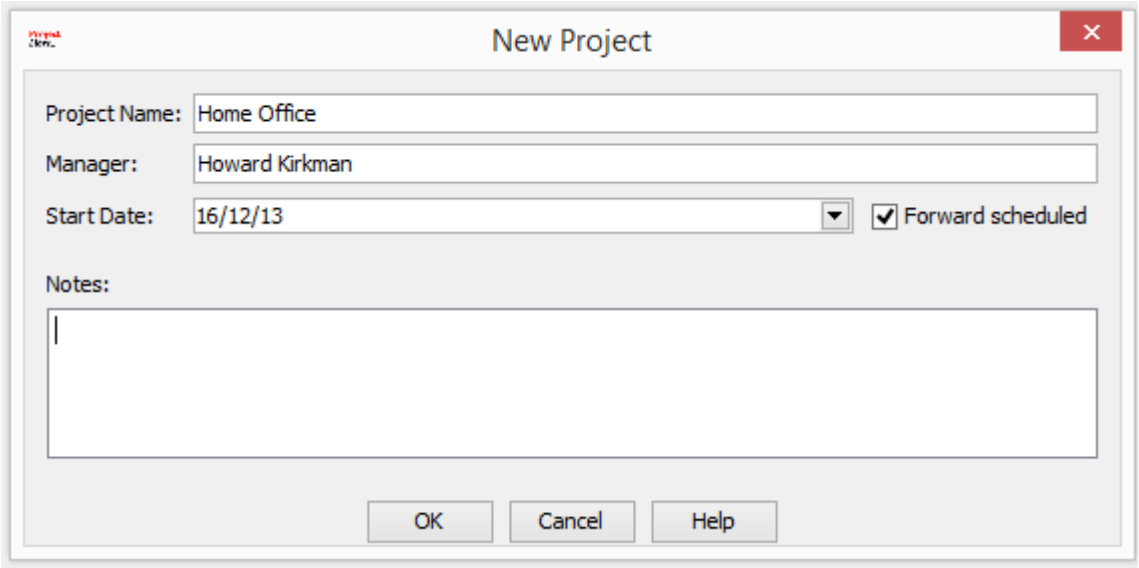
Basics

To follow this tutorial it is best if you download the Workfiles from www.giakonda.org.uk look for downloads then ProjectLibre .

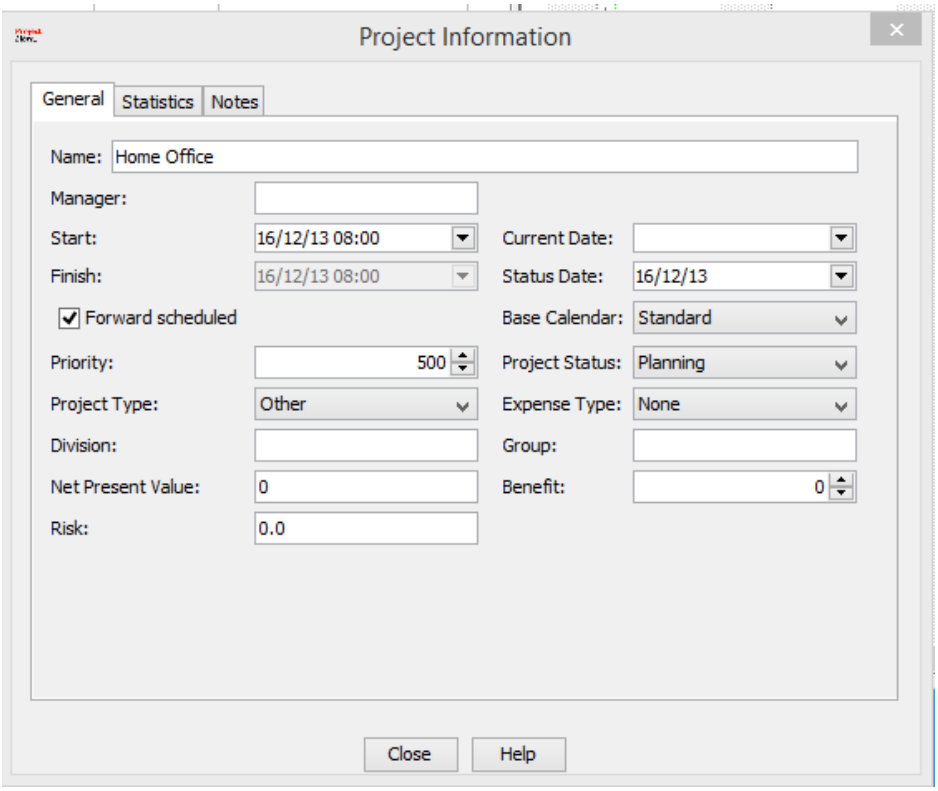
Open a new project by launching ProjectLibre. This automatically displays the Welcome to ProjectLibre dialogue box that prompts you to either create a new project or open an existing one.



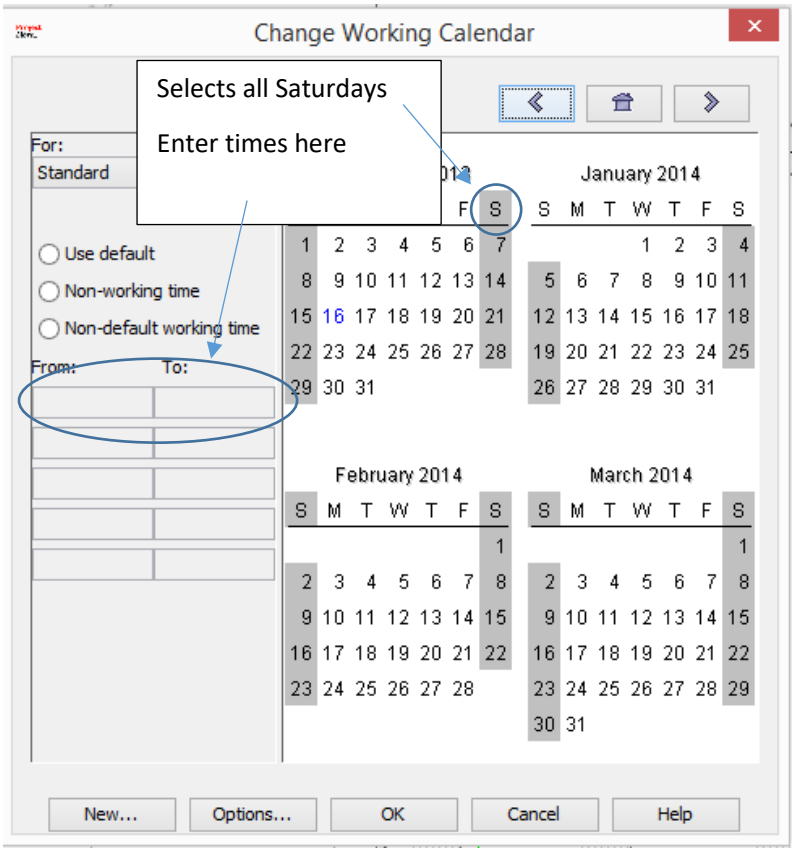
Creating a new project displays a further dialogue box where you can enter the basic details of your project, its name, the manager of the project and its start date.



Further details can be set using the **Project Information** tool found on the **File** ribbon in the **Project** group.



Next to be looked at is the Working calendar. Generally the default working calendar is sufficient but for some projects it may be appropriate, for example for there to be working time on Saturday morning. To set this as an option first select the days you wish to change. So for a project where every Saturday morning was a working morning click on the S for Saturday and then set the non-default working time to include 8:00 to 12:00. I.e. delete the entries 13:00 and 17:00. If you wanted only a few Saturdays to be set this way then you could select only the actual days you wanted to change.



⇨ Before starting to enter data into your project adjust your working time settings to reflect this project involves working Saturday mornings from 9:00 to 12:00.

Entering Tasks

Now we need to start to enter the Project tasks.

From the ProjectLibre Coursework you downloaded from www.giakonda.org.uk enter the tasks and their duration. Note the three summary tasks will NOT require any days to be entered. These will be automatically updated when the task entries are properly finished. As each task is entered a duration of **1 day?** is entered alongside it. If you did not have any duration data at this stage simply leave that alone until you can come up with some.

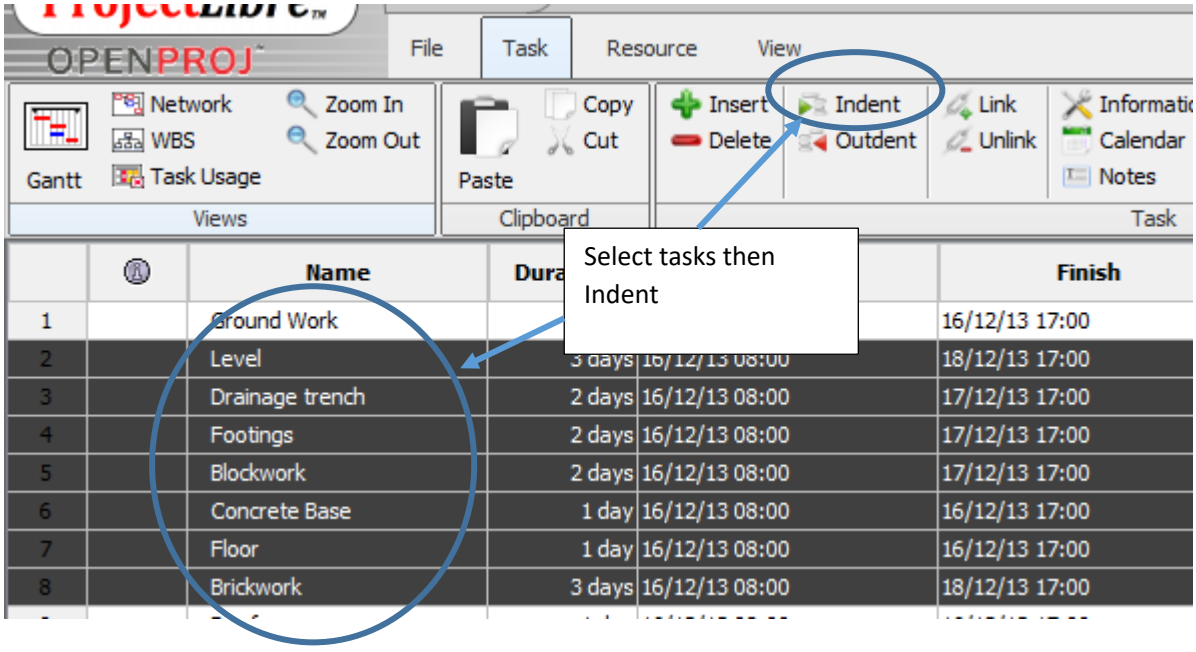
Having completed this list you should see something like:

	ⓘ	Name	Duration	Start	Finish
1		Ground Work	1 day	16/12/13 08:00	16/12/13 17:00
2		Level	3 days	16/12/13 08:00	18/12/13 17:00
3		Drainage trench	2 days	16/12/13 08:00	17/12/13 17:00
4		Footings	2 days	16/12/13 08:00	17/12/13 17:00
5		Blockwork	2 days	16/12/13 08:00	17/12/13 17:00
6		Concrete Base	1 day	16/12/13 08:00	16/12/13 17:00
7		Floor	1 day	16/12/13 08:00	16/12/13 17:00
8		Brickwork	3 days	16/12/13 08:00	18/12/13 17:00
9		Roof	1 day	16/12/13 08:00	16/12/13 17:00
10		Timbers	2 days	16/12/13 08:00	17/12/13 17:00
11		Felt	1 day	16/12/13 08:00	16/12/13 17:00
12		Tiles	1 day	16/12/13 08:00	16/12/13 17:00
13		Interior	1 day	16/12/13 08:00	16/12/13 17:00
14		Windows and Glazing	2 days	16/12/13 08:00	17/12/13 17:00
15		Doors	2 days	16/12/13 08:00	17/12/13 17:00
16		Electrics	3 days	16/12/13 08:00	18/12/13 17:00
17		Plumbing	2 days	16/12/13 08:00	17/12/13 17:00
18		Plastering	2 days	16/12/13 08:00	17/12/13 17:00
19		Painting	3 days	16/12/13 08:00	18/12/13 17:00
20		Snagging	1 day	16/12/13 08:00	16/12/13 17:00
21		Handover	1 day	16/12/13 08:00	16/12/13 17:00

1 Data entry sheet

Note: The three Phases **Ground Work Roof** and **Interior** will not require you to enter a duration. These will be calculated by the software once their respective tasks have been properly placed

To include the tasks from Level to Brickwork as sub-tasks of Groundwork simply select them all and on the **Task** ribbon use the **Indent** tool. **Ground Work** then becomes a **Summary Task**.



2 Selected Tasks prior to Indenting

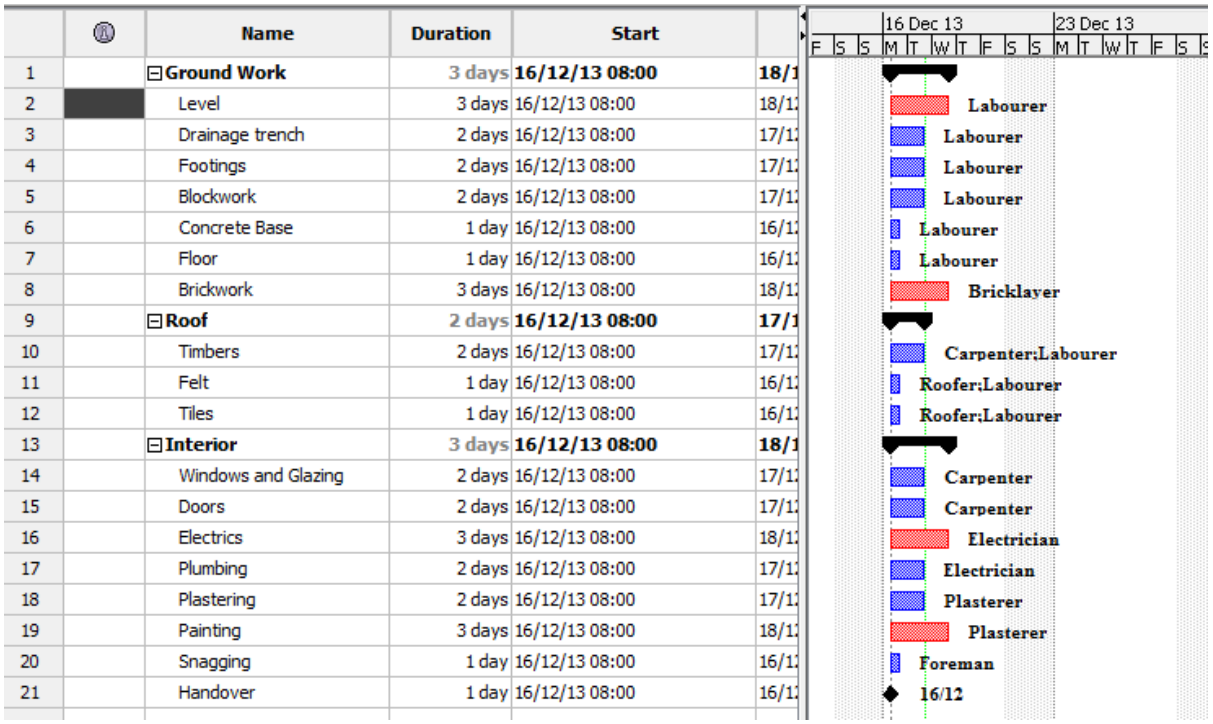
The finished Task Sheet should look like:

		Name	Duration	Start	Finish
1		**Ground Work**	**3 days**	**16/12/13 08:00**	**18/12/13 17:00**
2		Level	3 days	16/12/13 08:00	18/12/13 17:00
3		Drainage trench	2 days	16/12/13 08:00	17/12/13 17:00
4		Footings	2 days	16/12/13 08:00	17/12/13 17:00
5		Blockwork	2 days	16/12/13 08:00	17/12/13 17:00
6		Concrete Base	1 day	16/12/13 08:00	16/12/13 17:00
7		Floor	1 day	16/12/13 08:00	16/12/13 17:00
8		Brickwork	3 days	16/12/13 08:00	18/12/13 17:00
9		**Roof**	**2 days**	**16/12/13 08:00**	**17/12/13 17:00**
10		Timbers	2 days	16/12/13 08:00	17/12/13 17:00
11		Felt	1 day	16/12/13 08:00	16/12/13 17:00
12		Tiles	1 day	16/12/13 08:00	16/12/13 17:00
13		**Interior**	**3 days**	**16/12/13 08:00**	**18/12/13 17:00**
14		Windows and Glazing	2 days	16/12/13 08:00	17/12/13 17:00
15		Doors	2 days	16/12/13 08:00	17/12/13 17:00
16		Electrics	3 days	16/12/13 08:00	18/12/13 17:00
17		Plumbing	2 days	16/12/13 08:00	17/12/13 17:00
18		Plastering	2 days	16/12/13 08:00	17/12/13 17:00
19		Painting	3 days	16/12/13 08:00	18/12/13 17:00
20		Snagging	1 day	16/12/13 08:00	16/12/13 17:00
21		Handover	1 day	16/12/13 08:00	16/12/13 17:00

3 Finished Task Sheet for Home Office

Gantt Chart

The Gantt chart is the diagram of the tasks and the times required to complete them. So Tasks are on the left side of the screen and the Gantt chart proper is on the right side of the screen. Once all the tasks have been entered notice they all align themselves to the Start date. It is now necessary to link them in such a way as to ensure they start as required that is after the appropriate preceding task. If you entered the tasks in the order you intend to complete them then this linking is relatively straight forward.

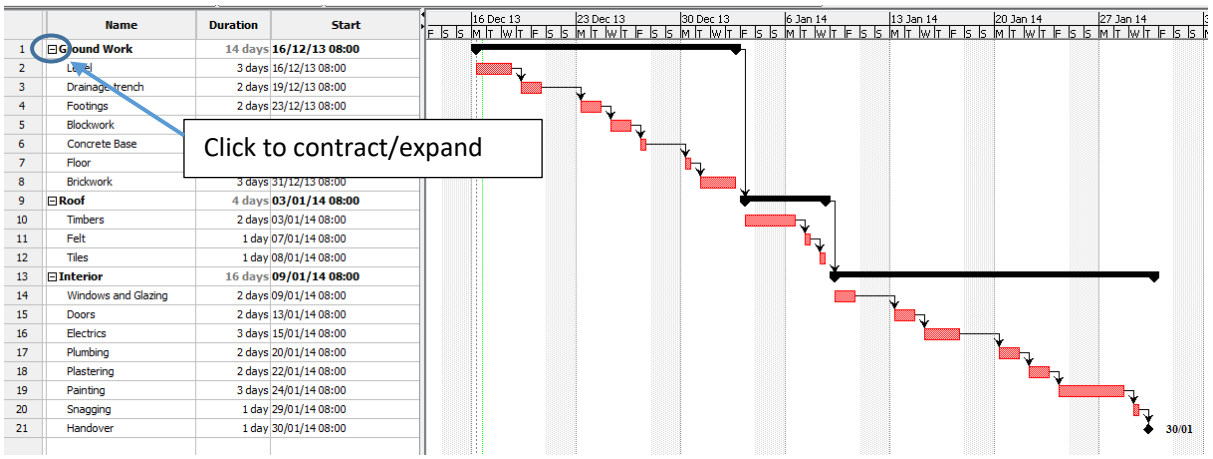


	Name	Duration	Start	
1	**Ground Work**	3 days	**16/12/13 08:00**	**18/1**
2	Level	3 days	16/12/13 08:00	18/1
3	Drainage trench	2 days	16/12/13 08:00	17/1
4	Footings	2 days	16/12/13 08:00	17/1
5	Blockwork	2 days	16/12/13 08:00	17/1
6	Concrete Base	1 day	16/12/13 08:00	16/1
7	Floor	1 day	16/12/13 08:00	16/1
8	Brickwork	3 days	16/12/13 08:00	18/1
9	**Roof**	2 days	**16/12/13 08:00**	**17/1**
10	Timbers	2 days	16/12/13 08:00	17/1
11	Felt	1 day	16/12/13 08:00	16/1
12	Tiles	1 day	16/12/13 08:00	16/1
13	**Interior**	3 days	**16/12/13 08:00**	**18/1**
14	Windows and Glazing	2 days	16/12/13 08:00	17/1
15	Doors	2 days	16/12/13 08:00	17/1
16	Electrics	3 days	16/12/13 08:00	18/1
17	Plumbing	2 days	16/12/13 08:00	17/1
18	Plastering	2 days	16/12/13 08:00	17/1
19	Painting	3 days	16/12/13 08:00	18/1
20	Snagging	1 day	16/12/13 08:00	16/1
21	Handover	1 day	16/12/13 08:00	16/1

4 Tasks before Linking

Highlight the tasks you want to link. From the **Task** ribbon **Task** group click the **Link** tool. 

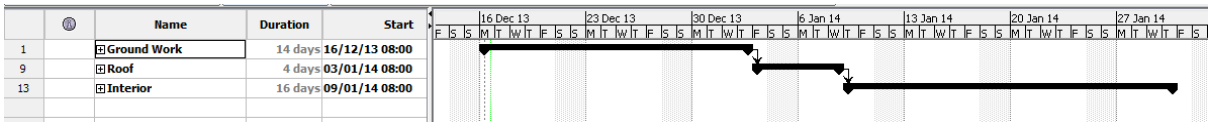
The completed Task List and Gantt Chart should look like:



	Name	Duration	Start
1	**Ground Work**	14 days	**16/12/13 08:00**
2	Level	3 days	16/12/13 08:00
3	Drainage trench	2 days	19/12/13 08:00
4	Footings	2 days	23/12/13 08:00
5	Blockwork		
6	Concrete Base		
7	Floor		
8	Brickwork	3 days	31/12/13 08:00
9	**Roof**	4 days	**03/01/14 08:00**
10	Timbers	2 days	03/01/14 08:00
11	Felt	1 day	07/01/14 08:00
12	Tiles	1 day	08/01/14 08:00
13	**Interior**	16 days	**09/01/14 08:00**
14	Windows and Glazing	2 days	09/01/14 08:00
15	Doors	2 days	13/01/14 08:00
16	Electrics	3 days	15/01/14 08:00
17	Plumbing	2 days	20/01/14 08:00
18	Plastering	2 days	22/01/14 08:00
19	Painting	3 days	24/01/14 08:00
20	Snagging	1 day	29/01/14 08:00
21	Handover	1 day	30/01/14 08:00

5 Task list and Gantt chart for Home Office after linking

A Summary task on a Gant Chart is a special task that includes a set of sub-tasks. It provides a convienient way for you to hide the detail of a progect when it is not needed.



6 Tasks as Summary only for Home Office

To add a sumary task highlight the sub-tasks then on the **Task** ribbon **Insert** group click the **Summary** tool

- ⇨ Once these tasks have been added link them so that they follow each other. Make sure the links are Finish to Start links

- ⇨ From the project create 3 Summary Tasks:

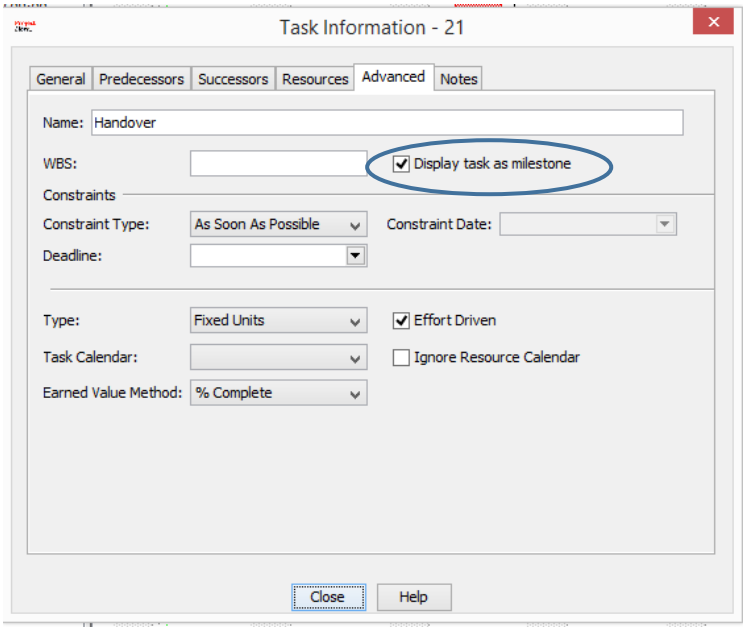
  GroundWork: Level, Drainage, Footings, Blockwork, Concrete Base, Floor, Brickwork

  Roof: Timbers, Felt, Tiles

  Interior: Windows and Glazing, Doors, Electrics, Plumbing, Plastering, Snagging,

A Milestone is an event that marks a critical point in the project. Generally any task that has no duration is marked as a milestone though any task can be.

To mark a specific task as a milestone open the task by double clicking the row then in the **Task Information** dialogue box under the **Advanced** tab tick the **Display task as milestone** check box.



7 Advanced Task Information: Set Milestone

- ⇨ Make the Handover task a milestone.

Creating Resources

Using the information on the worksheet add the resources to the project **Home Office.pod**

Click the **Resource** tab and in the **Views** group click the **Resources** tool. The Resources screen appears. In the **Name** column enter the names of the resources. For the resource **Type** leave the selected at **Work**.

- ⇨ Add the people resource to the project with the parameters supplied.
- ⇨ Save the project as Home Office Resource.pod

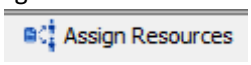
		Name	RBS	Type	E-mail Address	Material Label	Initials	Group	Max. Units	Standard Rate	Overtime Rate	Cost Per Use
1		Labourer		Work			Lab		100%	£20.00/hour	£0.00/hour	£0.00 Pr
2		Carpenter		Work			Chippy		100%	£25.00/hour	£0.00/hour	£0.00 Pr
3		Roofer		Work			Roofer		100%	£25.00/hour	£0.00/hour	£0.00 Pr
4		Electrician		Work			Elec		100%	£25.00/hour	£0.00/hour	£0.00 Pr
5		Plumber		Work			Plumber		100%	£25.00/hour	£0.00/hour	£0.00 Pr
6		Plasterer		Work			Plasterer		100%	£25.00/hour	£0.00/hour	£0.00 Pr
7		Painter		Work			Painter		100%	£25.00/hour	£0.00/hour	£0.00 Pr
8		Foreman		Work			Foreman		100%	£25.00/hour	£0.00/hour	£0.00 Pr
9		Bricklayer		Work			Bricky		100%	£25.00/hour	£0.00/hour	£0.00 Pr

Finally (in this example) enter Bricks as a material. Type **Bricks** in the **Name** column and click the **Type** cell then select **Material**. We will label these items as ,000 in the **Material Label** column since bricks usually come in thousands. In the **Standard Rate** column enter the cost of 1,000 bricks which would be £200.

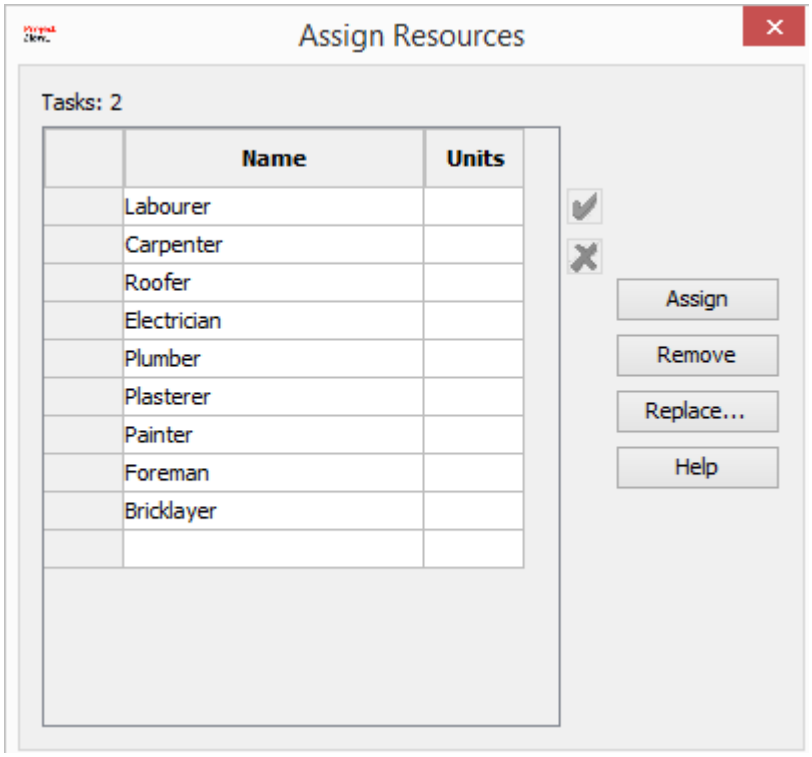
Note: When we assign bricks to the Brickwork task we will need to remember we are assigning them in 1,000s

Assigning Resources

Having entered the resources to the project assign these as appropriate.

Make sure the **Task** ribbon is displayed by clicking on the **Task** tab. To assign a resource to a task first click on the **Task** then from the **Task** group click on the **Assign Resources** tool 

Click **Assign** for each resource allocated to the task selected

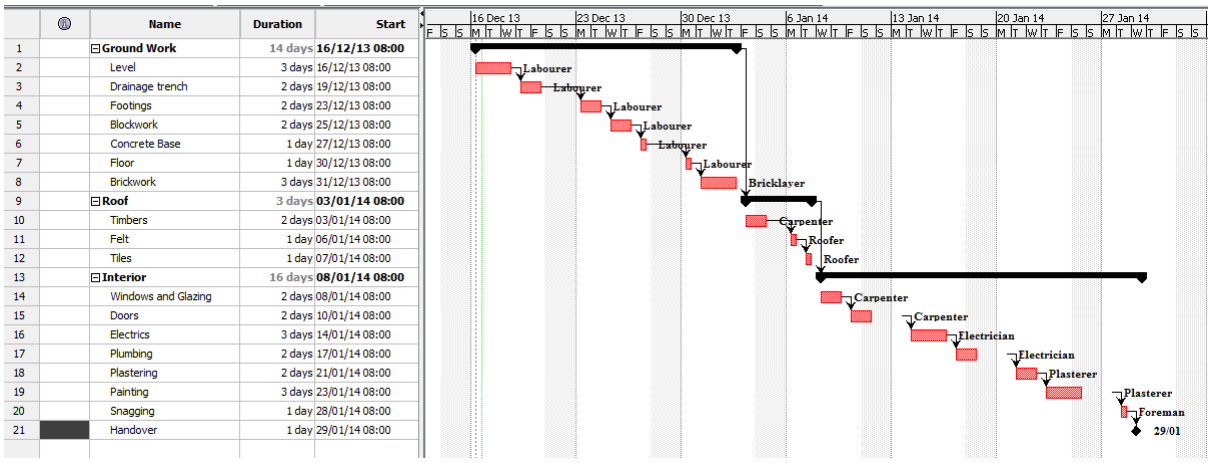


8 Assign Resources Dialogue

Note: The **Assign Resources** dialogue box can remain open while you move through the tasks and you can **Assign Remove** assignments or **Replace** one assignment with another.

You can also make multiple assignments to the same task.

- ⇨ Assign the resources to the tasks as appropriate (see worksheet for details).
- ⇨ Save the project as **Home Office Assigned.pod**



9 Completed Gantt with assignments

Baseline

Having entered all the details of your project generally you are ready to commence work. At this point it is worth setting a point of reference, a **Baseline**. This is a snapshot of what you expect to happen over the life of the project. As with all projects I have attempted things will happen that were not anticipated and often quite out of your control. Comparing the situation as is with the original plan is essential to keeping the project on course. You can set up to 10 baselines in your project perhaps mirroring the phases of your project. At the end of the project you can use the baselines and the final outcome to review your achievements.

ECDL requirements

1 Project Management Tools

1.1 Key Concepts

1.1.1 Understand the term project.

A project is an organised collection of tasks to be executed over a predicted period of time and within certain cost, resource and other limitations.

1.1.2 Recognise the main elements of managing a project like: planning the project, managing the schedule, communicating project information.

The five essential elements of project management are;

Initiate, Plan, Monitor and Control and Close. If these are the bricks of project management then communication is the mortar that binds them.

Initiate

Close

All projects eventually lead to closing, where the project is accepted and brought to an organised end. The two main components of closing are contract closeout, in which any remaining open items are resolved and the contract is settled, and administrative closure, the gathering of documentation to formalize project completion, this phase usually includes some form of critical review. This is often helpful in guiding future projects.

1.1.3 Understand the advantages of using a project management application like: efficient project design, ease of project plan maintenance, effective activity representation, ease of monitoring and reporting.

It is pretty clear to all of us by now that we live in a digital era. Even more than some of us we would choose to. Mobile phones, tablets laptops and PCs are working towards minimizing face to face interaction. So what are the real advantages of Digital Project Management?

Improved estimation.
Having a software do the estimation for you can greatly improve the whole process of estimating the time and resources needed for a particular project. This is often the keystone in project management. It will be there following you though your whole project, and helping you make the right decisions.
Greater control.
Having all your documents on one database (and hopefully backup frequently) can give you greater access and control over all your documents relating the project. This means greater control of the documents whether you are at the office, at home, or have taken a leave of absence because of an emergency. This also means time saved in runs between offices.
Easier tracking.
With digital project management you now have software installed on yours and your employee's computers. That means looking up who is working on what is just a few clicks away. You can easily track your resources and intervene before things get out of hand.
Measuring results and comparing projects.

When all is said and done, you have to see what has been achieved, and just as importantly what has not been achieved. If you manage some independent projects and wish to see which one has been better, or simply look back on finished projects and see if your team is making any progress your software solution will be there to help you find answers.

1.1.4 Understand the tools and features of a project management application like: Gantt chart, network diagram, work breakdown structure.

???

1.1.5 Recognise that managing projects involves balancing work, time, resource, and cost.

You can have it good, fast, or cheap. Pick two!

Engineers have been saying this to project managers for decades.

In slightly different terms, every project balances a "triangle" of time, money, and scope you can't change one without affecting at least one of the others. The project manager's job is to keep the whole triangle from falling apart.

All projects involve a compromise, usually cost and time are the biggest constraints. Project management software helps the visualisation of these constraints.

Time + money + scope = quality

The project triangle is also known as the "iron triangle" or the "triple constraints." Whatever it is called, it amounts to the same thing: You can't change a project's budget, schedule, or scope without affecting at least one of the other two parts. **[Scope=Features]**

Examples of how this works

> To bring in the finish date (time), you could spend more in resources (money) to finish the work faster or cut features (scope) so there's less work to do before the new deadline.
>
> To finish the project under budget (cost), you could get rid of overtime and finish the project later (time) or cut features (scope).
>
> To add features to a product (scope), you could extend the deadline to make time for the new work (time) or add people to get it done faster (cost). You could also do both!

In most projects, at least one side of the triangle is fixed in place. It can't be changed.

Maybe the budget is non-negotiable. Maybe the product absolutely has to go on live by a certain date. Maybe both are true.

2 Project Creation

2.1 Working with Projects

2.1.1 Open, close a project management application. Open, close projects.

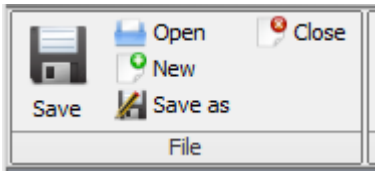
Launching ProjectLibre

Ubuntu Linux: In the **Search** programs box type **Project** > Click on the **ProjectLibre** icon. If you prefer drag the icon to the side bar

Windows 7: Click **Start** > **All Programs** > **ProjectLibre** > **ProjectLibre**

Windows 8.1: Launch **ProjectLibre** by typing the application name on the **Start Screen**

2.1.2 Save a project to a location on a drive. Save a project under another name to a location on a drive.

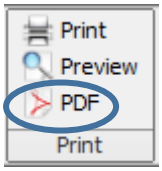


You are prompted to enter the name of your project on startup. This is automatically saved to your documents file. To change the destination or file type select the **File** tab and in the **File** group click **Save as.** You can save a file as either a ProjectLibre (.pod) file or a Microsoft XML (.xml) file

2.1.3 Save a project as another file type like: template, web page, spreadsheet, CSV, XML, text file, pdf.

If you want to change the name or location of your file then

On the **File** tab **File** group click **Save As** and in the dialogue box enter the new **File name.** Select from the **Files of type** dropdown the type of file required either a ProjectLibre (.pod) file or a Microsoft XML (.xml) file. To save your project as a .PDF file use the **PDF** tool in the **Print** group of the **File** ribbon

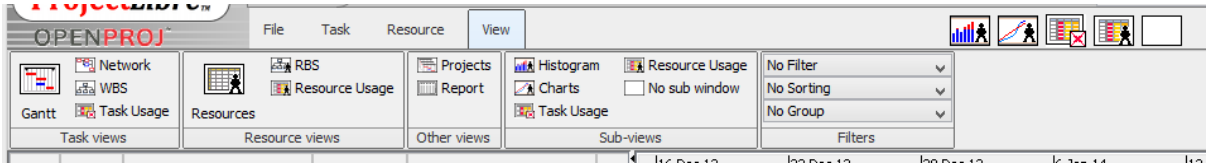


Save as PDF

2.1.4 Change between project view modes like: Gantt chart, network diagram.

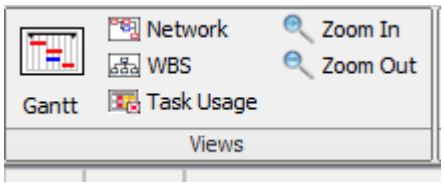
There are two ways of doing this

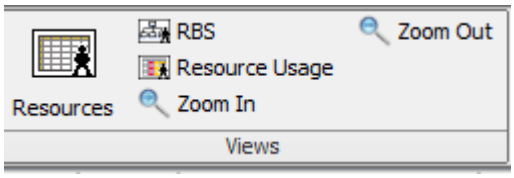
From the **View** ribbon use the tools in the **Task, Resources** or **Other Views** group to select the view required



Alternatively select the view required from the **View** tools on the right of the **Tab Bar**

2.1.5 Use magnification/zoom tools.





10 Zoom from Resources Views

11 Zoom from Task Views

2.2 Starting a New Project

2.2.1 Create a new project based on default template, other available template.

From the **File** menu (Sometimes called the back stage view) select **New** then select a blank project, a template option or other desired project option.

2.2.2 Understand how choosing to schedule from a start date, finish date will impact on the project schedule.

Note: Nearly all projects should be scheduled from a known start time. Even if you know the date that a project must be completed, scheduling from a start date will give you maximum flexibility.

When you create a new project, you first enter the project's start date. When you schedule a project from the start time, all tasks start at the project start date unless you specify otherwise.

For both manually and automatically scheduled tasks, with no task dependencies or constraints, the project's duration is the same as the duration of the longest task. In other words, the project finish date is the same as the longest task's finish date.

Task dependencies, such as the finish-to-start dependency between the first and second tasks can change the project's finish date. E.g. for two tasks where the start of the second task begins with the end of the first task the end of the project is the end of the second task.

There are however, occasions where you might want to schedule from a finish date:

1. You need to determine when a project must start so that it finishes on a specific required date.
2. You are not sure when your project will begin (for example, you are receiving work from another source that could be delayed).
3. Your companies project management methodology requires you to schedule from a finish date.

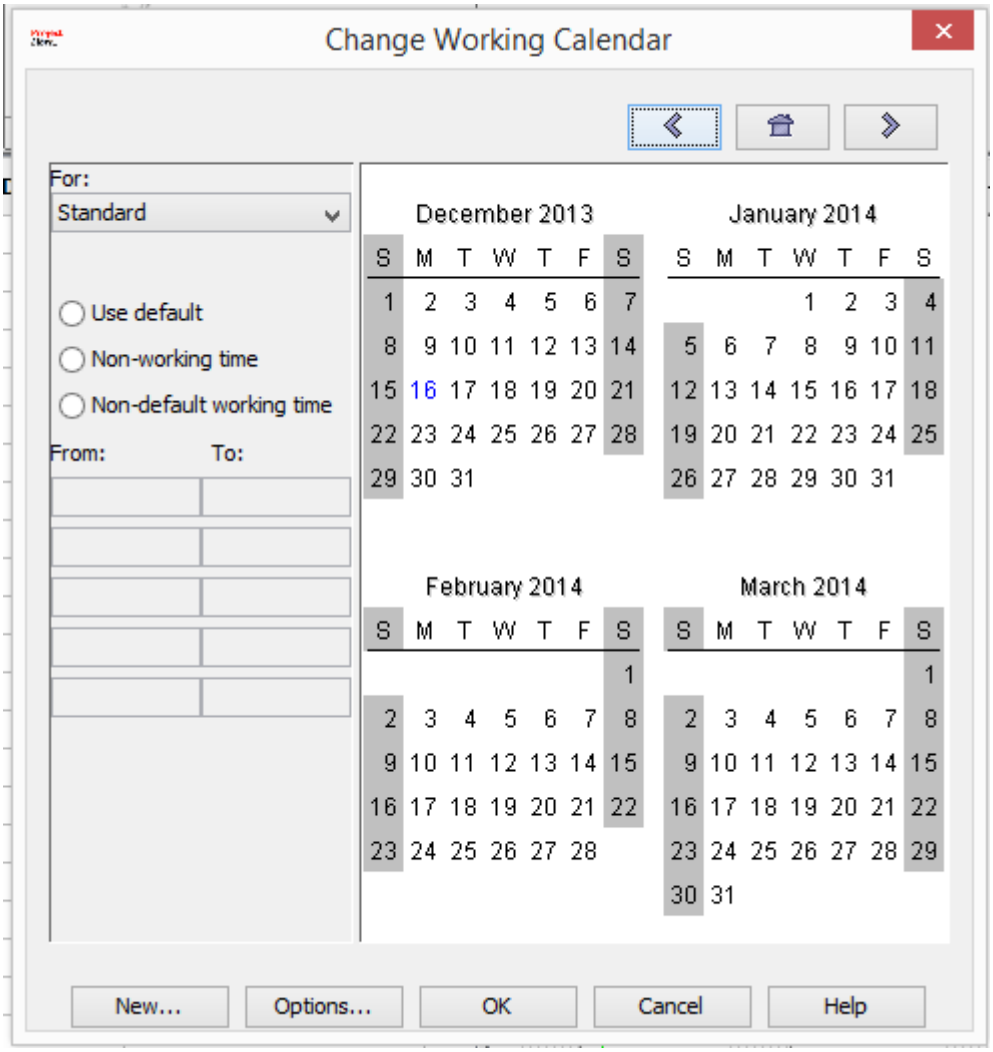
If you work with your project that is scheduled from a finish date, you need to understand the differences in the way that Project handles some actions:

1. When you enter an automatically scheduled task, Project automatically assigns the **As Late As Possible** (ALAP) constraint to the finish date of the task. You should set other constraints only when necessary (By right-clicking a task, then click **Task Information**).
2. If you drag a Gantt bar to change the finish date of a task, Project automatically assigns a **Finish No Later Than** (FNLT) constraint for an automatically scheduled task.
3. If you change your project to schedule from a finish date and it was previously scheduled from a start date, you will remove all **levelling delays** and **levelling splits** from tasks and assignments that have been automatically scheduled. Tasks that are manually scheduled are not affected.
4. If you use automatic levelling to reduce resource **over allocations** in your project, Project will add a levelling delay after a task rather than before a task (To check levelling settings, click the **Resource** tab, and then click **Level Resource**).

2.2.3 Enter basic project information such as start date or finish date, scheduling options and project properties like: project title, project manager.

The **finish date** is the date that a task is scheduled to be completed. This date is based on the task's start date, duration, calendars, predecessor dates, task dependencies, and constraints.

2.2.4 Set up calendar options like: base calendar, working time, nonworking time.


Change Working Calendar
For:
Standard
Use default
Non-working time
Non-default working time
From:
To:
December 2013
January 2014
February 2014
March 2014
New...
Options...
OK
Cancel
Help

3 Tasks

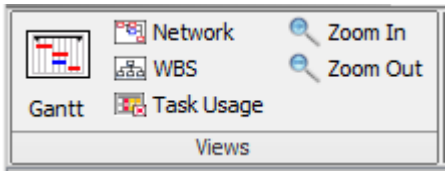
3.1 Creating Tasks

Tasks are the activities which must be completed in order to complete the project. Tasks form the basis of the project plan. Before entering the tasks into the project it is a good idea to produce a list of these tasks and ensure this is as detailed as possible. It makes life easier if the list of tasks are entered in the order they will be performed.

Don’t make the mistake of generating this list with only a few people. Involve all the Stakeholders!

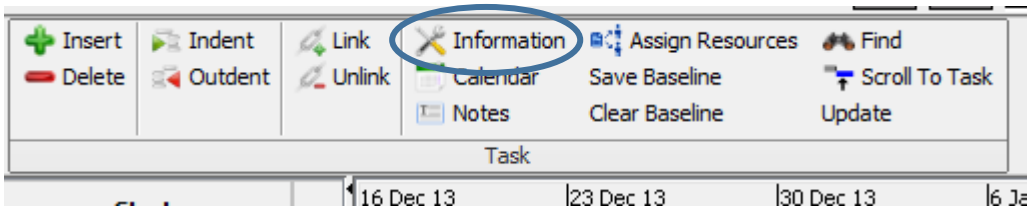
3.1.1 Create, modify tasks.

It is usual to start entering tasks in Gantt Chart View. To display this click the **Task** tab to display the **Task** ribbon then in the **Views** group click the **Gantt** tool.



Before entering the task decide on the **Task Mode** to use **Manually Scheduled** tasks rely on the user to enter the start and finish dates. They are not updated by ProjectLibre and do not link to other dependencies. Choosing this option can make things very time consuming. The default, **Auto Schedule** automatically calculates the start and finish dates, along with the duration based on dependencies, constraints, calendar and other factors. On the spreadsheet side of the display enter the name of the task in the **Name** column add the duration of the task in the **Duration** column and the start date, if known, in the **Start** column

A task can be modified either by changing the data directly on the Gantt chart, or by using the

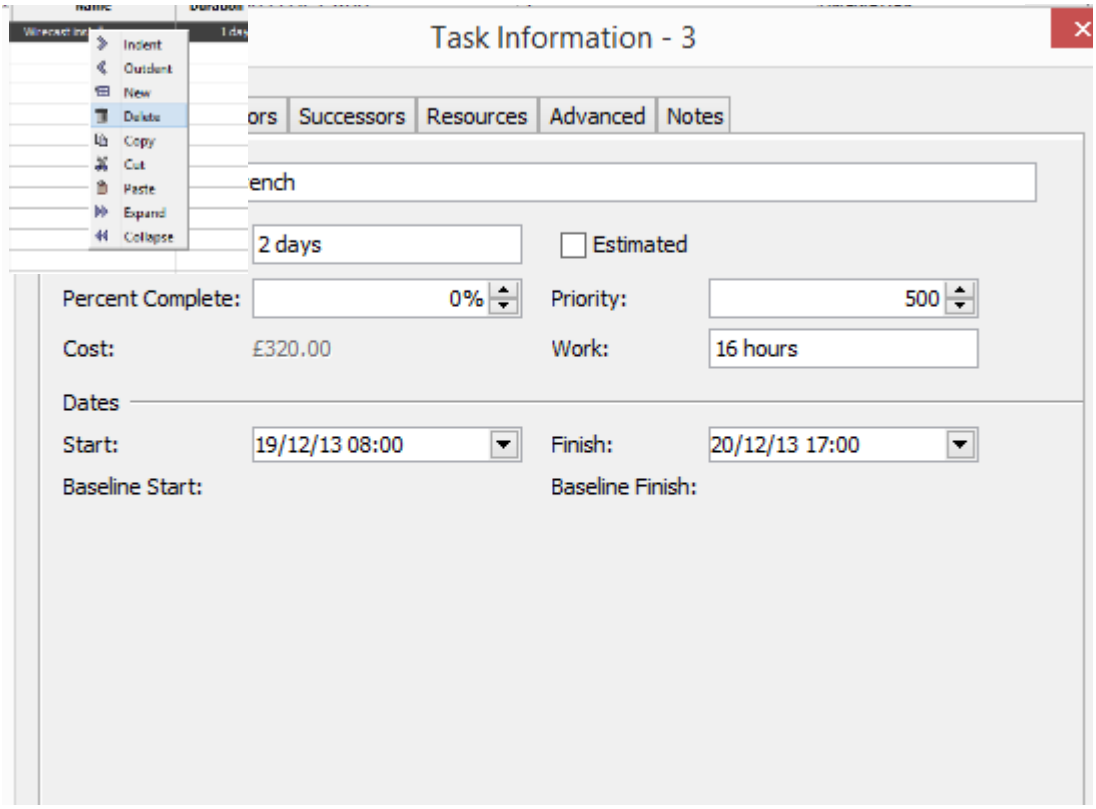


Information tool dialogue box, which is found in the **Task** ribbon **Task** group.

3.1.2 Copy, move, delete tasks.

A task can be copied moved and deleted from the Gantt chart view. The column representing the task is

13 Task Information tool

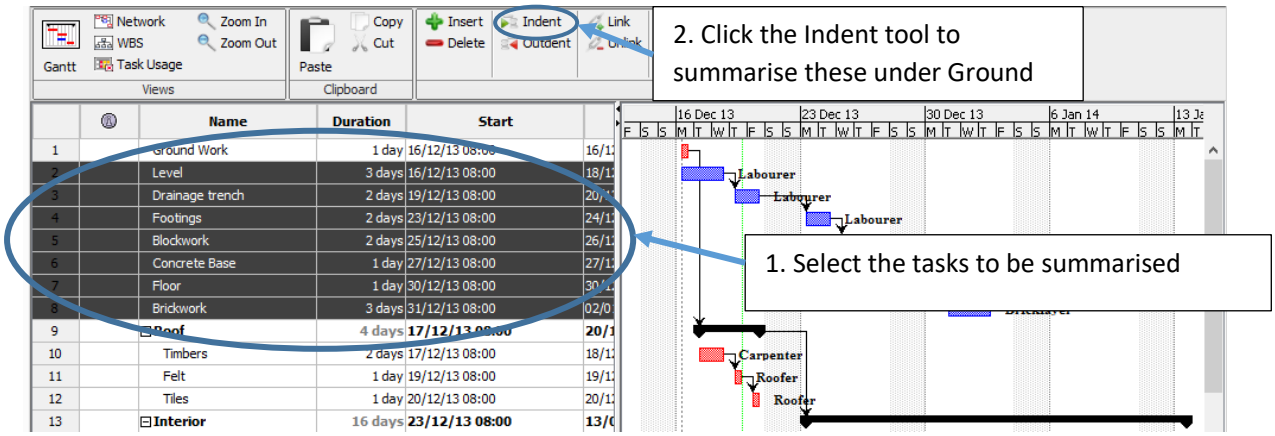


12 Task Information Dialogue Box

selected with the mouse pointer in the task number column. The row selection pointer changes to a move pointer and the task can be dragged to its new location. To Delete the task completely either right click the mouse and select **Delete Task**, or use the **Clear** tool in the editing group on the **Task** ribbon. Click **Entire Row**.

3.1.3 Create, modify, view subtasks and summary tasks.

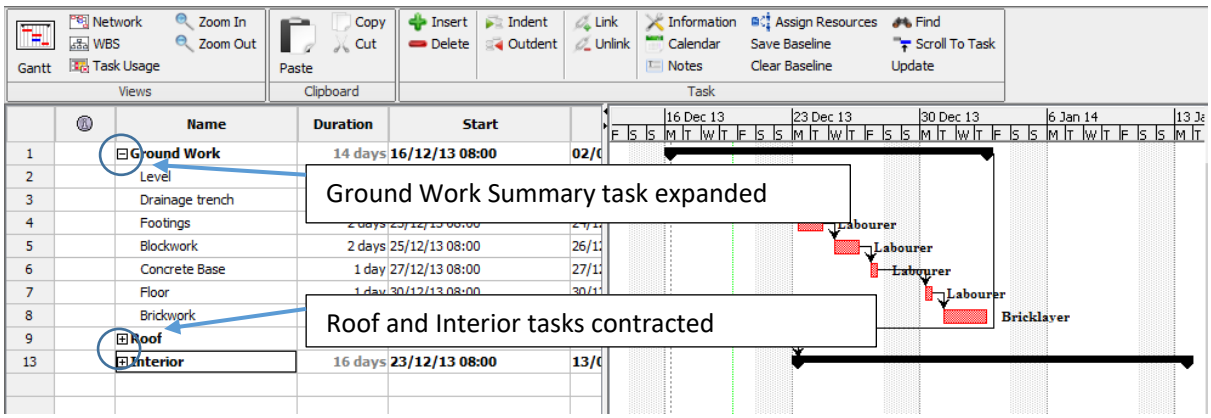
A Task can be made a Summary Task of a set of other successor tasks by selecting the successor tasks and



14 Creating a Summary task

then indenting them using the **Indent** tool on the **Task** group in the **Task** ribbon.

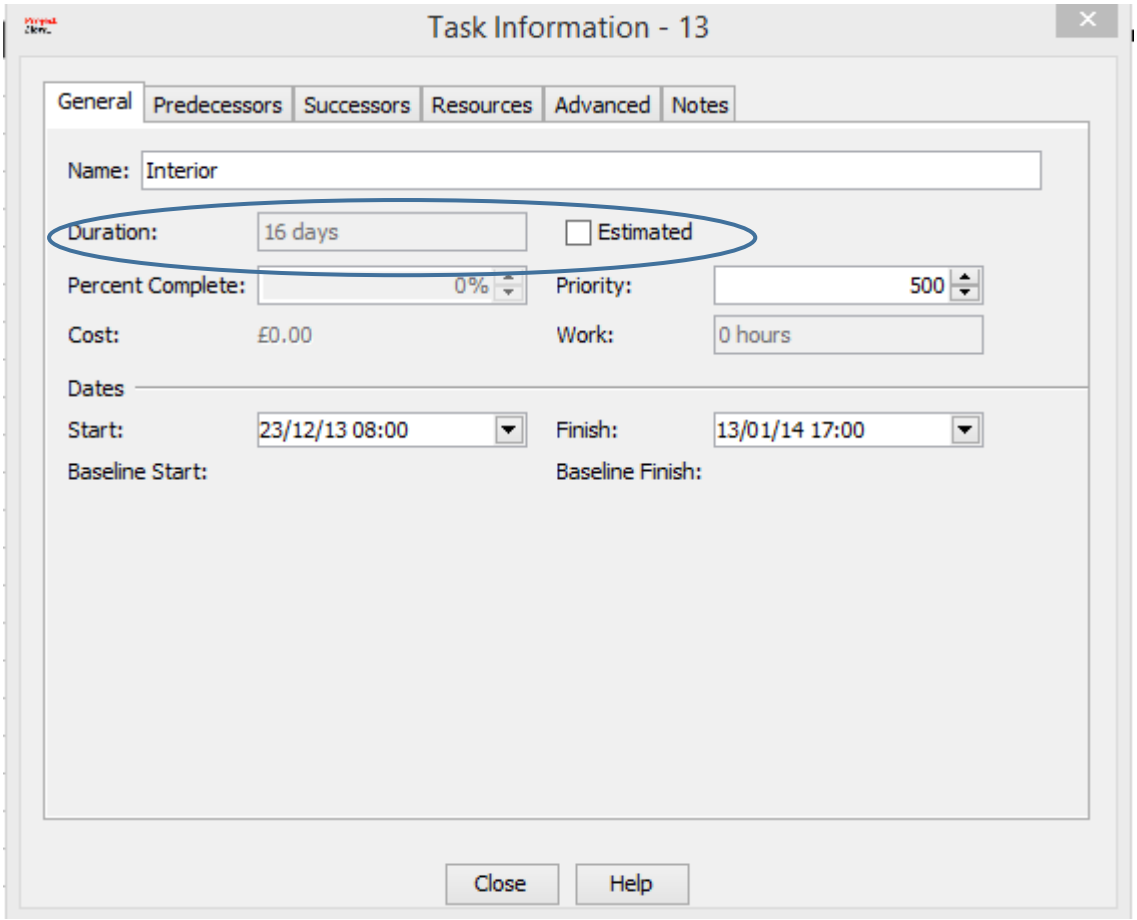
To remove a task from a summary task simply use the Outdent tool



3.1.4 Understand task duration options: elapsed, duration, effort, estimated.

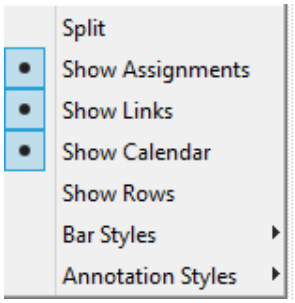
Task Duration information is found in the **Task Information** Dialogue. To display this click the **Task** tab and in the **Task** group click the **Information** tool.

3.1.5 Set, modify task duration.



3.1.6 Split tasks.

In order to split tasks use the Gantt chart to select the task then right click the mouse and select **Split.**



15 Task Shortcut menu in Gantt view

This tool generates a Split marker that will split the task when you move the cursor.

3.1.7 Understand the term milestone.

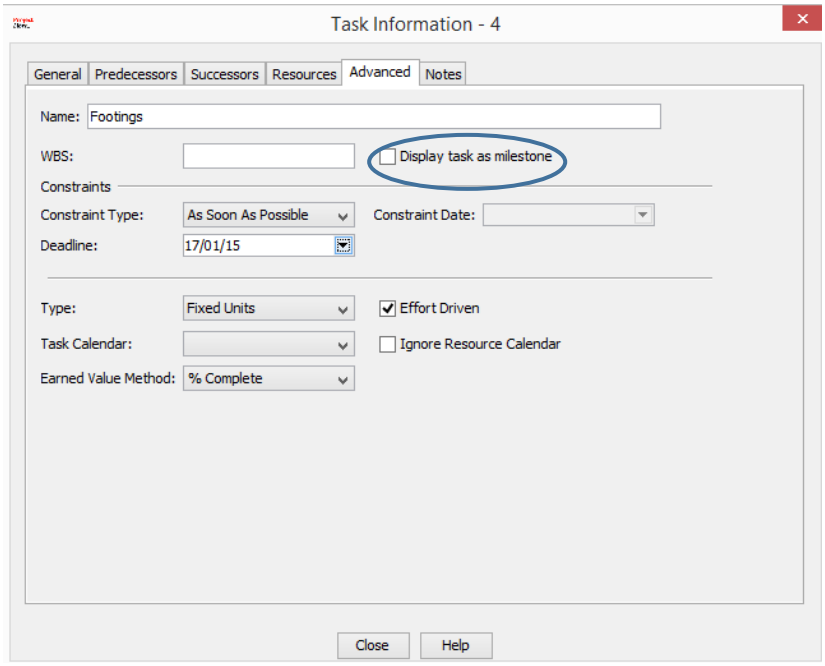
3.1.7 Understand the term milestone.

A milestone is an event that marks a critical point in the project.

3.1.8 Create project milestones.

To mark a task as a milestone first display the Gantt chart view by clicking the Task tab then click on the **Gantt** view tool in the Views group.

Select the task you want in the **Name** field, and then use the **Information** tool in the **Properties** group. Display the Advanced dialogue by clicking the **Advanced** tab. Tick the **Display task as a milestone** tick box.



It is also possible to add a milestone as a task in its own right.

Select the **Gantt** view

Type the milestone name in the first empty row or pick a task you want to turn into a milestone.

Type 0 in the Duration field, and then press Enter.

Any task that has a 0 duration is by default set as a milestone.

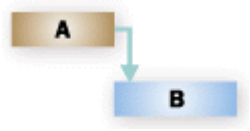
3.1.9 Create, modify recurring tasks.

Currently ProjectLibre does not support recurring tasks.

3.2 Scheduling and Relationships

3.2.1 Understand logical relationships between tasks: finish to start, start to start.

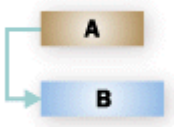
Finish-to-Start link (fs)



Task B can't start until Task A is done. This is the default link type in Project, and the most commonly used.

Example: Dig foundation (Task A) must be complete before your team can start Pour concrete (Task B).

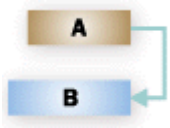
Start-to-Start link (ss)



Task B can't start until Task A starts. They don't have to start at the same time: Task B can begin any time after Task A begins.

Example: To save time, you want to level concrete at one end of the foundation while it is still being poured at the other end. But Level concrete (Task B) can't start until Pour concrete (Task B) has also started.

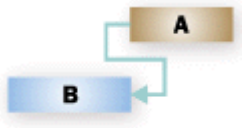
Finish-to-Finish link (ff)



Task B can't finish until Task A is done. They don't have to end at the same time: Task B can end any time after Task A ends.

Example: Your team is adding the wiring to the building and inspecting it at the same time. Until Add wiring (Task A) gets done, you won't be able to finish Inspect electrical (Task B).

Start-to-Finish link (sf)



Task B can't finish until Task A begins. Task B can finish any time after Task A begins. This type of link is rarely used.

Example: The roof trusses for your building are built off-site. You can't finish Assemble roof (Task B) until Truss delivery (Task A) begins.

3.2.2 Create, modify, delete relationships between tasks: finish to start, start to start.

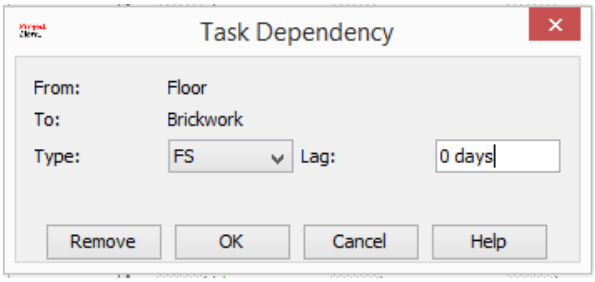
To create a link between two tasks **highlight the first task** then, while holding the **Ctrl** key, **highlight the second task**. Finally from the **Task** ribbon use the **Link** tool in the **Task** group to create the link. Unlinking simply involves **selecting the tasks** as before and then clicking the **Unlink** tool.

When you link two tasks, Project creates a finish-to-start dependency between them. By default the second task can't start until the first task finishes. This is only one of the four possibilities as shown below.

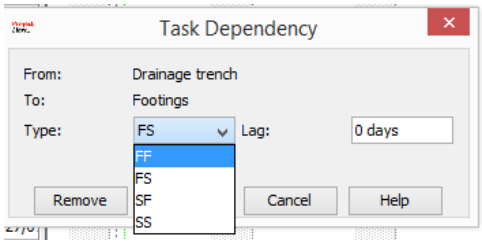
To change a link type:

Click View > Gantt Chart.

Double-click the link line between the two tasks.



Pick a dependency type from the Type list.



FF finish to finish

FS finish to start

SF start to finish

SS start to start

To get rid of the link entirely, click **Remove** from the Task Dependence dialogue box.

3.2.3 Understand the terms lead time, lag time.

Lead time

Lead time is an overlap between two tasks that are linked by a dependency. For example, if a task can start when its predecessor is half finished, you can establish a finish-to-start dependency and specify a lead time of 50% for the successor task. You enter the lead time as a negative value.

Lag time

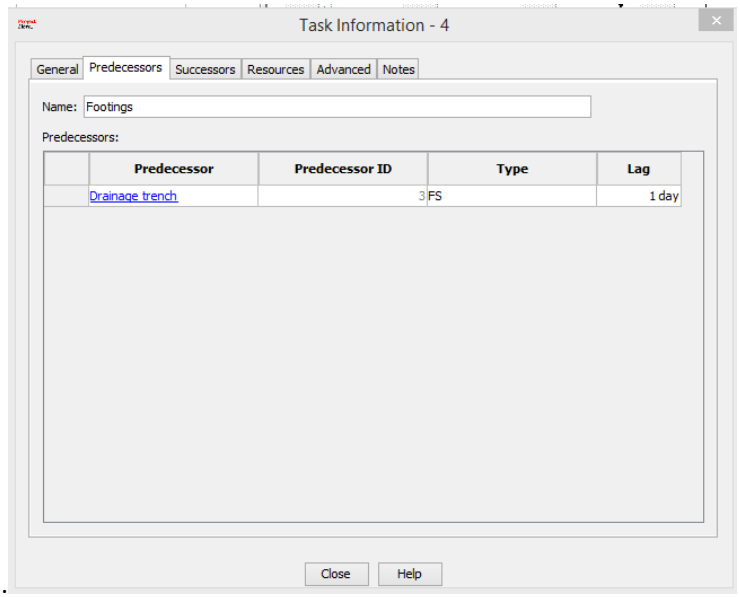
Lag time is a delay between two tasks that are linked by a dependency. For example, if there must be a two-day delay between the finish of one task and the start of another, you can establish a finish-to-start dependency and specify two days of lag time for the successor task. You enter the lag time as a positive value. Adding lag time is a way to add slack (also called "float" or "buffer") to a task, increasing the amount of time the task can be delayed before it affects the start of another task.

3.2.4 Add, edit task lag time, lead time.

Note: You can set lead time or lag time between tasks only after creating task dependencies.

Click on the **Gantt Chart** view tool to display the Gantt chart view.

Select the task you want in the **Task Name** field, and then use the **Information** tool in the **Properties** group. Display the Predecessors dialogue by clicking the **Predecessors** tab

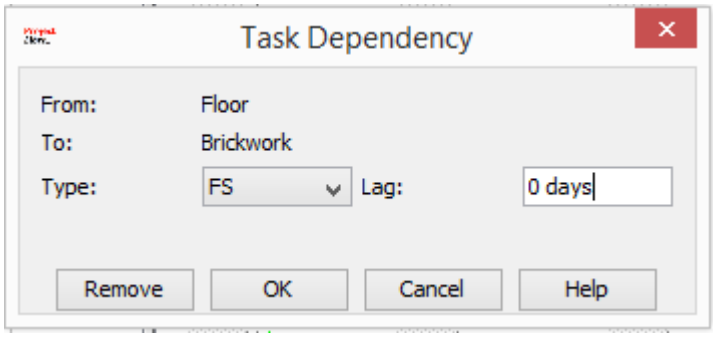


16 Task Information Predecessors

In the **Lag** field, type the lead time or lag time you want as a duration or as a percentage of the predecessor task duration.

To enter lead time, type a negative number or negative percentage, such as -2d for two days of lead time. To enter lag time, type a positive number or percentage, such as 50% for half the predecessor task's duration in lag time.

Note: You can quickly add lead time or lag time to a successor task by **double-clicking the link line** on the **Gantt Chart** view and entering the lead time or lag time in the **Lag** field.



3.3 Constraints and Deadlines

3.3.1 Understand task constraint options like: as late as possible, as soon as possible, must finish on, must start on.

Note: In nearly all cases, use the ASAP constraint. This gives the scheduling engine the most flexibility in determining the ideal finish date for your project.

There are two ways to instantly view the constraints on your tasks.

1. To review or change the constraint on a task, right-click on the task, click **Task Information** , then click the **Advanced** tab. Constraint information is in the **Constraint type** and **Constraint date** boxes.
2. If the constraint is anything other than ASAP or ALAP, the constraint type will display its associated graphical indicator in the Indicator column in any sheet view, such as the Gantt chart.

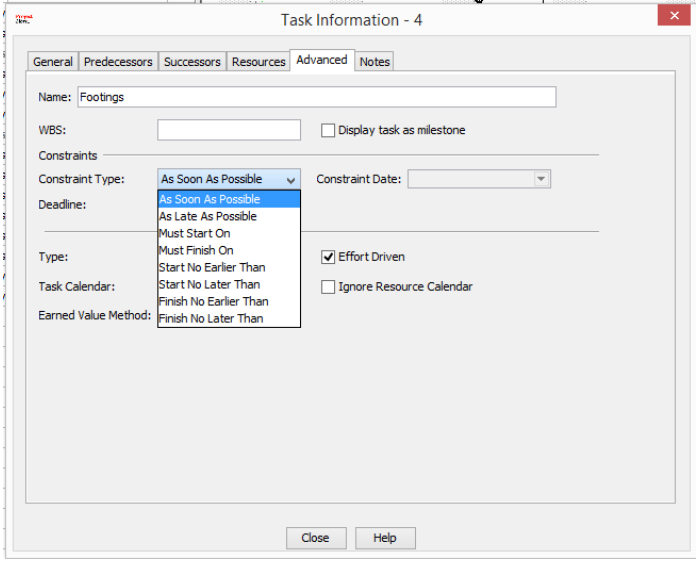
Constraints with moderate scheduling flexibility will restrict a task from starting or finishing before or after a date you choose. For example, a task with a **Start No Earlier Than** (SNET) constraint for June 15 and a **finish-to-start** dependency to another task can begin June 15 if its predecessor is finished by June 15 (or later if its predecessor finishes after June 15), but it can't be scheduled before June 15. For example, this might be appropriate use of constraints if you have a building permit that is only good for a specific dates. In this case, the SNET or FNLT constraints might be used.

Note: It's easy to confuse task dependencies (the links that show a relationship between two tasks) with task constraints (the restrictions on when a task can start or finish).

3.3.2 Add, modify, delete constraints to tasks.

Click on the **Gantt Chart** view tool to display the Gantt chart view.

Select the task you want in the **Task Name** field, and then use the **Information** tool in the **Properties** group. Display the Predecessors dialogue by clicking the **Advanced** tab. Select the parameters as appropriate. The dialogue box below shows the **Constraint type** options.



A

3.3.3 Understand the term deadline.

Deadline is a target date showing when you want a task to be completed. If the **deadline** date passes and the task is not completed then ProjectLibre will displays an indicator.

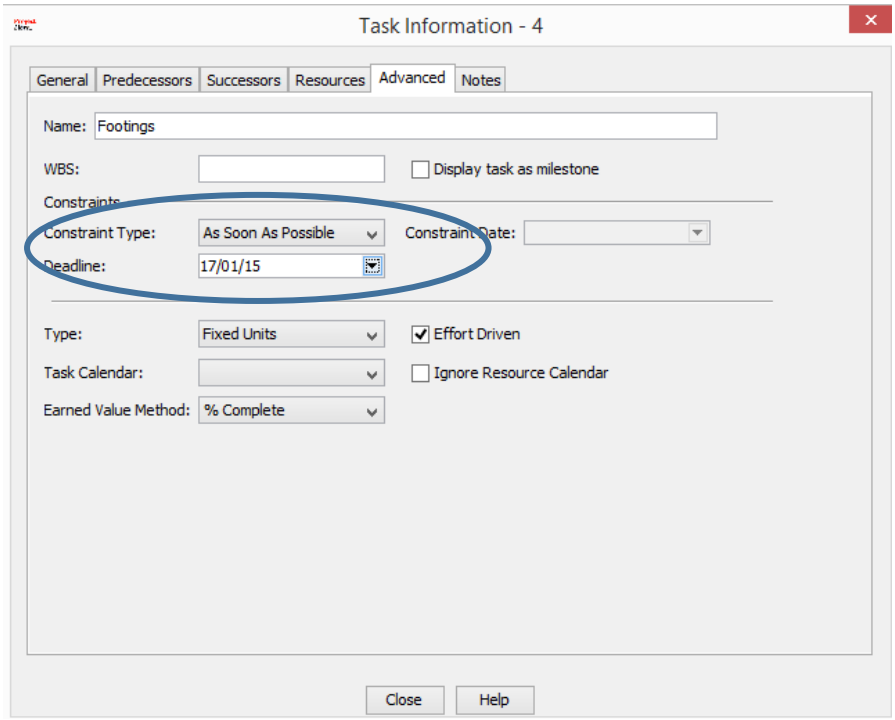
Deadlines are used if you want certain tasks in your project to finish by specific target dates and you don't want these dates to actually affect how Project schedules the tasks. Setting deadlines will allow ProjectLibre to alert you if the tasks are not completed on time.

3.3.4 Create a deadline.

To create a deadline

Select the **Gantt Chart** view. Then double click on the **Task** itself. This opens the task information dialogue box

In the **Task Information** dialogue box select the **Advanced** tab finally you can select the deadline date from the calendar opened with the **Deadline** dropdown.

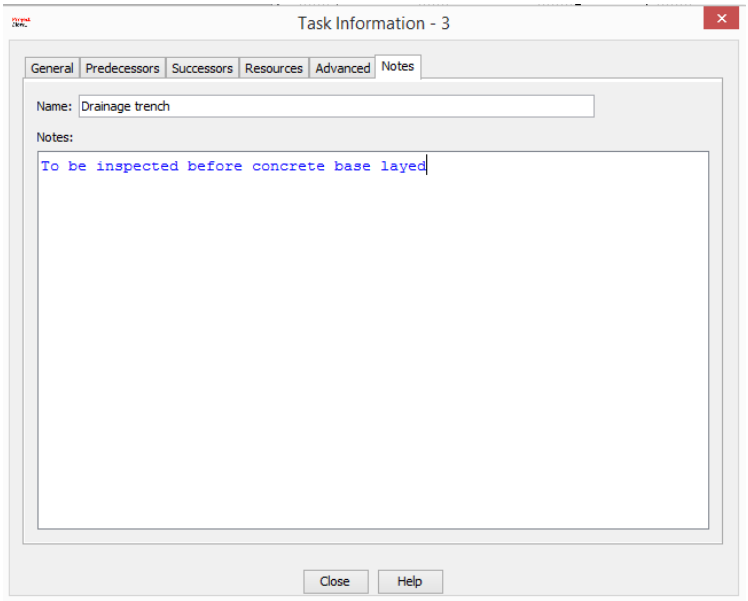


3.4 Notes, Hyperlinks

3.4.1 Add, edit, remove a note for a task.

Click on the **Gantt Chart** view tool to display the Gantt chart view.

Select the task you want in the **Task Name** field, and then use the **Information** tool in the **Properties** group. Display the Predecessors dialogue by clicking the **Notes** tab. Add the note in the **Notes** window. The dialogue box below shows the text Test lights and sound.



3.4.2 Insert, edit, remove a hyperlink for a task.

Currently ProjectLibre does not support hyperlinks

4 Resources and Costs

4.1 Resources

4.1.1 Identify resource types like: people, materials, equipment.

Project operates with the types of resources Work and Material.

A work resource: People and equipment resources that perform work to accomplish a task. Work resources consume time [hours or days] to accomplish tasks.

Material resources: Consumable materials or supplies, such as concrete, wood, or nails.

4.1.2 Understand the relationship between duration, work and resource. Understand that if one element changes there is an impact on another element.

The calculation of Work, Duration, and Units is one of the biggest issues for new users of Project. This calculation is *the* core of what Project does and it cannot be turned off. So it is important to understand it.

Duration = Work/assignment Units

the assignment Duration (in hours) is equal to the assignment Work (in hours) divided by the assignment Units value**.**

4.1.3 Recognise risk factors which may affect the delivery of the project like: non-availability of resources, natural disaster, policy changes.

There are very many risks that can cause a project to fail.

4.1.4 Create, delete resources. Modify resource details like: name, type, units, rates.

The most usual way to add a resource is to use the resource sheet view. To access this click the **View** tab and in the **Resource Views** group, click **Resources** tool. Alternatively click the **Resource** tool on the Resource ribbon.

To add a resource enter its name in the **Resource Name** field. If you want to designate resource groups, then in the **Group** field for the resource name, type the name of the group.

Specify the resource type.

To specify that this resource is a work resource, in the **Type** field, click **Work**.

To specify that this resource is a material resource, in the **Type** field, click **Material**. In the **Material Label** field, type the name for the units associated with the resource, for example, **yards**, **tons**, or **boxes**.

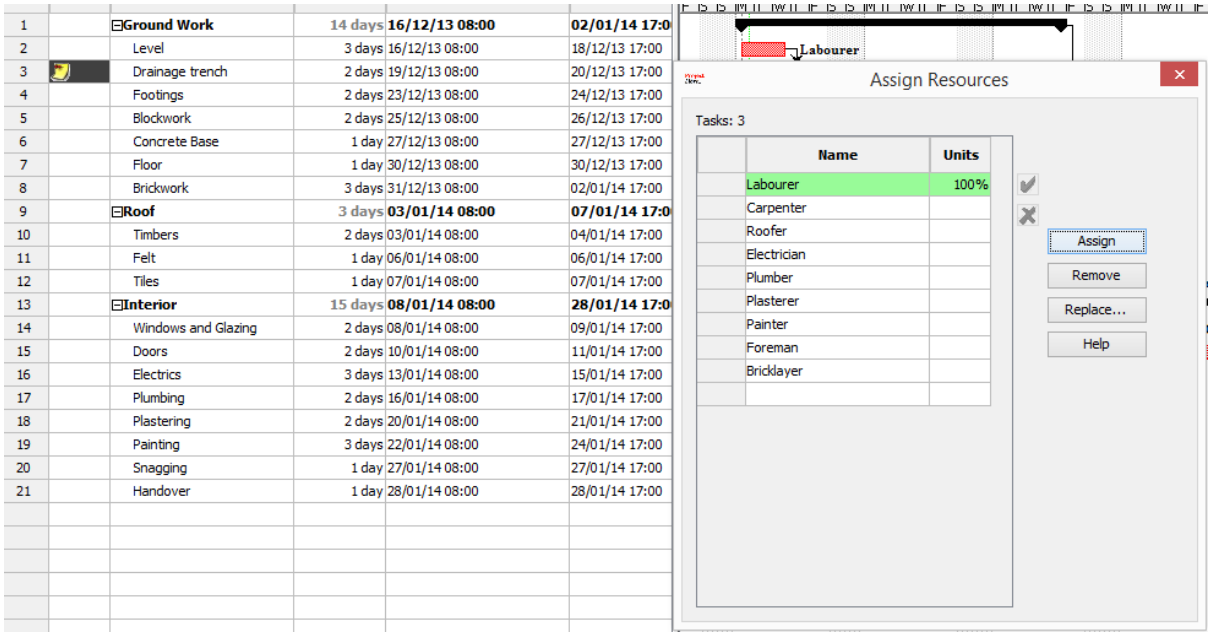
In the **Max. Units** field for the resource, type the number of total units that this resource is available for this project. The maximum units value specifies how much of this resource is available for this project for example, part-time or multiples.

For example, if you have a resource who is available for your project two days a week, you can enter a maximum units value of **40%** ie 2 out of the 5 days. You can use maximum units to specify multiple availability of a resource designation. For example, suppose you have a resource named *Engineers*, a single resource that represents three individual engineers on your team. You can enter the maximum units for *Engineers* as 300%. You can schedule all three engineers for full-time work at one time without the *Engineers* resource being flagged as over allocated.

You can enter maximum units as a percentage (**50%**, **100%**, **300%**), or as a decimal (**0.5**, **1**, **3**).

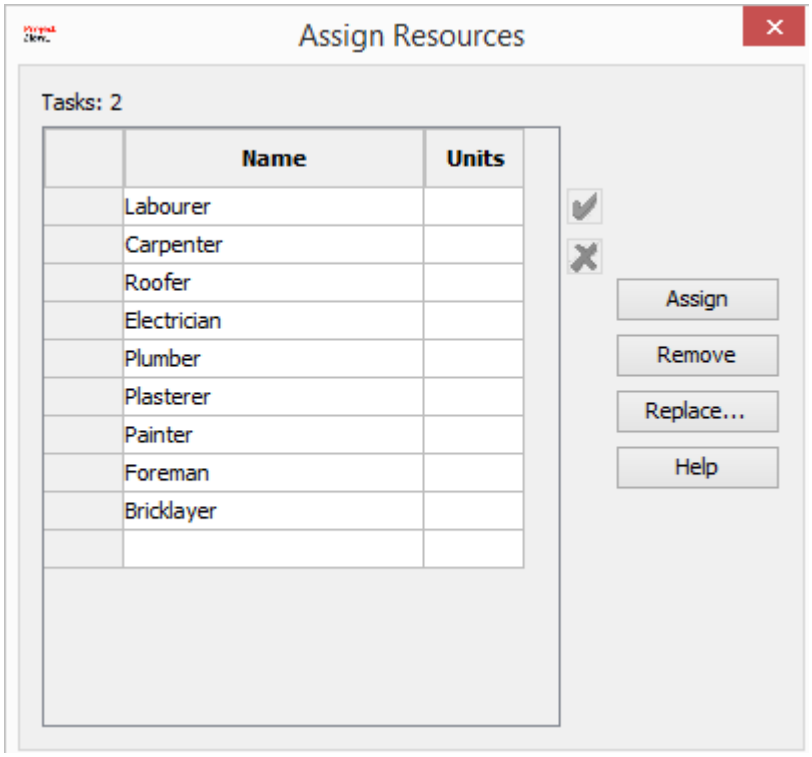
4.1.5 Add, remove, replace resource assignments and associated units.

To assign a resource use the **Gantt Chart** view. Then display the **Resource** ribbon and use the **Assign Resources** tool in the **Assignments** group. This will display the resources for the project. Select the resources you want to allocate (Using the **Ctrl** key if the resources are non-contiguous). Click **Assign** in the **Assign Resources** dialogue box.



		Ground Work	14 days	16/12/13 08:00	02/01/14 17:0
2		Level	3 days	16/12/13 08:00	18/12/13 17:00
3		Drainage trench	2 days	19/12/13 08:00	20/12/13 17:00
4		Footings	2 days	23/12/13 08:00	24/12/13 17:00
5		Blockwork	2 days	25/12/13 08:00	26/12/13 17:00
6		Concrete Base	1 day	27/12/13 08:00	27/12/13 17:00
7		Floor	1 day	30/12/13 08:00	30/12/13 17:00
8		Brickwork	3 days	31/12/13 08:00	02/01/14 17:00
9		**Roof**	3 days	**03/01/14 08:00**	**07/01/14 17:0**
10		Timbers	2 days	03/01/14 08:00	04/01/14 17:00
11		Felt	1 day	06/01/14 08:00	06/01/14 17:00
12		Tiles	1 day	07/01/14 08:00	07/01/14 17:00
13		**Interior**	15 days	**08/01/14 08:00**	**28/01/14 17:0**
14		Windows and Glazing	2 days	08/01/14 08:00	09/01/14 17:00
15		Doors	2 days	10/01/14 08:00	11/01/14 17:00
16		Electrics	3 days	13/01/14 08:00	15/01/14 17:00
17		Plumbing	2 days	16/01/14 08:00	17/01/14 17:00
18		Plastering	2 days	20/01/14 08:00	21/01/14 17:00
19		Painting	3 days	22/01/14 08:00	24/01/14 17:00
20		Snagging	1 day	27/01/14 08:00	27/01/14 17:00
21		Handover	1 day	28/01/14 08:00	28/01/14 17:00

By default Project assumes the resource will be used in full so the units column will display 100%.

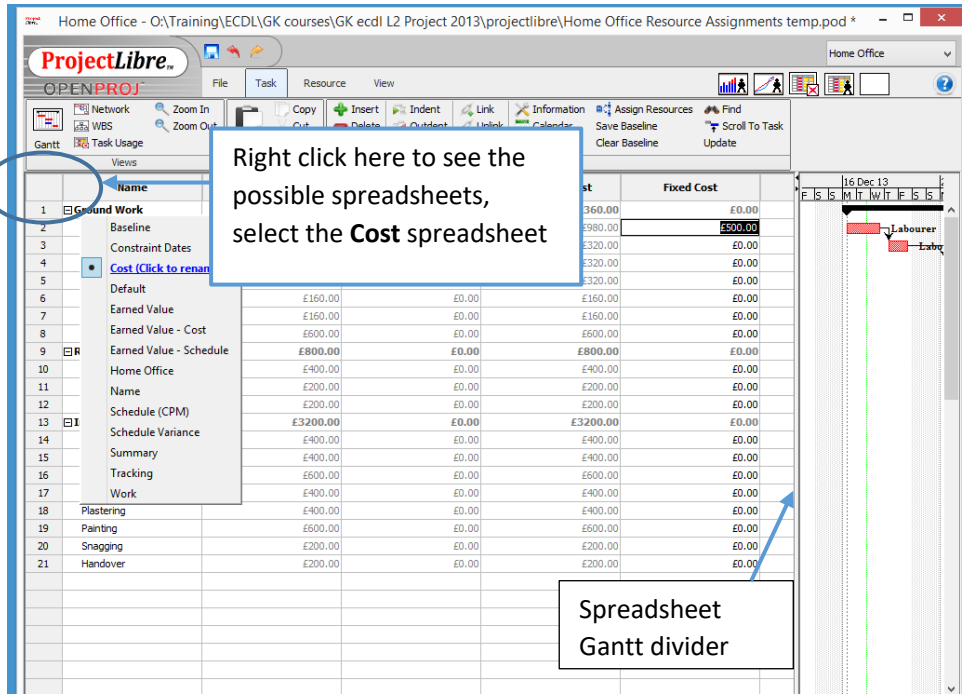


Note: With this dialogue box you can also **Remove** or **Replace** Resources

4.2 Costs

4.2.1 Understand the terms fixed cost, variable cost.

A **fixed cost** is a set cost for a task that remains constant regardless of the task duration or the work performed by a resource.



17 Adding fixed costs

A **variable cost** are referred to as rate-based resource costs. In most projects these costs are mainly made up of people costs.

4.2.2 Assign, modify fixed costs.

If you have costs that aren't associated with any rate-based people or material resources, or other variable resource costs, you enter them on the cost spreadsheet as above.

To do this click **Gantt** tool on the **Views** group of the **Task** ribbon. Focus on the spreadsheet on the left side. In the top left of the spreadsheet corner square right click. You now have a spreadsheet list. From this list select the **Cost** spreadsheet. You may have to move the **Spreadsheet / Gantt** divider to see the **Cost** column

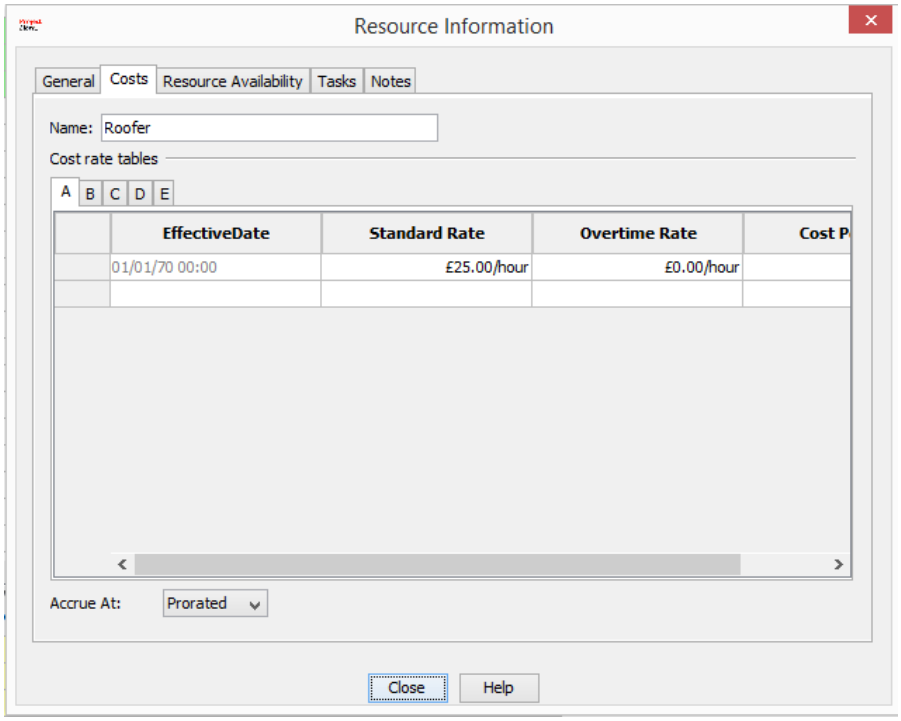
In the task **Name** column, select the task for which you want to enter a fixed cost.

In the **Fixed Cost** column, type a cost amount.

In the **Fixed Costs Accrual** column, cost accrual is by **End** default, but you can pick **Start** or **Prorated** to accrue the fixed cost at the start, end or prorated.

4.2.3 Assign, modify variable costs.

In **Resource** sheet view select the **Name** of the resource in the **Name** column. Set the resource type to **Work** enter the standard rate for the resource in the **Std. Rate** column. For more control over the cost entry use the **Information** tool in the **Resource** group to display the **Resource Information** dialogue box. Note: You can also access this by double clicking the **Resource** in the **Name** column.



5 Project Monitoring

5.1 Critical Path

5.1.1 Understand the terms critical task, critical path.

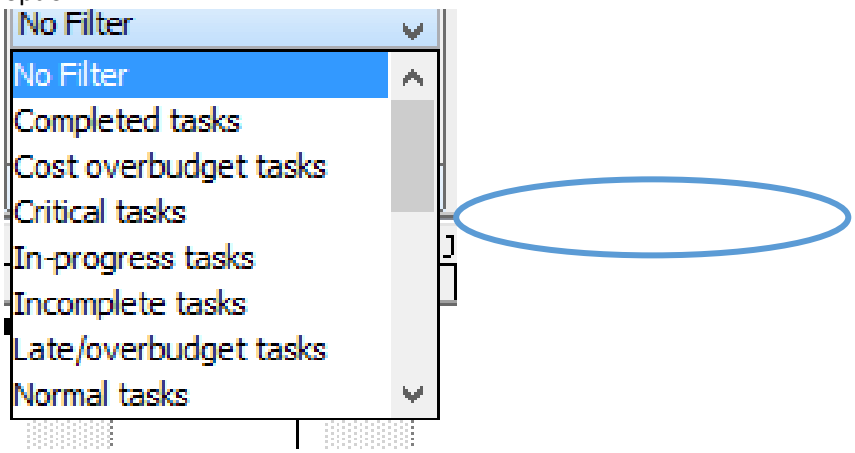
Definition of *critical task*: A task or activity that lies on the critical path of the schedule, which if delayed will delay the completion of the project.
Definition of *critical* path: Longest sequence of activities in a project plan which must be completed on time for the project to complete by the due date.

5.1.3 Identify critical tasks and show the critical path.

Every task is important, but only some of them are **critical.** The critical path is a chain of linked tasks that directly affects the project finish date. If any task on the critical path is late, the whole project is late.

To show the critical path on the Gantt Chart

Click the **View** tab to display the **View** ribbon click the **Filter** in the **Filters** group. Display the **Critical Tasks** option.



18 Critical tasks filter option

Tasks on the critical path now have red Gantt bars.

5.2 Monitoring Progress and Rescheduling

5.2.1 Understand that collecting and analysing progress information is essential to controlling a project.

Collecting and analysing progress information is essential to controlling a project.

5.2.2 Recognise that regular project meetings inform stakeholders of issues to be resolved and anticipated difficulties.

Regular project meetings inform stakeholders of issues to be resolved and anticipated difficulties.

5.2.3 Create, save, and clear a baseline.

A baseline contains all the key information that makes up your project: tasks, resources, assignments, and costs.

A baseline is required for tracking your project. Usually you would want to complete your project setup as much as possible before you set a baseline. The original parameters it contains are the reference point against which you can compare the progress of your project.

Once you save a baseline, you can track progress by viewing the variances between baseline estimates and scheduled data. For example, if you estimate a task cost of £70 but record a scheduled cost of £90, the cost variance is £20. As you monitor variances you are more able to take steps to keep your project on track. Baseline information, and variances calculated from it, are used in a variety of views in Project. To see these effects in a sheet view, apply the Variances table or the Tracking table.

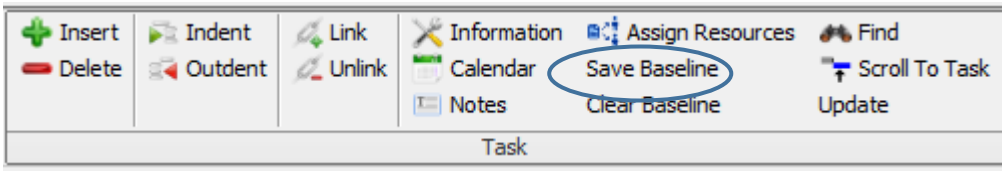
Note: you can't track unless you have something to track against. So if you didn't enter resource costs before you saved a baseline, you will not be able to view resource-cost variances, and so on.

If baseline information consistently differs from the current data then it is likely that the original plan is inaccurate. Often this is caused by changing the scope of the project.

Note: A baselines in Project is a key tool for comparing actual progress with your original plans. Only by making these comparisons can you tell if your project really is on track.

A baseline is a group of almost 20 primary reference points (in five categories: start dates, finish dates, durations, work, and cost estimates) that you can set to record the original project plan when that plan is completed and refined. As the project progresses, you can set additional baselines (to a total of 10 for each project) to help measure changes in the plan. For example, if your project has several phases, you can save a separate baseline at the end of each phase, to compare planned values against actual data.

To set a baseline display the **Task** ribbon then in the **Task** group click the **Save Baseline** tool



Pick the baseline you want to set. Usually the First.

Click **Entire Project**.

Note: You can set as many as 10 baselines in a single project. Do this to get frequent snapshots of where things stand.

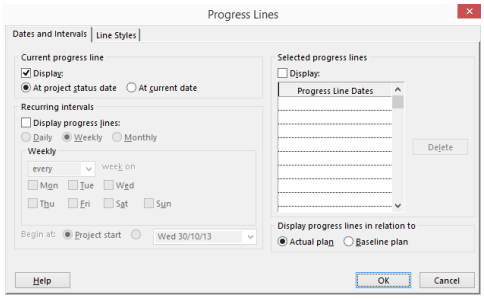
Note: You don’t need to take any special steps to save the baseline. When you save your project, the baseline is saved with it.

Note: You can remove all the data from a baseline by clearing the baseline. You may want to do this if, for example, the project has been completed and you want to use the project plan as a template for a future project. Project removes all the baseline values from the project plan. You cannot remove some baseline values but leave others.

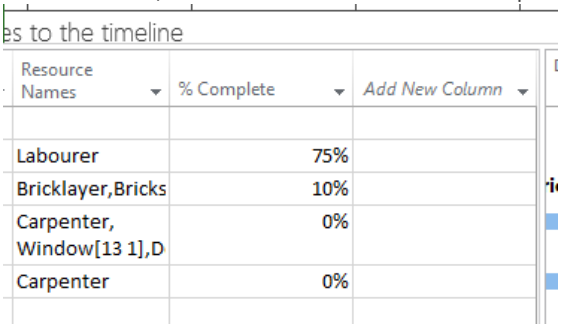
5.2.4 Show, hide progress line.

Unless you want to view the progress lines at the current date then firstly you set the status date. This tool is in the **Project** ribbon in the **Status** group. Click the **Status Date** tool and select the desired date.

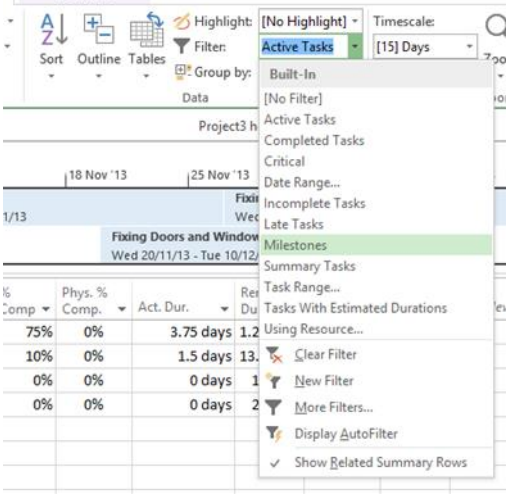
Having decided on a date move the mouse pointer into the **Gantt Chart** area and right click then click the **Progress Lines** tool. Click the **Display** check box in the **Progress Lines** dialogue box.



5.2.5 Show, hide columns like: %complete, fixed cost, deadline.

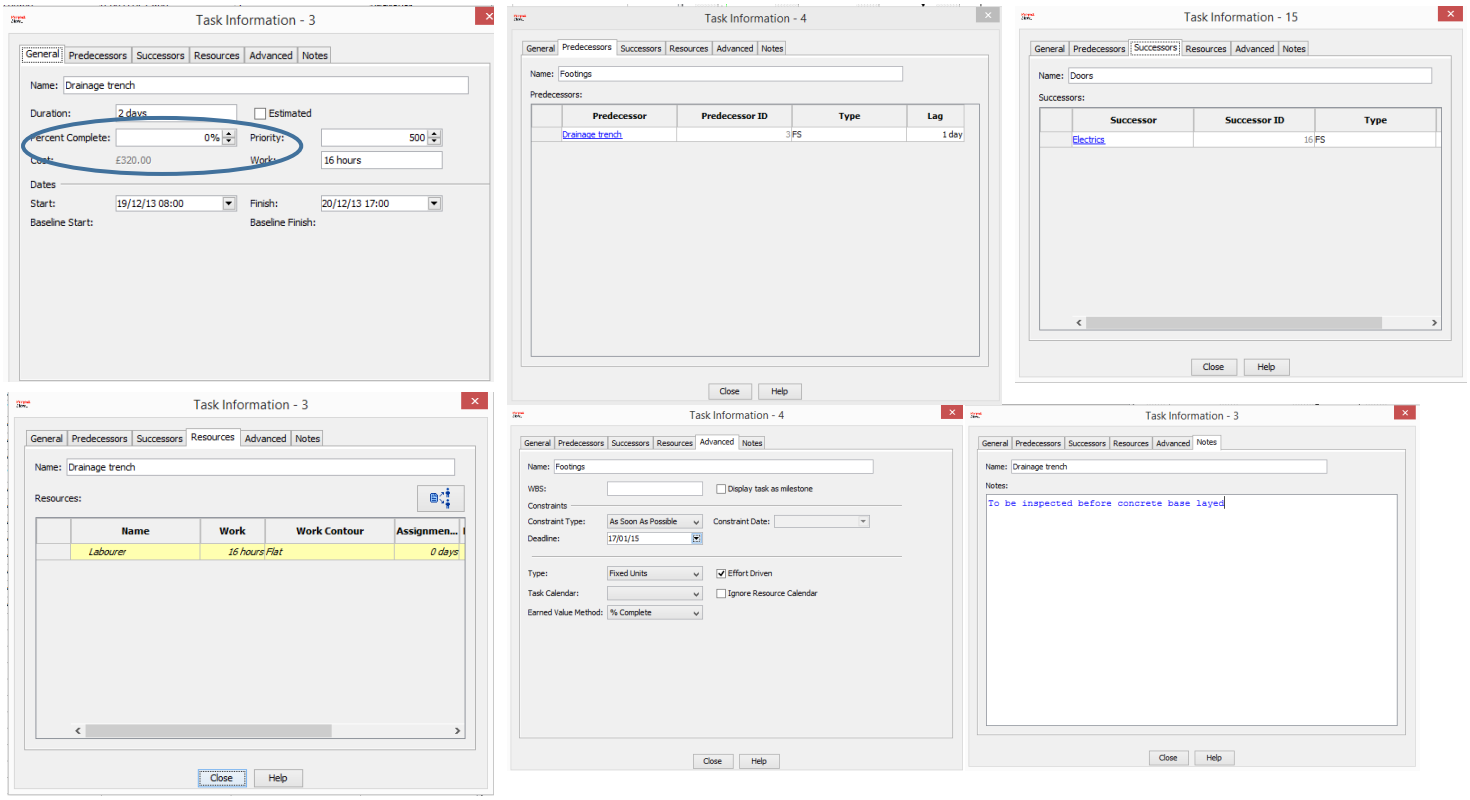


5.2.6 Sort, filter tasks.



5.2. 7 Update task progress.

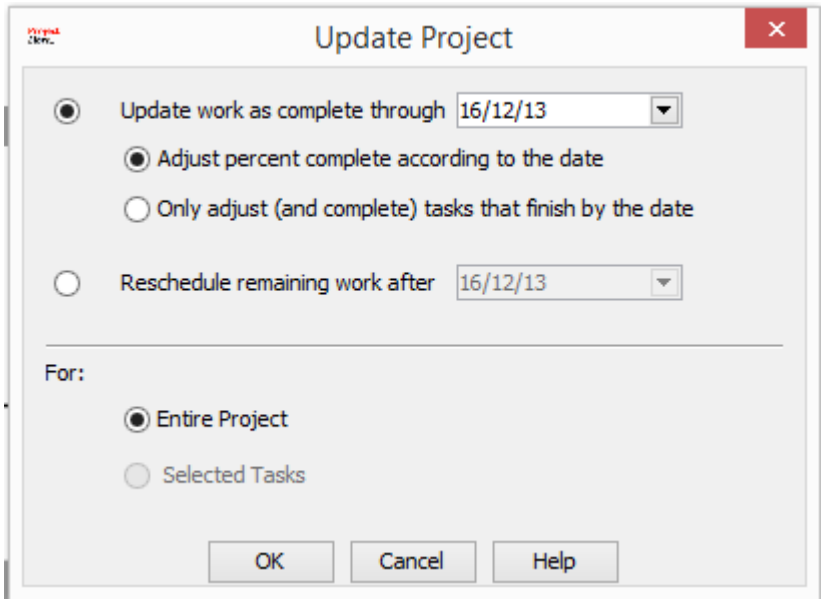
Update task progress is found in the Task Information dialogue box. You display this from the **Task** ribbon **Task** group **Information** tool



19 Task Information dialogue boxes

5.2.8 Reschedule incomplete work.

On the **File tab** in the **Project** group select the **Update** tool. This displays the **Update Project** dialogue box. From here check the **Reschedule remaining work after** radio button. Set the date as required.



5.2.9 Display current project schedule and baseline.

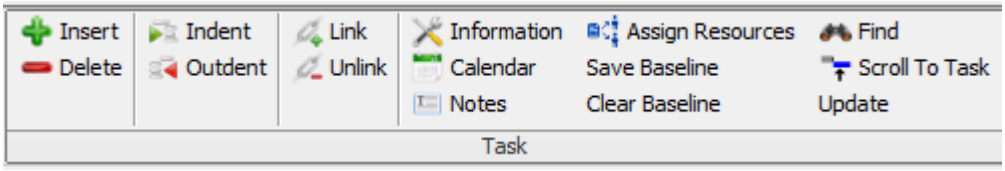
First ensure you have created a baseline. **Task** tab **Task** group **Save Baseline** tool.

The baseline remembers all the parameters set in project at that point in time.

The Original project is displayed as a grey shadow under the current Gantt line

Note: It is best if your project is as complete as possible before you set the baseline. This will insure your project monitoring is as efficient as possible

Once the baseline has been set it is then possible to compare the current project schedule relative to that baseline.



Colour codes for the horizontal bars are:

Blue – Current tasks

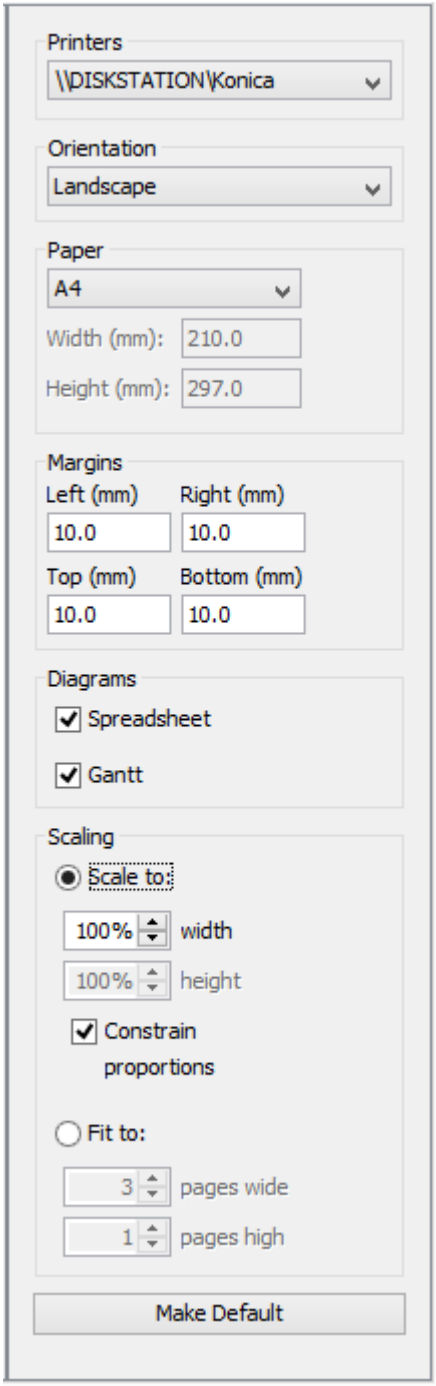
Grey Baseline

Red Critical tasks

6 Prepare Outputs

6.1 Setup

6.1.1 Change page orientation: portrait, landscape. Change paper size.



Page Orientation is set in the Preview dialogue box.

6.1.2 Change page margins: top, bottom, left, right.

Page Margins are set in the Preview dialogue box Margins, seen above.

6.1.3 Prepare a Gantt chart, network diagram for print using options like: columns to print, notes.

Please can someone help me with this?

6.2 Print

6.2.1 Preview a Gantt chart, network diagram, report.

In order to preview a Gantt Chart, Network diagram WBS or other view it is first necessary to select the appropriate view then click **File > Preview**. The preview is then displayed in the preview window. From the Preview window you can create a pdf of your work or indeed print it using the options in the Preview dialogue

6.2.2 Print a Gantt chart, network diagram, report from an installed printer using output options like: entire document, specific pages, number of copies.

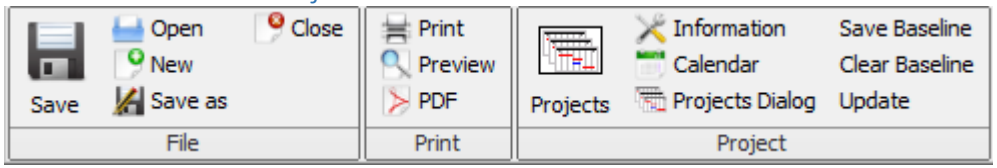
Provided a printer is installed, select the view you want click the **File** tab then click **Preview** to check what you will print and maybe set the options shown above. If you're happy click **Print** or to get a .pdf document click **PDF**

Printing options (**Settings**) allow the printing of the entire project, specific dates and specific pages. It is also possible to print a range of pages covering a particular timescale.

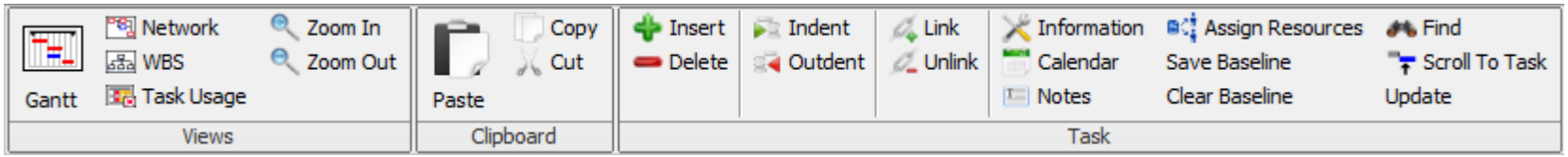
Multiple copies can also be printed.

Project Ribbons

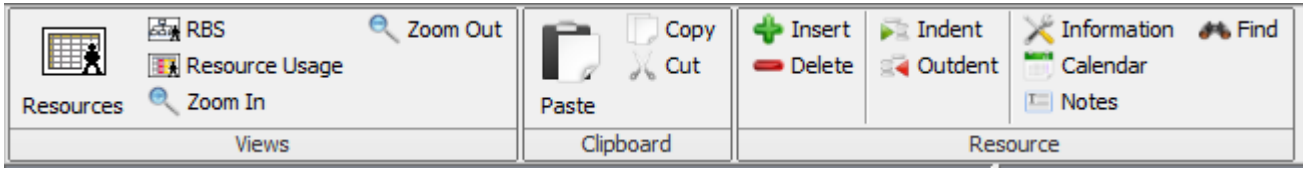
The File menu in ProjectLibre



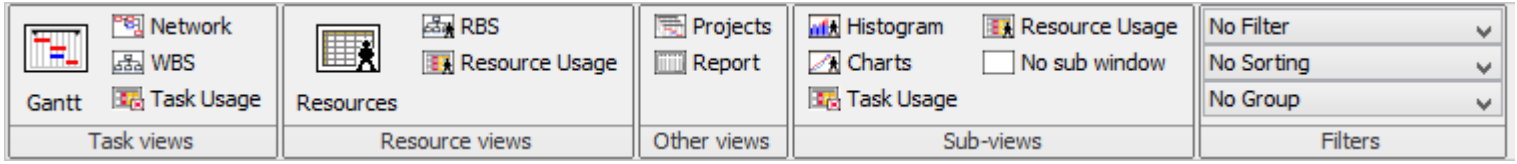
Task Ribbon



Resource Ribbon



View Ribbon



Glossary

Assignment	A particular resource that is assigned to a particular task.
Baseline	An approved plan for the project (schedule)
baseline plan	These are the original project plans [up to 10 per project] used to track progress on a project. The baseline plan is a snapshot of the schedule at the time that you save the baseline and includes information about tasks, resources, and assignments.
CCB	Change Control Board
Change Management	A project management plan to control the scope of the project and to keep it on course
Gantt Chart	A graphical display of the schedule
Levelling delay	The amount of time that an assignment or task is to be delayed from the original scheduled start date as a result of resource levelling or of manually entering a levelling delay.
Master Project	A project containing other projects [known as inserted projects or subprojects]. Also called a consolidated project.
Milestones	A significant point in time or an event. Usually identified with a black diamond.
Over allocation	The result of assigning more tasks to a resource than the resource can accomplish in the working time available.
PDF	Portable Document Format
Project Life Cycle	Initiating Planning Executing (Including Monitoring and Controlling)
RBS	Resource Breakdown Structure
Risk Mitigation	Risk response planning techniques associated with threats. Designed to reduce their probability and/or impact.
Schedule	The timing and sequence of tasks within a project. A schedule consists mainly of tasks, task dependencies, durations, constraints, and time-

	oriented project information.
Split Task	A task whose schedule is interrupted. For example, a two-day task that does not require contiguous work days might be split so that the first day of work is scheduled for Monday, and the second day is scheduled for Thursday.
Stakeholders	People or organisations actively involved or affected by the project
Triple Constraint	
WBS	Work Breakdown Structure. A model of the project in a hierarchical structure.

Table of Figures

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