Primavera Tutorial

Contents

1.	Introduction	2
2.	Getting Started	4
3.	Entering Your First Activities	10
4.	Establishing Your Layout	13
5.	Developing The Programme	25
6.	Organising The Programme	
	6.1 Organizing by Work Breakdown Structure	32
	6.2 Organizing by Activity Code	43
7.	Filtering the Programme	51
8.	Resources	57
9.	Progress Reporting	70
10.	Conclusion	81

Exercises

Appendix A

1. Introduction

This guide is intended as a beginners guide to Primavera. By the end it, you should be able to confidently enter information into Primavera, and be able to present it in a sharp and meaningful manner.

This guide will also look at resources, multiple layouts, progress reporting, filters and target programmes.

The assumption when writing this guide is that Primavera has already been loaded onto the user's computer. Further, it assumes no knowledge of Primavera by the user, but it does presume a level of computer literacy in the user.

The first thing to note about Primavera, and to bear in mind as you work through this tutorial, is that it saves every change made while you work. As such there is no simple "undo" button – any changes made can only be reversed by re-entering the data. When you exit the programme the only thing that you are asked to save is the layout that you have defined: everything else has been auto-saved.

A recommended way of using this guide is to follow the steps first on the example provided, then on a project which has more relevance to you. Primavera does allow you to have more than one project open at any one time – simply open or create another project and you can move between the <u>two projects</u> at will by selecting the project from under the "Window", tab at the top of the page.



2. Getting Started

The first step is to open the installed programme:



Select the Primavera Project Planner icon in the Primavera programme folder.

Once Primavera has been opened, your welcome screen should look something like this....



Note: you may be asked for a User Name and password. Unless defined otherwise in the set up, your password is the same as the user name. The user name is as defined in set up.

Page 5 of 82

A.Blakey February 2002

To start on your first	programme yo	u need	to select	the menu	"File"
and Option "New"					-

Tools Help		
New	Ctrl+N	2
Open	Ctrl+0	
Send Mail		-
Receive Mail		
1 C:\P3WIN\PROJECTS\STGE	OR~1\SGA0	-
2 C:\P3WIN\PROJECTS\STGE	OR~1\SGA1	
3 C:\P3WIN\PROJECTS\TRL\/	ACTUAL\A001	
4 C:\P3WIN\PROJECTS\TRL\/	ACTUAL\ST90	
Exit	Alt+F4	

This will open this menu on-screen:

Add a New Projec	:t		×
Current folder:	c:\p3win\projects		Browse
Project name:			
Number/ <u>V</u> ersion:			
Project <u>t</u> itle:			
<u>C</u> ompany name:			
Planning <u>u</u> nit:	Day 💌	Project <u>s</u> tart:	06FEB02 -
Workdays/week:	5	Project must <u>f</u> inish by:	_
Wee <u>k</u> starts on:	Monday 🗾	D <u>e</u> cimal places:	2 🗸
Add this new pro	oject to a project group		
Project group:	_	Project <u>I</u> D:	
		Add	Cancel Help

Project Name: This is a 4 character code that will identify your programme. It can be any alphanumeric character.

Note that the new project will be saved in the folder c:\p3win\projects. It is good practice to set up a "Project" folder which will keep the project files together in one place. The reason for this is that a Primavera project consists of 24 individual files: a single folder containing several projects would have hundreds of files in it!

Number/Version: This indicates the revision number of the programme.

Project Title: This is the title of the current project

- **Company Name:** This is the name of the company for whom this work is being done.
- Planning Unit:This is the planning unit of the programme: it is
the minimum duration (except 0) of any activity.
It can be any unit from Hour to Month.
- **Workdays/week:** This sets up, on your base calendar, your working days schedule.
- Week starts on: This is the first day of the week. For instance, 5 workdays a week in a week starting on Monday would mean Monday to Friday are work days.

In some countries there is a six day working week, starting on Saturday. Thus there would be 6 workdays/week and the Week starts on would be set to Saturday.

Project Start:This is the earliest work day of the project. Note
that it may be desirable to have a Project Start

several weeks before the first activity, in order to be able to indicate supply/design milestones required for work to commence.

Project must finish by:This is the immutable end date of the project. It can, however, be changed at a later date.

Decimal Places: Generally used in resource assignment and calculation (not in calculation of the programme: Primavera does not support fractions of a planning unit).

NB: YOU MUST "TAB" BETWEEN FIELDS OR MOUSE CLICK ON THE NEXT FIELD TO BE ENTERED. PRESSING ENTER WILL TAKE YOU IMMEDIATELY TO THE NEXT SCREEN AND THE DETAILS NOT ENTERED IN WILL NOT BE SAVED AS PART OF THE PROGRAMME. After all of this information has been entered, we have a screen that looks like this:

Add a New Projec	t		>
Current folder:	c:\p3win\projects\house		Browse
Project name:	AA00		
Number/⊻ersion:	Revision 0		
Project <u>t</u> itle:	House Building Programme		
Company name:	Joe Bloggs Builders		
Planning <u>u</u> nit:	Day 💽	Project <u>s</u> tart:	01MAR02 💌
<u>W</u> orkdays/week:	5	Project must finish by:	31JUL02 🖵
Wee <u>k</u> starts opt	Monday	D <u>e</u> cimal places:	2 💌
Add this new pr	oject to a project group		
Project group:		Project <u>I</u> D:	
/			Lancel Help

Note that a separate folder in **projects** has been created called **house**. (This was done in Internet Explorer)

Once this information has been entered click the "Add" button (i) and your project has been created.

3. Entering Your First Activities

Upon entering your project you will be greeted by this screen:

🔯 P	rimave	ra Project Planner - [/	AA00]													_ 8 ×
📜 Fi	e Edit	View Insert Format To	ools D	ata V	Vindow	Help										<u> </u>
	20		3 🖻) M	🗞 🍪	9 23		dh (🖪 🟃 🏩	👪 📰	1 🗖 🏹	1 🕑	⊾⊠ 🖾	🛛 🕄		
×	x -															
Activ	il l	Activity	Orig								2002					
ID	r I	Description	Dur	FEB 1,18,2	M/ 5.4.11	AR 18,25	APR 1 8 15	22 29	MAY 6 .13 .20 .27	JUN 3 .10 .17 .2	JUL 4 1 8 15	22 29 5	AUG 12 19 26	SEP 2 .9 .16 .23	OCT	NOV D 4 11 18 25 2
																-
•			•	•												<u> </u>
Enter	activity ID),				Cla	ssic Sche	dule Lay	out			A	I Activities			

Before continuing any further you must enter the first "Activity ID" or activity number. All future Activity IDs will follow this number sequentially, increasing the number by a fixed amount. The Activity ID can be Alphanumeric.

Ehter "A010" and either press enter or click the mouse cursor on the tick. There will be a thick black line around the Activity ID box indicating that this is the field being edited. Press the right arrow to highlight the "Activity Description" box, and enter "Start Project" in this field.

Once entered, it should look like this:



Press the down arrow button (or the "plus" sign) and notice that the Activity ID auto-increments as the new activity appears. Enter in the next several activities so it looks like this:

📜 File 🛛 E	Edit View Insert Format To	ools D	Data Window Help
]	šm 🛛 🖄 🐨 🖽 📠
- +	- Handover		
Activity	Activity	Orig	
ID	Description	Dur	1,18,25,4,11,18,25,1,8,15,22,29,€
A010	Start Project	1	🗖 Start Project
A020	Clear Site	1	🗖 Clear Site
A030	Set Out	1	📈 Set Out
A040	Foundations	1	Foundations
A050	Floor Slabs	1	🗖 Floor Slabs
A060	Superstructure	1	V Superstructure
A070	Roof	1	🗖 Roof
A080	Services and Finishes	1	🗖 Services and Finishes
A090	Snagging	1	🗖 Snagging
A100	Handover	1	🙀 Handover

The activities for your first programme have been entered.

Note that the amount by which Primavera auto-increments the next activity can be adjusted by selecting "Tools" – "Options" – "Activity Inserting..." from the drop-down menus.

Finally we need to assign each activity a duration. This is done by highlighting the "Orig Dur" box and entering in the required duration. Enter the durations as shown below:

Activity	Activity	Orig	
ID	Description	Dur	FEB MAR APR MAY
A010	Start Project	1	T Start Project
A020	Clear Site	3	3 🗖 Clear Site
A030	Set Out	2	2 🙀 Set Out
A040	Foundations	10	Foundations
A050	Floor Slabs	7	Floor Slabs
A060	Superstructure	20	Superstructure
A070	Roof	10	Roof
A080	Services and Finishes	20	Services and Finishes
A090	Snagging	5	Snagging
A100	Handover	1	🙀 Handover
	•		

We are now ready to apply logic to our programme, but before we move on we need to correct the project layout...

4. Establishing Your Layout

Using your mouse, move the cursor over the thick black line separating the Activity details and the Gant chart until it appears as A.Blakey Page 12 of 82 February 2002 two vertical lines bisected by one horizontal line with arrow heads pointing left and right.

ŀ∰►

Now press the left mouse button down and drag the cursor to the right: once you have moved the cursor across two thirds of the screen, release the mouse button.

- +	 Start Project 								15FE
Activity	Activity	Orig	Rem	%	Early	Early	Resource	Budgeted	
ID	Description	Dur	Dur		Start	Finish		Cost	1 18 25 4 11 18 25 1 8 15 22 29 6 13
A010	Start Project	1	1	0	01MAR02	01MAR02		0.00	🗖 Start Project
A020	Clear Site	3	3	0	01MAR02	05MAR02		0.00	🕁 Clear Site
A030	Set Out	2	2	0	01MAR02	04MAR02		0.00	📈 Set Out
A040	Foundations	10	10	0	01MAR02	14MAR02		0.00	Foundations
A050	Floor Slabs	7	7	0	01MAR02	11MAR02		0.00	Floor Slabs
A060	Superstructure	20	20	0	01MAR02	28MAR02		0.00	Superstructure
A070	Roof	10	10	0	01MAR02	14MAR02		0.00	Roof
A080	Services and Finishes	20	20	0	01MAR02	28MAR02		0.00	Services and Finishes
A090	Snagging	5	5	0	01MAR02	07MAR02		0.00	Snagging
A100	Handover	1	1	0	01MAR02	01MAR02		0.00	📈 Handover

Several new columns are exposed, as shown above. At this point in time we do not need those columns.

Press F11 and this menu should appear.

A.Blakey

Page 13 of 82

Columns					-		×	
Column information:							_	
- + - Activity ID		5.2 M	4 P		<u></u>		_	
Data	l itie	Width	Align		Data font			
Activity ID Activity description Original dutation Remaining dutation Percent complete Early start	Activity D Activity Description Orig Dur Rem Dur % Early Start	10.00 26.00 5.00 5.00 6.33 11.50	Left Left Right Right Right Left	Arial,8 Arial,8 Arial,8 Arial,8 Arial,8 Arial,8			•	
Column title font: Arial.8.8								
-	\setminus		Cancel		Help			
					-	-		

The first thing we need to do is get rid of the columns which we don't need. Highlight "Remaining Duration" (press the down arrow 3 times or click on it with your mouse) and either press the delete button on your computer or click on the "-"sign in the top left corner of this menu with your mouse.

"Remaining duration" should disappear and "Percent complete" should now be highlighted. Delete this line also. Next highlight "Resource" which should now be visible on your menu. Delete this and the next item that appears, "Budgeted Cost".

You should be left with this:

Columns							×
Column information:							
🗕 🛨 🔻 Early finish)						_
Data	Title	Width	Align		Data font		
Activity ID Activity description Original duration Early start Early finish Column title <u>for</u> t:	ActivityIID ActivityIDescription OrigIDur EarlyIStart EarlyIFinish Arial,8,8	10.00 26.00 5.00 11.50 11.00	Left Left Right Left Left	Arial,8 Arial,8 Arial,8 Arial,8 Arial,8			•
✓ Show lines betwee	n rows and columns	0K		Cancel	-11	Halp	
		UK	J	Cancer		TICIP	

Next we need to align out columns correctly. Using your arrow keys, or by clicking on it with the mouse, highlight the "Align" of "Early Finish". Next press the letter "C" and enter: the Alignment should change from left to centre. Alternatively you can highlight the down arrow symbol next to the "+" sign and select "centre" from the options.

Repeat this process and centre-align Early Start, Original Duration and Activity ID.

Finally we can adjust the column widths. Highlight the "Width" cell of "Early Finish" and type in the number 10 and enter. Repeat this process with "Early Start".

In this menu we can also add columns. Highlight the empty space under "Early Finish" then press the down arrow button we used to select the alignment earlier. The list of columns available for adding is then displayed. Highlight and click on one to bring it into your layout. Now we have our layout looking how we want it, click the "OK" button to return to the main screen. Next highlight the black line separating the activity detail and the Gant chart and drag it back to maximise the Gant area visible while still displaying all of our columns.

📴 Prima	vera Project Planner - [AA00]			- 6	×
📜 File E	dit View Insert Format T	ools (Data Windo	w Help	- 7	×
<u>na</u>		a) 🕼	3 M (M)	1801 (Peol		
- +	¥	_			15FEBU2 Fn	_
Activity	Activity	Orig	Early	Early Finish	FEB MAR APR MAY JUN JUL AUG SEP OCT	
A010	Start Project	1	01MAR02	01MAR02	1,18,25,4,11,18,25,1,8,15,22,29,6,13,20,27,3,10,17,24,1,8,15,22,29,5,12,19,26,2,9,16,23,30,7,14	
A020	Clear Site	3	01MAR02	05MAR02		-
A030	Set Out	2	01MAR02	04MAR02	The cited site	
A040	Foundations	10	01MAR02	14MAR02		
A050	Floor Slabs	7	01MAR02	11MAR02	Floor Slabs	
A060	Superstructure	20	01MAR02	28MAR02		•
A070	Roof	10	01MAR02	14MAR02	Roof	
A080	Services and Finishes	20	01MAR02	28MAR02	Services and Finishes	
A090	Snagging	5	01MAR02	07MAR02	Snagging	
A100	Handover	1	01MAR02	01MAR02	📈 Handover	
				Þ		ř
				Clas	assic Schedule Layout All Activities	

Your screen should look something like this:

Our next aim is to format the bars. This can be done by either clicking the "Bar" icon (1), Format > Bar (from the drop-down menu), or by pressing Ctrl+F11.

The following menu should appear:

Page 16 of 82

A.Blakey February 2002

efined bars: - + - Early Bar							
Pos Bar Description	Visib	le Key	Progress	Critical	Neck		
1 Float Bar				Ľ		-	
2 Late Bar 3 Besource Farly Bar				2			
			-		-		
t i f		\mathbf{N}					
						•	
Also neck fo: 🔽 <u>H</u> olidays	∏ <u>W</u> ee	kends		<u>M</u> c	odify		
Display progress and criticality on ta	arget bar bas	ed on:				_	
• Current project • C Target	project	1					
– Display progress on bars based o	n	S	how critic	al color d	on —		
<u> Remaining duration </u>	C <u>o</u> lor:		E <u>n</u> dpoin	lts		Color:	
C <u>P</u> ercent complete			<u>B</u> ar				
	1						
Endpoints Pattern							
				Close		Help	
				_			

Four bars are shown here: two of them are visible (The Early and Float Bars). To avoid confusion, we will delete all of the bars which we do not need to see. Highlight "Float Bar" either by pressing the down arrow until it is highlighted or by clicking on it with your mouse; press delete and this window should appear:

Primave	ra Project Planner 🛛 🔀
2	Are you sure you want to delete this bar: Float Bar?

Click "Yes" and the bar should disappear. Repeat this with the "Late Bar" and "Resource Early Bar".

Your window should now look something like this:

Bars X
Defined bars: -+- Early Bar Pos Bar Description Visible Key Progress Critical Neck 1 Early Bar i i i i v v vi i v v vi
Also neck for: ✓ Holidays ✓ Weekends Display progress and criticality on target bar based on:
Display progress on bars based on Show critical color on • Bemaining duration • Color: • Percent complete • Bar • Bar
Endpoints Pattern Close Help

- i The "position" is the position of the bar on the activity line. "1" is central, "2" is below that and "3" is above. "4" is further below and "5" is further above.
- ii "Visible indicates that the bar is visible.
- iii "Key" indicates that this is the key bar from which links are shown
- iv "Progress" Indicates that, once progressed, progress is shown on that bar
- "Critical" indicates that if an activity is critical, it is shown as such by being coloured as indicated (see iv overleaf)
- vi "Neck" states that for periods of inactivity, such as holidays or weekends, the bar is "necked"

Defined bar	s: Farlu Bar							_	
Pos	Bar Description	n	Visible	Key	Progress	Critical	Neck		
1 Early I	Bar		R	ø	M	P	R	_	
								-	
Also neck	for: 🔽 Holiday	/	: Waakar	: vde		·		-	
1		· · .	W CONCI	103		<u>M</u> c	odify		
Display pro	gress and criticality	on target ba	ar based	on:		<u>M</u> o	odify		
Display pro	ogress and criticality at project C <u>T</u>	on target ba	ar based	on:		<u>M</u> c	odify		
Display pro	ogress and criticality at project <u><u> </u></u>	on target ba arget project sed on	ar based	on:	how critic		odify		
Display pro	ogress and criticality at project <u><u> </u></u>	on target ba arget project sed on C <u>o</u> lor:	ir based	on:	how critic	al color o	odify	Color:	
Display pro © <u>C</u> urrer Display p © <u>R</u> ema	ogress and criticality nt project <u><u> </u></u>	on target ba arget project sed on C <u>o</u> lor:	ar based	on:	how critic E <u>n</u> dpoin	al color o	odify	Cojor:	
Display pro	ogress and criticality at project <u><u> </u></u>	on target ba arget project sed on C <u>o</u> lor:	ar based	on:	how critic Endpoin	al color o	odify	Color:	
Display pro © <u>C</u> urrer Display p © <u>R</u> ema © <u>P</u> erce <u>E</u> ndpoir	ogress and criticality it project <u><u> </u></u>	on target ba arget project sed on Color:	ar based	on:	how critic E <u>n</u> dpoin Bar	al color o	odify	Color:	

- i This allows you to show the bar "necked" Foundations for periods of inactivity, such as weekends or holidays. By default, the bars are necked when, due to progress or resource constraints, no work can take place.
- ii This option becomes relevant when a "target" or "baseline" project has been defined, and allows you to show criticality on the target bar based on either the current project or the target project
- iii Percentage complete can differ greatly from remaining duration (a ten day activity can be 90% complete but, due to late delivery or access problems, still have a 10 day estimated remaining duration). This option allows you to choose which to display.

Page 19 of 82

iv Finally this option allows you to mask or show the criticality of activities on the bar or endpoints.

"Endpoints" allows you to define the type of endpoint used for the various bars available, as well as their size and colour.

"Pattern" allows you to apply a pattern to the fill of the bar.

"Modify" allows you to further modify the details of that bar. Click on the "Modify" button to proceed to our next step in defining our layout.

	Мо	odify Bar Definition i		×	:
	[Description: Early Bar	Position:	□∎́ ii	
		Structure Label ix			1
		Structure:			
\frown		Type Size Position Outline Show			
(iii)	Start point Early start 7 Center Image: Conter End point Early finish 7 Center Image: Conter Image: Conter Bar Bar 6 Image: Conter Image: Conter Image: Conter			
		Milestone size: 7 v			
		Bar color: vi			
		Separator:			
		Carrala			
		Sample			
		Viii Activity	descriptic		
		Endpoints OK Cancel		Help	

This menu will appear:

- i This is the description of the bar it can be renamed as anything.
- ii This, again, is the position of the bar. The number can be adjusted both by highlighting it and entering in the new number, or by clicking (with your mouse button) the up and down arrows to the right of the box to increase or decrease the number.
- iii. This is the Start and End point definition area. At the moment they are defined as Early Start and Early Finish. However, a Late Bar could be defined, with the Start Point defined as "Late Start" and the Finish Point as "Late Finish". Alternatively a Float Bar could be shown, its start point being "Early Finish" and the finish point being "Late Finish".

The "Bar" category allows you to define the type of bar. It can be a bar, a solid line or a dashed line. The "size" category would then define the height, in pixels, of this bar.

- iv. Primavera allows the definition of Milestone points, or 0 duration target dates on your programme. This box allows you to define the height, in pixels, of these milestones.
- This defines whether the end point or bar is shown, or is merely outlined.
- vi. This allows you to define the colour of the bar (unless critical)
- vii. "Separator" allows you to define the separating item if more than one data item is defined in one part of the bar. More details of this will follow in the "Label" description section.
- viii. This shows a sample of what the bar will look like.

Modify Bar Det	finition					×
Description:	Early Bar				Position:	1 🚔
Structure	Label					
L <u>a</u> bels:						_
Position	De	ata	Data fo	nt Start L	og End Log	-
Rightmost	Activity descrip	otion	Arial,8,8			•
1			l	l	l	•
Sample						
	Δ			🔽 Activity de	escriptic	
Endpoints		OK		Cancel	H	elp

If we click the "Label" tab (ix) the menu will change to this:

This allows us to add labels to our bars in various positions. The impact that these labels will have on the layout is shown on the sample below. Any data item from the activity detail can be added as a bar label.

In the same way as we have adjusted activities in other menus, alter the bar structure layout so that it looks like this:

(Changes are indicated $~~\ref{eq}$)

Modify Bar Definition	×
Description: House Bar	
Structure Label	
Structure: Type Size Position Outline Show Start point Early start 7 Center End point Early finish 7 Center Bar Bar 6 Id Id	
<u>M</u> ilestone size: 5 € ★ ★ Bar color:	
Sepa <u>r</u> ator:	
Sample Activity description	J
Endpoints OK Cancel Help	

And alter the Label layout as follows:

If you click "OK" in the "Modify Bar Definition" window and "Close" in the bars window our layout should now look something like this:

📜 File E	Edit View Insert Format To	ools (Data Windo	ow Help								
	8 8 4 5 6		š M 😵	🖄 🖻	ti t		* 🟩 🏥 👼	III 📠 🍸 (9 🖬	⊠ 🖾	\mathbf{x}	?
- +	-											
Activity	Activity	Orig	Early	Early					2002	_		
ID	Description	Dur	Start	Finish	18 FEB	25	.4 .11	<u></u>	.25	1	.8	<u> </u>
A010	Start Project	1	01MAR02	01MAR02	01MA	AR02	01MAR02 1	10	2.4			t
A020	Clear Site	3	01MAR02	05MAR02	01MA	ARO2		I				
A030	Set Out	2	01MAR02	04MAR02	01MA	AR02	04MAR02 2					
A040	Foundations	10	01MAR02	14MAR02	01MA	AR02		14MAR02 10				
A050	Floor Slabs	7	01MAR02	11MAR02	01MA	ARO2	 11	1MAR02 7				
A060	Superstructure	20	01MAR02	28MAR02	01MA	4R02			28N	AR02 20		
A070	Roof	10	01MAR02	14MAR02	01MA	ARO2		14MAR02 10				
A080	Services and Finishes	20	01MAR02	28MAR02	01MA	ARO2			28N	AR02 20		
A090	Snagging	5	01MAR02	07MAR02	01MA	AR02	07MAR0	2 5				
A100	Handover	1	01MAR02	01MAR02	01MA	AR02	01MAR02 1					

Now we are ready to move on and develop our programme.

5. Developing the Programme

	logic to it. It currently looks like this:											
Activity	Activity	Orig	Early	Early		EED				2002		
ID	Description	Dur	Start	Finish	18	25	.4	<u>11</u>	18	25	1	-
A010	Start Project	1	01MAR02	01MAR02		01MAR02	01MAR0:	2 1				
A020	Clear Site	3	01MAR02	05MAR02		01MAR02	05	MAR02 3				
A030	Set Out	2	01MAR02	04MAR02		01MAR02	04M	AR02 2				
A040	Foundations	10	01MAR02	14MAR02		01MAR02			4MAR02 10			
A050	Floor Slabs	7	01MAR02	11MAR02		01MAR02		 11MA	R02 7			

01MAR02

01MAR02

01MAR02

01MAR02

01MAR02

With our layout established we can develop our programme and apply

We need to link the activities together to form our construction programme (plan or schedule).

There are several ways of nominating successors and predecessors for activities. The quickest is to use our mouse. In order to do this we need to turn the relationship lines option "on". Click your mouse over the 🖽 button in the top toolbar. You can now link activities with your mouse. Place your mouse on the bottom right hand corner of activity A010 until a three-pronged forked arrow appears. Now depress the left mouse button and drag to the start of the activity you wish to link to.

Try this out from A010 to A020. Once the three pronged cursor is at the start of the activity bar you would like to link to, release the mouse button and the link should appear:



Superstructure

Services and Finishes

Roof

Snagging

Handover

A060

A070

A080

A090

A100

20

10

20

5

1

01MAR02

01MAR02

01MAR02

01MAR02

01MAR02

28MAR02

14MAR02

28MAR02

07MAR02

01MAR02

28MAR02 20

28MAR02 20

14MAR02 10

07MAR02 5

01MAR02 1

The second way of linking activities is through the Successor input window. Highlight activity A010 and press Ctrl-J .This window appears:

Success	DES					×					
Activity: A010 - Start Project											
- + - A02	0										
Activity ID	Rel	Lag	TF		Description						
A020	FS	0	0	Clear Site		_					
						-					
•											

You can see the activity that we have designated A010's successor shown here. The "Rel" column indicates the type of relationship that exists between the two activities. In this case it is a FS – Finish to Start, but could be a Finish-Finish, Start-Start or Start-Finish.

The Lag indicates any Lag you want to put on the link. For instance, if it was a FS with +3 days lag, the second activity could only start three days after the finish of the first. Likewise a SS with +5 days lag would mean that the second activity could only start five days after the start of the first.

The lag can be negative. For instance, a FS relationship with a -3 day lag would mean that activity two could start three days before the end of activity one.

Press Enter. The box should jump immediately to the next activity and look like this:

	OFS				×
Activity: A02	D - Clea	Site			Jump
- + -					
Activity ID	Rel	Lag	TF	Description	
					
					-
•				-	

Highlight the area underneath the "Activity ID" column heading and it will highlight blue an area in which you can enter an Activity number. Type in "A030" and press enter.

	×
Activity: A020 - Clear Site	Jump
Activity ID Rel Lag TF Description	
A030 FS 0 0 Set Out	<u> </u>

The programme will automatically enter in the successor's description and will provide a default link of Finish to Start with 0 days lag.

Instead of typing in "A030" you could merely once a blank area has been highlighted under "Activity ID" press the down-arrow and select the required activity ID. This will appear:

🔳 Si	uccess	SOLS	×
Activity	: A02	20 - Clear Site	Jump
- +	🔽 A03	30	
Activ		Activity ID	
A030	A030	- Set Out	
	A040	- Foundations	
	A050	- Floor Slabs	
	A060	- Superstructure	
	A070	-	
	A080	 Services and Finishes 	
	A090	- Snagging	
	A100	- Handover	•

Now highlight the activity that you would like to link to and click it with your mouse. It will then appear in your successor list.

Next make A040 the successor of A030, and A050 the successor of A040. However, we need a different kind of link between A040 (Foundations) and A050 (Floor Slabs). We know that 5 days after the completion of the foundations the floor slabs should be in. Thus, we can change the link type to a "FF" link and the lag to 5 days.

We also know that two days after the start of the floor slabs, we can start on the superstructure. Thus the link from A050 to A060 is a SS with 2 days lag.

However, we also know that we will need at least 5 days after the completion of the Floor Slabs before the superstructure can be completed. To show this we add a second link between A050 and A060.

	-							
Successors ×								
Activity: A050 - Floor Slabs Jump								
-+								
Activity ID	Rel	Lag	TF	Description				
A060	SS	2	0	Superstructure	▲			
A060	FF	5	0	Superstructure				
					-			
	1			1				

Enter in the links mentioned above, and the following:

A060 to A070 – FS A070 to A080 – FS with -5 day lag A080 to A090 – FS A090 to A100 – FS Then close the Successor activity box, either by pressing Ctrl-J again or by clicking the small "x" in the top right corner of the box.

Our programme is now linked. Primavera now requires the programme to be "scheduled" in order to calculate the new end date. Press F9 to schedule the programme.

The result should be:

Activity	Activity	Orig	Farly	Farly		2002							·	
10	Description		C1	The Late	ŀ	FEB	MAR					APR		
IU.	Description	Dur	Start	Finish	18	25	.4	_. 11	<mark>,18</mark>	25 I	,1	- <mark>8</mark> -	15	22
A010	Start Project	1	01MAR02	01MAR02		01MAR02	-01_MAR02 1							
A020	Clear Site	3	04MAR02	06MAR02		04MA	R0206M/	ARO2 3						
A030	Set Out	2	07MAR02	08MA.R02		(7MAR02	8MAR02 2	2					
A040	Foundations	10	11MAR02	22MAR02			11MAR02	:		-22MAR02-10				
A050	Floor Slabs	7	21MAR02	29MAR02				211	ARO2 🗖	29	MARO2 (····· <u>·</u>	
A060	Superstructure	20	25MAR02	19APR02					25MAF	R02	<u> </u>	_		19APR02 :
A070	Roof	-10	22APR02	03MA.Y02									22.APRC	12
A080	Services and Finishes	20	29APR02	24MA.Y02										29APR
A090	Snagging	5	27MAY02	31MA.Y02										
A100	Handover	1	03JUN02	03JUN02										

Our first problem is that the full width of the bar chart is not visible on the screen. Move your mouse cursor over the timescale and double left-click. This window should appear:

Timescale	×
<u>D</u> ensity:	
•	► E
<u>S</u> tart date:	50-2W
End date:	FD +1M
Eont:	Arial,8,8
🔽 Calendar date	
Minimum time (unit: Weeks 💌
🗖 Show fisca	years Start month:
🔲 Show man	ufacturing weeks
🗖 Show day (of week
🔲 Ordinal dates	
U <u>n</u> it:	Weeks
Ordinal start:	SD +OD 🗸
	OK Cencel Help

The cursor on the bar under the word "Density" is flashing. Click on this cursor and drag it to the left and right. You will see your timescale expand and contract. Adjust it so that the last week visible on the right hand side of the screen is the first week in June. Release the baradjusting cursor and press "OK".

Your screen should now look like this:



We are now ready to organise our programme.

6. Organising the Programme

Primavera can organise projects in two main ways: through Activity codes and through a "Work Breakdown Structure" (WBS).

6.1 Organising By Work Breakdown Structure

The WBS is a structured way to lay out a programme: it can accommodate several levels of programme. Establishing your WBS involves typing in a mini-programme of headings.

For example:

- 1 Contract Start
 - 1,1 Site Establishment
- 2 Demolitions
 - 2,1 Church
 - 2,2 Church Hall
- 3 Construction Flats
 - 3,01 New Flats Structure
 - 3,01,1 Basement
 - 3,01,2 Ground Floor
 - 3,01,3 First Floor
 - 3,01,7 Roof
 - 3,02 New Flats Brickwork & Finishes
 - 3,02,1 Basement
 - 3,02,2 Ground Floor
 - 3,02,3 First Floor
 - 3,02,7 Roof
- 4 Construction New Church
 - 4,01 New Church Structure
 - 4,01,1 Foundations
 - 4,01,2 Ground Floor
 - 4,01,3 First Floor
 - 4,02 New Church Brickwork & Finishes
 - 4,02,1 Ground Floor
 - 4,02,2 First Floor
 - 4,02,3 Roof
 - 5 External Works
 - 6 Handover

Page 32 of 82

For complex programmes, it is wise to establish the WBS before the actual programming is started.

📜 File E	dit View Insert Format To	ols	Data Window Help	
	I / L K		Calendars	14 🗥 🖪
	Handover		Activity Codes	
	Tianaover	_	Project Codes	
Activity	Activity	Ori	WBS	FFR
ID	Description	Du	_	18 25 4
A010	Start Project	1	Resources	01MAR02 001M
A020	Clear Site	3	Resource Curves	
A030	Set Out	2		07MAR02
A040	Foundations	10	Custom Data Items	11MA
A050	Floor Slabs	7	21MAR02 29MAR02	

Select Data-WBS... from the drop-down menus. The following window will appear:



This is the WBS Editor window.

The first thing we need to do here is set up the structure of our WBS. This is done by clicking the "Structure" button. The following window appears:

Work Breakdown Structure									
Laural	1		,	F	c	7			10
Lever			4 — [о — Г	- -	_			
width				_¦	_¦	_		_	_
Separator									
		Γ	OK		C	ancel		He	lp

This is the WBS Structure Editor.

We want to set up a simple two level WBS, so highlight the number 10 (this is the number of characters allowed in that level: it can be any number from 1 to 48). We want it to be two characters wide, so type in the number 2.

Next we need to identify the separator that will appear between fields. Click on the box below the "2" that has just been entered and type a ",".

Our second level also requires a two character field: in the box below Level 2 enter another "2" and place another "," below it.

The easiest way to navigate this window is by clicking on the box where information is to be added with your mouse cursor and entering the information required. The WBS box should now look like this:

Work Breakdown Structure 🗙								
Level Width Separator		3 4	5	6	7	8	9	10
		0	К		Cancel		He	lp

Click "OK" and we return to the main WBS Window.

It should now look like this:

W	3S		×
	Code:	Title:	Сору
			Structure
		•	1
	Transfer Print	OK Cancel	Help

Note that in the "Code:" box a comma is now visible. This indicates that we can now enter in two levels of information here.

Click on the "+" sign and the cursor appears in the code box, to the left of the comma. Type in "01" and press Tab. The cursor should move to the title box. This is the description of that WBS Heading. Type in "House" and press enter.

WBS		×
Code:	Title:	
- + 01,	House	Сору
01 House		Structure
		F
Transfer Print	ОК	Cancel Help

You have created the first level of your programme.

Click the "+" sign again and type in 0101. Note that as the cursor reaches the comma after the first "1" it automatically moves on to the second level of the WBS. Again press "Tab" and enter the description "Start Up" and enter.

Enter in the following descriptions as shown

W	BS			×
	(Code:	Title:	
	- +	01,05	Snag and Handover	Copy
	01 Hou 01,01 01,02 01,03 01.04	ise Start Up Substructure Superstructure Finishes	<u>-</u>	Structure
	01,05	Snag and Handover		
				▼ ▶
	Transfe	er Print	OK Cancel	Help
We now need to apply this WBS to our programme. Press "OK" and return to the programme.

There are two ways in which we can assign the WBS levels to the programme. The first is to create a column called "WBS" and enter the information there.

Press "F11" and highlight the space below "Early Finish" in the new window. Then highlight the down-facing triangle next to the "+" sign in the window and press the key "w". The menu should scroll straight down to "WBS". Press enter and it will appear in your column selection. Alter the alignment of this column to "Center" and alter the width to 8.

Columns × Column information: - + - Center Data Title Width Align Data font Activity ID Activity||D 10.00 Center Arial,8 Activity description Activity|Description 26.00 Left Arial,8 Original duration Orig|Dur 5.00 Center Arial.8 Early start EarlyStart 10.00 Center Arial.8 10.00 Center Arial,8 Early finish EarlyFinish WB'S WBS 8.00 Center Arial 8 Column title font: Arial, 8, B -Show lines between rows and columns 0K Cancel Help

Your window should now look like this:

Click "OK" and drag your black line between the "Early Finish" column and the Gant chart to the right. The "WBS" column should appear.

- +	✓ Handover						
Activity	Activity	Orig	Early	Early	WBS	FFR	MAR
ID	Description	Dur	Start	Finish		18 25	4 11 18 25
A010	Start Project	1	01MAR02	01MAR02		01MAR02	-01MAR02 1
A020	Clear Site	3	04MAR02	06MAR02		04MAR	02 🗖 06MAR02 3
A030	Set Out	2	07MAR02	08MAR02		07M	AR02 -08MAR02 2
A040	Foundations	10	11MAR02	22MAR02			11MAR02
A050	Floor Slabs	7	21MAR02	29MAR02			21MAR02
A060	Superstructure	20	25MAR02	19APR02			25MAR02
A070	Roof	10	22APR02	03MAY02			
A080	Services and Finishes	20	29APR02	24MAY02			
A090	Snagging	5	27MAY02	31MAY02			
A100	Handover	1	03JUN02	03JUN02			

Now move the mouse pointer over the WBS cell of activity A010 and click.

- +	× , *								
Activity	Activity	Orig	Early	Early	WBS	EED			AD
ID	Description	Dur	Start	Finish		18 25	.4		18
A010	Start Project	1	01MAR02	01MAR02		01MAR02	-01MAF	RO2 1	
A020	Clear Site	3	04MAR02	06MAR02		04MAR	02 🗖 0	6MAR02	2 3
A030	Set Out	2	07MAR02	08MAR82		07M	AR02	HO <u>B</u> MAR	02 2

If you now click next to the "," in the input area the should become. This means that this "button" is now active. Click on it with your mouse cursor and the list of data items available to place there should appear. Highlight "01,01" and press enter: that value should now appear in the WBS column.

Next, highlight (by clicking it with your mouse) the WBS column for Activity A020. Simply type in the characters "0101" and press enter: they should appear in the box separated by the comma.

Enter the remaining WBS activity codes as follows.

Activity	Activity	Oria	Early	Early	WBS							20
ID	Description	Dur	Start	Finieh		FEB		MA	R			
10	Description	Du	Start	Thisi		18 ₁ 25	4	11	18 I	_ <mark>_25</mark>	1	8
A010	Start Project	1	01MAR02	01MAR02	01,01,	01MAR02	D-01MAR	R02 1				
A020	Clear Site	3	04MAR02	06MAR02	01,01,	04MAR	02 🗖 (6MAR02 3	3			
A030	Set Out	2	07MAR02	08MAR02	01,01,	07N	AR02	-08MAR0	2 2			
A040	Foundations	10	11MAR02	22MAR02	01,02,	1	11MAR()2 ——		22MAR0	2 10	
A050	Floor Slabs	7	21MAR02	29MAR02	01,02,	1		21MAR	202 🗖	 2	9MAR	:02 7 -
A060	Superstructure	20	25MAR02	19APR02	01,03,			25	MARO	2		
A070	Roof	10	22APR02	03MAY02	01,03,	1						
A080	Services and Finishes	20	29APR02	24MAY02	01,04,	1						
A090	Snagging	5	27MAY02	31MAY02	01,04,	1						
A100	Handover	1	03JUN02	03JUN02	01,05,							
	•		•	•								

We have now told Primavera HOW we want the programme organised:

now we must tell it to organise it so.

📜 File E	dit V	liew Inse	rt Format	Tools	Data	Window	Help				
		<u>a</u>	<u>%</u> 🖻		<u>é</u> ł	<u>%</u> 🖉 ا		🛍 🔣 🗶 🏥	B B 7 0	X	?

Click the "Organise" icon on the toolbar.

This window will appear:

Organize								×
Organize by								
Activity data item	C Work breakdown							
<u>G</u> roup by:								
-+-	-		_					
Group by Order	Font	Bkgrnd	Text	New page	Total			
						-		
E Display all values in one has			Sor	bu				
Beorganize automaticallu				+ -				_
Display unassigned and unc	ateriorized activities			Sort	on		Order	
Sample		_	Ear	ly start			Ascend	_
odinpio			1.00	ai fioat			Ascena	·
								•
Options			Or	ganize Now	l Car	ncel	Не	ы
			_					

This opens, by default, on organising by "Activity Code".

Press the button by the w	vords	"Work	Breakdown	Structure"	and	the
window should change to th	his:					

	Organize	/			×
	Organize by				_
	C Activity data iten	n 💿 Work breakdow	n		
	<u>G</u> roup by:				
	-				
\frown	Group By	Visible Font	Bkgrnd Text New page	e Total	
(1	Level 1	Yes Arial,14,B		None	
\smile	Level 2	Yes Anal,12,8			
			$\left(\begin{array}{c}2\end{array}\right)$		
				~	
	- Display empty w	ork breakdown levels	Sort bu:		
					1
	Reorganize auto	matically		t en la Orden la	
	🛛 🔽 Display unassign	ned and uncategorized activities	Sor		
	- Sample		Early start	Ascend	
	oumpic				
				-	
	(4)			
	Options		Organize Nov	w Cancel Help	

- These are the two WBS Levels that have been defined in the WBS Structure. This states that both are visible, and the "Font" is the size of the heading displayed on the screen.
- "Bkgrnd" and "Text" are the colours of the background and the text in these headings.
- **3.** "Sort by: " defines how the activities are sorted within each band
- **4.** "Options" takes you to the following window:

	Options		×
1	Activity columns Text in bands: TValue Value	2	OK Cancel Help
	Bar area ✓ Display group dividers ← As bands ← As lines		
	Text: TValue Description		

While we are here, we want to display the WBS number (its value) as well as the description in the header band. Tick the "Value" box beneath the text (1) "Text in bands:"

Now click "OK" (2) and we return to the "Organise" window.

We can change the settings here for colours, fonts, and whether each heading has a "Total" band at will. For now, merely highlight the Level 2 "Total Cell" and press "N" – "none" should appear in the box. Press enter and enter again.

You should return to his screen:

Primav	era Project Planner - [AA	00]															- 8 ×
📜 File Edit	: View Insert Format Tool	s Dal	ta Window	Help												ļ	- 8 ×
		ŝ	# 😌 🤄	9 28	∃-ŧÌ	dh 🖪 📩	\$	📰 🔲	F	🕑 🖬			?]			
-+-	Services and Finishes					· · · ·					· · ·		_		15FEB	02 Fri	
Activity	Activity	Orig	Early	Early	WBS					2	002		_				
ID	Description	Dur	Start	Finish		FEB 18 25	.4	MAR 11 18	25	1 ,8	APR 15	22	J29	, <mark>6</mark>	MAY 13 2) ₁ 27	J _3
01 Ho	use 🏧																-
01,01 \$	Start Up																
A010	Start Project	1	01MAR02	01MAR02	01,01	01MAR02	01MARC	12 1									1
A020	Clear Site	3	04MAR02	06MAR02	01,01	04MAR	02 _ 06	MAR02 3									
A030	Set Out	2	07MAR02	08MAR02	01,01	07M	AR02 🗖 H	08MAR02 2									
01,02 \$	Substructure	- 📯						1									1
A040	Foundations	10	11MAR02	22MAR02	01,02		11MAR02		-22MAR0	2 10							
A050	Floor Slabs	7	21MAR02	29MAR02	01,02			21MAR02		9MAR02 - 7		7					
01,03 \$	Superstructure								1			÷					1
A060	Superstructure	20	25MAR02	19APR02	01,03			25MAR	02			19APR0	2 2 0				
A070	Roof	10	22APR02	03MAY02	01,03						22APR	02	÷	03MAY0	02 10		
01,04 F	inishes																
A080	Services and Finishes	20	29APR02	24MAY02	01,04							29APR02	-	<u> </u>		-24M/	Y02 2
A090	Snagging	5	27MAY02	31MAY02	01,04										27M/	Y02 📥	<u>-31M</u>
01,05 \$	Snag and Handover																1
A100	Handover	1	03JUN02	03JUN02	01,05											03JUN	10/2 0 (
																	1
																	1
																	1
																	1
																	-
•					•	▲											
				Class	ic Sched	lule Layout				All A	Activities						

Here we see the headings we defined in our WBS layout assigned to the activities, in the layout we asked for.

Note that the WBS headings have the number we assigned them in the header bar.

You can summarise these bars under their respective heading by double mouse-clicking on the header lines (*).

6.2 Organising By Activity Code

The second method of organising activities in Primavera is by Activity Code. You can see the current activity codes at the Menu option Data – Activity Codes. This window will appear:

Activity Codes	>
Activity codes Activity ID Alias	
Codes:	
# Name Length Description	
1 RESP 4/Responsibility ▲ 2 AREA 4/Area/Department	
3 MILE 1 Milestone	
49 characters remaining	
Values: RESP	
Value Description Order	•
	•
Turnfu Dith Diftsh	
vi ransrer Print Refresh	
When new code values occur in project, validate against dictionary	
Close	Help

- i. This is the four letter character code assigned to this Activity code as its name
- ii. This is the character length of the field
- iii. This is the description of the field
- iv. These are the "Value"s of the component parts of that activity code. For instance, if a Code field is called "Level" with a length of "1" the values could be G, 1, 2, 3, 4 and the descriptions "Ground Floor", "First Floor", etc.

Page 43 of 82

- v. This is the order in which those items should be sorted within the activity code. For instance, Primavera could assume that "G" comes after the numeric codes. In this instance we would place a "1" in the "order" column by G, a "2" by "1 – First Floor", etc.
- vi. "Transfer" allows us to transfer a coding structure from another programme.

This button will take you to a window in which you can identify the programme from where you would like the activity codes drawn.

Ac	tivity Codes		×
	Activity codes	Activity ID Alias	
	Calar		
	# Name Leng	th Description	
	1 RESP		
	3 MILE	1 Milestone	
	4 ITEM	4 Item Name	
		49 characters remaining	
	Values: BESP		
	Value	Description Order	
		_	
		·	
	Transfer	Print Refresh	
	When new cod	de values occur in project, validate against dictionary	
		Close Help	

Highlight "RESP" in the name field and then click on "RESP" in the text edit box (**a**). Your cursor will appear in that field. Delete the characters RESP there and replace them with "BLDG" and press Enter.

Page 44 of 82

February 2002

Now click on the "Description" field of our new Activity Code "BLDG" and change the description to "Building". The length of the field can remain at 4.

Now change "AREA" to "PHSE" and enter "Construction Ph." as its description.

Delete the remaining codes by highlighting them and pressing the delete key.

HOMMINY COULDS	Activity ID	Alias		
	- County ite	Alido		
odes:				
			_	
t Name Length	Description		-	
	uildina			
2 PHSE 4 C	Construction Ph.			
		_		
			~	
	56 obstactor	remaining		
	Journalacters	remaining		
		-		
aluae: BESD		-		
alues: RESP		_		
alues: RESP				
alues: RESP + - Value	Description		Order	
alues: RESP	Description		Order	
alues: RESP	Description		Order	
alues: RESP	Description		Order	
alues: RESP	Description		Order	
alues: RESP	Description		Order	•
alues: RESP	Description		Order	• •
alues: RESP Value Transfer	Description		Order	•

The Activity Code box should now look like this:

We now need to add values to each of the Activity Codes defined. While highlighting "BLDG" click in the Value area of the lower box. You will be asked if you wish to save your structure edits. Primavera is asking if you want to keep the new code structure that you have defined and delete the old structure. Click "Yes" and highlight the "Value" box again. Make your first Value "01" and press right arrow so that your cursor now rests in the description field. Type "House" and press enter.

Highlight "PHSE" and repeat this process of entering values until you have the following codes entered:

	Activity Codes	×	Activity Codes	×
	Activity Codes Activity codes Activity ID Alias Codes:	×	Activity Codes Activity codes Activity ID Alias Codes:	×
(Value Description Order		Values: PHSE Value Description Order Value Description Order 01 Start Up 02 Substructure 03 Superstructure 04 Finishes 05 Snag and Handover	
	Transfer Print Refresh Image: When new code values occur in project, validate against dictionary Close Help]	Transfer Print Refresh Image: When new code values occur in project, validate against dictionary Close Help	

Then close this window.

We can apply these codes to our programme in the same way as we applied our WBS codes. In this instance, create two columns: one with the data item "BLDG" and the other with the data item "PHSE"

Columns						×
Column information:	Title	Width	Alian		ata font	
Activity description Original duration Early start Early finish Building Construction Ph.	Activity[Description Orig[Dur Early[Start Early[Finish BLDG PHSE	26.00 5.00 10.00 10.00 5.00 5.00	Left Center Center Center Center Center	Arial,8 Arial,8 Arial,8 Arial,8 Arial,8 Arial,8 Arial,8		
Column title <u>f</u> ont:	Arial,8,8 n rows and columns	UK][Cancel	Help	

Our Gant Chart will now look like this:

Activity	Activity	Oria	Early	Early	BLDG	PHSE					
10	Description			Plant and			FE	B		M	AR
IU	Description	Dur	Start	Finish			<mark>,18</mark>	25	- 4		18
House											
Start U	р										
A010	Start Project	1	01MAR02	01MAR02			01N	1AR02		R02 1	
A020	Clear Site	3	04MAR02	06MAR02				04MAR	02 <mark>– 1</mark> 0	06MAR02	2 3
A030	Set Out	2	07MAR02	08MAR02				07M	AR02 🗖	-08MAR	02 2

Now it is the simple matter of entering our codes. The code "01" for "BLDG" applies to all activities, while we will encode "PHSE" to match our WBS.

Start U	p					
A010	Start Project	1	01MAR02	01MAR02	01	01
A020	Clear Site	3	04MAR02	06MAR02	01	01
A030	Set Out	2	07MAR02	08MAR02	01	01
Substr	ucture					
A040	Foundations	10	11MAR02	22MAR02	01	02
A050	Floor Slabs	7	21MAR02	29MAR02	01	02
Supers	structure					
A060	Superstructure	20	25MAR02	19APR02	01	03
A070	Roof	10	22APR02	03MAY02	01	03
Finishe	es					
A080	Services and Finishes	20	29APR02	24MAY02	01	04
A090	Snagging	5	27MAY02	31MAY	01	05
Snag a	and Handover					
A100	Handover	1	03JUN02	03JUN02	01	05

We now need to tell the programme to organise by our Activity Codes rather than by the WBS. Press the "Organise" icon

#	2		7	۲	E

And select "Activity Data Item" as your "Organize by" data. The window should change to this:

Organize						×
Organize by Activity data item <u>G</u> roup by:	C Work br	eakdown				
Group by	Order For	ıt Bkgmd	Text New page	Total		
☐ Display all values in o ☐ Reorganize automatic ☑ Display unassigned an Sample	re band sally nd uncategorized act	ivities	Sort by: Sort or Early start Total float	1	Order Ascend Ascend	▲ →
Options			Organize Now	Cancel	Help	

We want to Group our activities by the codes that we have defined. Click under "Group by" and enter our defined codes:

Organize								×
Organize by								
 Activity data item 		C Work breakdown						
<u>G</u> roup by:								
- + - Arial,9,8							_	
Group by	Order	Font	Bkgrnd	Text	New page	Total		
Building	Ascend	Arial,10,8				None	-	
Construction Ph.	Ascend	Arial,9,8				None		
							_	

Page 48 of 82

A.Blakey

February 2002

Note in the example shown the "Font" has been altered. This can be changed by highlighting the font and selecting the required font in the Input area.

📜 File Ed	dit View Insert Format Too	ols Da	ata Window	, Help												
	3 2 4 5 5 6	Ê	M 🗇 🖣	<u>)</u> 8	∎l€	∄ 🔥	<mark>ष 📩 🏩</mark>	. 1 1	2		70		⊠ (ď] [🗡	?	
- +	- 05															
Activity	Activity	Orig	Early	Early	BLDG	PHSE		_				2	002			
10	Description	Dur	Start	Finish			FEB		44	MAR		<u> </u>	0	APR		- 20
House							<u>10 1</u> 23	1 4	1.1.1	110	129		10	119	122	<u> 23</u>
Start Up																÷
A010	Start Project	1	01MAR02	01MAR02	01	01	01MAR02	<u>-ю1</u> м/	AR02 1							
A020	Clear Site	3	04MAR02	06MAR02	01	01	04MAR	02 🗖		RO2 3						
A030	Set Out	2	07MAR02	08MAR02	01	01	07M	AR02	-08M/	AR02 2						
Substruct	ture															
A040	Foundations	10	11MAR02	22MAR02	01	02		11MAI	R02 🗖		-22MAR0	2 10				
A050	Floor Slabs	7	21MAR02	29MAR02	01	02			21	MAR02			2 7			
Superstru	ucture													1	_	
A060	Superstructure	20	25MAR02	19APR02	01	03				25MAR	R02 	<u> </u>			19APR0	02 20
A070	Roof	10	22APR02	03MAY02	01	03							2	2APR03	2 📥	<u> </u>
Finishes																
A080	Services and Finishes	20	29APR02	24MAY02	01	04								2	29APRO2	2
Snag and	Handover															i
A090	Snagging	5	27MAY02	31MAY02	01	05										
A100	Handover	1	03JUN02	03JUN02	01	05										

Press "Reorganise Now" and the schedule layout should change to this:

Our colour scheme has changed in line with our new layout and "Snagging" has moved from our previously defined heading of "Finishes" to "Snag and Handover".

The Activity Code form is useful in two main instances: where there is repetition and where different layouts might be required by different parties.

Imagine if our example had ten houses: our WBS would run for several pages, but the Activity Code will only have to be adjusted by adding in one code per house – a house number identifier.

Page 49 of 82

Further, in that instance a reorganisation could tell our Services Foreman exactly what his programme will be for the ten houses. First we would organise it by "Construction Ph." and then by "Building".

The below example took just a few minutes to create, organise and sort. Note that in this example I used a "Filter" to show only the "Finishes" activities i.e. those activities with Building Ph. Code "04".

📜 File Ec	lit View Insert Format Too	ols Da	ata Window	/ Help																			
	i 🥔 λ 陆 🛍	Ê	M 😵 🖲	<u>k</u>	- E	€	,	<u>*</u>	*	1	2		7	1			1 🖗] [X	?			
- +	-																						15FEB(
Activity	Activity	Orig	Early	Early	BLD	GPHSE										20	02						
un Í	Description	Dur	Start	Finieb			F	EB		M	AR				<u>APR</u>				M	<u>AY</u>			JUN
10	Description	Dui	Start	Tinsn			18	25	4	11	_ <mark>1</mark> 18	125	1	1 <mark>8</mark>	15	122	129	- <mark>1</mark> 6	1 3	<mark>; 120</mark>	27	_ <mark>_3</mark>	<mark>110 _1</mark> ′
Finishes																							
House 1																						1	
A080	Services and Finishes	20	29APR02	24MAY02	01	04									29/	APR02	2 📥	<u></u>			24 M	4¥02	20
House 2																							
A180	Services and Finishes	20	13MAY02	07JUN02	02	04											13	MAY	02 🗖		<u>~</u>	<u>+</u>	07JUN0
House 3																						1	
A280	Services and Finishes	20	27MAY02	21JUN02	03	04													27	MAY	02 🗖	<u></u>	<mark></mark>
House 4			•	•																			
A380	Services and Finishes	20	10JUN02	05JUL02	04	04															10	ὑUNO	2 🖂

So how do we filter our programmes?

7. Filtering the Programme

Our programme should currently look something like this:

📜 File Ed	lit View Insert Format Too	ls Da	ata Window	v Help										
	i 🤌 🔉 🕻 陆 🖪	Ē	M	<u>k</u> 68	⊡ -€	1	h 🔢 🟃 🏩	. 11	7	70		8	8	?
- +	v 05													
Activity	Activity	Orig	Early	Early	BLDG	PHSE					2002			
ID	Description	Dur	Start	Finish				.4	MAR	.25	4 .8	<u>APR</u>	.22	.29
House	•			1								1.0		-
Start Un														
A010	Start Project	1	01MAR02	01MAR02	01	01	01MAR02	101M/	P02.4					
4000	Clear Sta		04140.000		04	04	UTWARU2	_HOTIWIA _▼	1802 1					
A020	Clear Site	3	04IWAR02	UOIWIARUZ	1 01	01	04MAR	02 🗖	06MAR02 3					
A030	Set Out	2	07MAR02	08MAR02	01	01	07M	AR02	-08MAR02 2					
Substruct	ture													
A040	Foundations	10	11MAR02	22MAR02	01	02		11MAF	202	-22MAR02	2 10			
A050	Floor Slabs	7	21MAR02	29MAR02	01	02			21MAR02		9MAR02 7			
Superstru	icture		1											
A060	Superstructure	20	25MAR02	19APR02	01	03			25MAR	n2 * _				12 20
A070	Roof	10	22APR02	03MAY02	01	03						224PR	12	
Finishes														
A080	Services and Finishes	20	29APR02	24MAY02	01	04							29APR02	, † 📜
Snag and	Handover		1	1										
A090	Snagging	5	27MAY02	31MAY02	01	05								
A100	Handover	1	03JUN02	03JUN02	01	05								

We need to create something to filter by: create an additional Activity code, with values, as follows:

Activity cod	les 🛛 🛆	ctivity ID	I	Alias		
Codes:						
- + 🔻 FM.	AN					
# Name L	ength	Descripti	ion			
1 BLDG	4 Building]		<u> </u>		
2 PHSE	4 Constru	iction Ph.				
5 FMAN	4:Forema	n				
	:					
		52 char	racters rer	naining		
(alues: FMA	٨N					
(alues: FMA ━ + ▼ Tim	AN mmy Tailor					_
<u>(</u> alues: FMA - + → Tim Value	N Imy Tailor	Descrip	otion		Order	
(alues: FMA → + → Tim Value)1	N my Tailor Joe Blogg	Descrip gs	otion		Order	
(alues: FMA - + - Tim Value D1 D2	N Tailor Joe Blogg Fred Smit	Descrip gs h	otion		Order	
(alues: FMA - + - Tim Value 01 02 03	N Imy Tailor Joe Blogg Fred Smit Timmy Ta	Descrip js h illor	otion		Order	
(alues: FMA - + Tim Value)1)2)3	N Joe Blog Fred Smit Timmy Ta	Descrip gs h illor	otion		Order	
(alues: FMA - + - Tim Value Value 11 12 13	N Imy Tailor Joe Blogg Fred Smit Timmy Ta	Descrip gs h	otion		Order	- -
(alues: FMA - + + - Tim Value 01 02 03 03	N my Tailor Joe Blogg Fred Smit Timmy Ta	Descrip gs h illor	otion		Order	- -
(alues: FMA Value 11 12 13 Transfer	N Inny Tailor Joe Blogg Fred Smit Timmy Ta	Descrip js h illor Refres	ption h		Order	•
(alues: FMA Value 11 12 13 Transfer	N Internation Joe Blogg Fred Smit Timmy Ta Print	Descrip js h illor Refres	bion h		Order	•
Values: FMA Value 11 12 13 Transfer 7 When new	N my Tailor Joe Blogg Fred Smit Timmy Ta Print code values o	Descrip js h illor Refres	h	against di	Ctionary	•

Create a column for "FMAN" and distribute the three foremen as follows:

Activity	Activity	Orig	Early	Early	BLDG	PHSE	FMAN	
ID	Description	Dur	Start	Finish				
Start Up								
A010	Start Project	1	01MAR02	01MAR02	01	01	01	
A020	Clear Site	3	04MAR02	06MAR02	01	01	02	
A030	Set Out	2	07MAR02	08MAR02	01	01	02	
Substruct	ure							
A040	Foundations	10	11MAR02	22MAR02	01	02	02	
A050	Floor Slabs	7	21MAR02	29MAR02	01	02	03	
Superstru	cture							
A060	Superstructure	20	25MAR02	19APR02	01	03	03	
A070	Roof	10	22APR02	03MAY02	01	03	03	
Finishes								
A080	Services and Finishes	20	29APR02	24MAY02	01	04	01	
Snag and	Handover							
A090	Snagging	5	27MAY02	31MAY02	01	05	01	
A100	Handover	1	03JUN02	03JUN02	01	05	01	

We can now use our filters to sort by Construction Phase, Foreman or a combination of the two:

	Filter ×
	<u>C</u> riteria Run
1	ID Description AI All Activities None No Activities FL-01 Automation System Project Activities FL-02 Building Addition Project Activities FL-03 Conveyor System Project Activities FL-04 Schedule Update FL-05 Six-Month Lookahead FL-06 Work in Progress FL-07 Near Critical Activities FL-08 Activities With Logs
2	Add Modify Delete Filter: Replace activities shown in current view Select: Highlight activities which match criteria Transfer Close Help

Click the filter icon: **[11]**, and this window will appear

Page 52 of 82

To remove confusion first delete the current filters from FL-01 onwards. Highlight FL-01 and press the "Delete" button. Confirm that you do wish to delete the filter when asked and the filter disappears. Repeat this process for the remaining filters until you are left with:

Filter	×
<u>C</u> riteria	Run
ID Description	
All All Activities	
None No Activities	

Now click the "Add" button. The following window appears:

Add a New Filter 🗙							
Filter ID: FL - 🔟							
OK Cancel Help							

Click OK. You are then taken to:

	Filter Speci	fication						×
) Title: FL-0	1	(2)		< >>		
	Level 1	💽 must meet	⊙ All € Any	of the	following criteria	:		
		Select if		ls	Low Value	:	High Value	_
(3				<u>}</u>			
				4	<u>ل</u>			
						1		
	Transfer				OK	Car	ncel Help	>

1. This is the name of the filter – it can be renamed as anything

- This section defines whether, in the case that two conditions are imposed on the filter, activities are required to fulfil all conditions or only one of the conditions
- **3.** In this section the filter conditions are defined. Any of the data items defined for an activity can be used in a filter, from dates to activity codes to resource data.
- 4. Here the "condition" for the filter to apply is defined. It can be any mathematical function (i.e. <,>, =, etc.) and any value, either of the data item mentioned in "3.", or any other data item.

An example would be:

Selection criteria:									
- + - 01									
Select if	ls	Low Value	High Value						
Foreman	EQ	01							

Here we are telling the computer to apply the filter (i.e. select and display that activity) only if the Foreman is equal to 01 (Joe Bloggs).

A more complex filter would be:

ilter Specification			د
Title: FL-01			>>
Level 1 I must meet CAI	l ofth ny	e following criteria:	
<u>S</u> election criteria:			
- + - Early start			
Select if	ls	Low Value	High Value
Foreman Construction Ph.	WR WR	01 02 01 4 DD 02	04
Early start	<u></u> [1]	UIAPRUZ	

,			
Transfer		ОК	Cancel Help

This tells the computer to select an activity if

- (i) the Foreman is 01 (Joe Bloggs) AND
- (ii) the Construction Phase is "Within the Range" of (WR) 02 04 (i.e. is 02, 03 or 04 Substructure, Superstructure and Finishes) <u>AND</u>
- (iii) Has an early start date after the 1st April 2002.

In this case, only activity A080 will be selected.

Filters are often used in large projects for progress reporting: it is difficult to sort through hundreds of activities to find those that have started or finished. A filter can reduce the hundreds to a few dozen.

A useful filter for a "look ahead" view would look like this:

Level 1 _ must meet	⊙ All € Any	of the	e following criteria:	
Selection criteria:				
- + - Early dates				
Select if		ls	Low Value	High Value
Early dates		WR	DD+0D	DD+1M

This states that the activity should be visible is any of the "early dates" – either "Early Start" or "Early Finish" occur within the window "DD" i.e. the Data Date (The date on which the programme was last scheduled) and "DD+1M" (Data Date +1 Month). Applying this filter to our programme results in:

Activity	Activity	Oria	Early	Early	BLDG	PHSE	FMAN						2002					
ID	Description	Due	Chart	Einigh				FEB		M	IAR				APR			
10	Description	Dui	Start	Fillisti				18 ₁ 25	_4	_11	_ <mark>18</mark>	J25	1	8,	15	_ <mark>22</mark>	29	
House																		
Start Up																		
A010	Start Project	1	01MAR02	01MAR02	01	01	01	01MAR02	-01MAR	02 1								
A020	Clear Site	3	04MAR02	06MAR02	01	01	02	04MAR	02 🗖 06	5MAR0	23							
A030	Set Out	2	07MAR02	08MAR02	01	01	02	07M	AR02 🗖	-08MAF	R02 2							
Substruct	ture									1								
A040	Foundations	10	11MAR02	22MAR02	01	02	02		11MAR0	2 👝	<u> </u>	22MAR0	2 10					
A050	Floor Slabs	7	21MAR02	29MAR02	01	02	03			21M	AR02 🗀			02 7		:		
Superstru	icture											1						
A060	Superstructure	20	25MAR02	19APR02	01	03	03				25MAR02	2	<u> </u>	_	<u> </u>	19APR	02 20	J
								•					1					
											\sim							

Only activities with a portion of their duration in the area indicated above have been selected (the Data Date is shown by the blue line, and is the 1 March 2002. The filter has selected activities that run between the 1 March and the 1 April 2002).

So we have a filter that we can use when reporting progress in our programme. Progress reporting will be covered in Chapter 9.

Until then, restore our layout to include all activities (i.e. run filter "All").

8. Resources

Primavera has the facility to receive resource data, apply costs to the resources, report these resources graphically, level the resources and apply actual expenditure against budgeted.

The first step is to establish a resource "dictionary" of the resources we wish to define for the project. Data > Resources opens the following window:

Resources			×
<u>R</u> esources:			
Resource Ur	nits Driving Base	Description	
		5	
			•
Limits:		Prices:	
		_	
	l hrough		l hrough
		0.00	
6		0.00	7
		0.00	
		0.00	
Transfer	Print Calo	culate	
Calendars		Close	Help

- 1. The resource "code"
- 2. The units that apply to this resource (e.g. m³, Hours, litres)
- **3.** Whether the unit is "Driving" or not (i.e. whether the duration is driven by the resource quantity divided by the resource output)
- **4.** The calendar to be used when this resource is applied.
- **5.** A description of the resource

Page 57 of 82

- 6. Resource limits (used in resource levelling)
- 7. The cost, if required, per unit of the resource. The cost can reflect the monetary cost (if desired) or another aspect, such as the number of man hours required to place a unit of the resource. However, there are other ways to show this and this will be discussed later.

R	esources					×
	Resources:	,				_
	- + ▼ BUB Resource	Units	Driving	Base	Description	
	Bob Bolt Dix Wen	Days No. Days Days		1 1 1	Bob the Builder Nuts and Bolts Mr Dixon Wendy	
	Limits:		T 1		Prices:	_
	Normal Max 1 0 0 0 0 0 0 0 0 0	2 0 0 0 0 0	I hrou	<u>gh</u>	Price/Unit Through 50.00 0.00 0.00 0.00 0.00 0.00 0.00	
	Transfer Calendars	F	Print		Calculate Close Help	

Enter the data shown above. Each person has a normal limit of 1 and a maximum limit of 2. The Price per unit (i.e. Cost per Day) of Bob is 50, Mr Dixon is 35 and Wendy is 25. Nuts and Bolts are a material resource (versus a manpower resource) and have no limits or, in this example, a price per unit.

After entering the Price/unit you will be asked if you would like to calculate costs now. Select "Yes" in each instance.

Once the resource data has been entered, close the window. Our next step is to apply these resources to our activities. Highlight the first activity – A010: Start Project – and press Ctrl+R (or from the drop-down menu, View > Resource Detail). The following window will appear:

Resources	×
-+-	
Resource	
Cost Acct/Category	
Driving	
Curve	
Units per day	
Budgeted quantity	
Res Lag/Duration	
Percent complete	
Actual this period	
Actual to date	
To complete	
At completion	
Variance (units)	
Early start	
Early finish	
Late start	
Late finish	
	K

Now click the "+" sign and the down-triangle and your will be presented with a list of resources which you can apply to this activity. Let us assume that Bob is required to start the project – to sign the papers and set out the works. Select "Bob" as the resource and enter 1 unit per day. The budgeted quantity should immediately become "1" (i.e. 1 unit/day * 1 day).

Now, with the cursor in the "Resource" box of this window (i.e. highlighting BOB), press the right arrow to create another resource.

This time use the resource "Nuts and Bolts" and enter an amount in the Budgeted Quantity of "10". The number 10 should also appear in the "Units per Day" column.

Page 59 of 82

February 2002

Act. ID	Resource 1	Units/day	Resource 2	Budg.Quant.
A010	BOB	1	BOLT	10
A020	DIX	1	BOLT	5
A030	WEN	1	BOLT	20
A040	WEN	1	BOLT	25
A050	BOB	1	BOLT	20
A060	DIX	1	BOLT	15
A070	DIX	1	BOLT	15
A080	DIX	1	BOLT	20
A090	WEN	1	BOLT	10
A100	BOB	1	BOLT	5

Highlight the next activity add resources as per this table:

Close the Resource window and change two of the columns to show the resource assignments... the column titles will be "Resource" and "Budgeted Quantity":

Activity	Activity	Orig	Early	Early	Resource	Budgeted F			_			2002
In	Description	Dur	Start	Finieh	ID	Quantity	FEE	3		M	AR	
10	Description	Dui	Start	Thisi	10	Quantity	18 I	25	4	11	18 I	25
House												
Start Up												
A010	Start Project	1	01MAR02	01MAR02	BOB, BOLT	11.00	01M	AR02	0-01MARC)2 1		
A020	Clear Site	3	04MAR02	06MAR02	DIX, BOLT	8.00	(C)4MAR	02 🗖 06	MAR02	2 3	
A030	Set Out	2	07MAR02	08MAR02	WEN, BOLT	22.00		07N	AR02 🗖 H	08MAR	02 2	
Substruct	ure									1		
A040	Foundations	10	11MAR02	22MAR02	WEN, BOLT	35.00			11MAR02			-22MARO
A050	Floor Slabs	7	21MAR02	29MAR02	BOB, BOLT	27.00				21MA	R02 🗖	
Superstru	icture											
A060	Superstructure	20	25MAR02	19APR02	DIX, BOLT	35.00				2	SMAR	J2
A070	Roof	10	22APR02	03MAY02	DIX, BOLT	25.00						
Finishes												
A080	Services and Finishes	20	29APR02	24MAY02	DIX, BOLT	40.00						
Snag and	Handover		•	•								
A090	Snagging	5	27MAY02	31MAY02	WEN, BOLT	15.00						
A100	Handover	1	03JUN02	03JUN02	BOB, BOLT	6.00						

Primavera cannot, unfortunately, show more than one resource in this view: it "lumps together" the resources so that the total Budgeted Quantity is shown for all resources applied to that activity.

We can see how these resources are distributed across time in a resource profile. Press the button (alternatively, from the drop-down menu, View > Resource Profile or Ctrl+F7).

This should appear at the bottom of the screen:



This is the resource profile for the resource (or person) "BOB" – Bob The Builder. We can see he spends a total of 8 days on site, the majority towards the end of March.

We need to modify this to tell us exactly what we want.

Press the "Display" button (under the "Select" button in the Resource Profile/Table window) and this window will appear:

	Resource Profile Display Options	×
	Display Type: • Units • Costs • Late • Late • Late • Histogram	
4	Weeks Exclude actual to date from current estimate Histogram	
6	Calculate: Total C Peak C Average Total C Peak C Average Total C Peak C Average Total C Peak C Average Total C Peak C Average C Peak C Average C Peak C Average C Peak C Average C Peak C Average C Peak C Average C Peak C Peak C Peak C Average C Peak C Peak C Average C Peak C Peak C Average C Peak C Peak C Average C Peak C Pea	
9	Calendar: Draw limits 10 1 Emphasize overload with color Curves	
	Iv Current estimate Iv Earned value Iv Planned value Iv Show curves using different line types It Close It Elose Help	

- Would you like to see the Units or the Cost (as entered) of those units? i.e. Units or (Cost/Unit) x Units.
- Would you like the graphs to show their data based on "Early Start" dates or "Late Start" dates.
- **3.** Should the graphs show data collected from all activities or only the currently selected activities.
- **4.** Gives the time interval for the graph data (i.e. a new bar in a histogram chart or a new plot-point in a line ("curves") graph.
- Allows you to choose the type of graph to be displayed histogram or curves (line graph).

The following (6 to 10) apply to histograms only:

6. Do you want the graph to display totals per defined time interval (4.), average or peak usage.



- Values these are used once progress has been entered and the requirement is to compare planned and actual
- 9. Allows you to define the calendar to be used when calculating average resource usage (i.e. may cause a difference if a resource is only used on a four day week when the activity runs through a five day week)
- **10.** Drawing of Limits and Overloads refers to resource peak usage and levelling.
- Refers to the resource usage curves: allows you to define different lines for the various curves being shown. Alternatively Primavera will use different colours to highlight the different data lines.

More information on these can be found by pressing the "Help" button.

Change the contents of the window to this:

iantau -		
ispiay ype:	Dates:	Activities:
Units 🙀	Early	(● All
Costs	C Late	C Selected
ime jnterval:		Histogram
Veeks 🗾		Curves🌟
Exclude actual	to date from current es	timate
istogram		
stogram sloulsto:	Formati	Values
alculate. CTotol	C Area -	Values.
	€ Rar	C Famed valuate
Геак Оverаде	v Dai	C Planned value
ale <u>n</u> dar:	I	Draw limits
		Emphasize overload with color
urves	*	
Surrent estimate	Earned v	alue 🦷 Planned value
	·	

Press "Close" and select the resource "BOLT" from the window in the drop-down menu in the Resource Profile/Table area. Your histogram display should look like this:



This tells us that we will be using a total of about 120 bolts and their distribution across the project. If we want to see the precise number we should select the resource table, rather than the graph.

Press the button (Or View > Resource Table or Shift+F7) and select "BOB" from the drop-down resource list. Your display should change to:

Row	Group Name							_								_		
1	Bob the Builder			1			2	5										1
2	Nuts and Bolts			10	25	13	18	18	4	4	4	8	13	5	5	5	10	5
3	Mr Dixon				3			5	5	5	5	5	10	5	5	5		
4	Wendy				2	5	5										5	
		Г																
		Г																
		Ι	4.0	A F		44	40	A F	4		47	22	20	<u> </u>	4.2	20	27	2 4
			FEB	20	4	MA	10	20		• A	PR	22	29	U U	MAY	120	21	II NUL
			2002															

Here we now see the weekly total number of days that each person will be required to spend on the job, as well as the weekly total numbers of bolts used.

Exporting this data out of Primavera is tricky... it is a case of finding the correct report type and modifying it to your requirements.

To export this report we need to run report RL-01. It can be found here:

Format	Tools Data Window Help	
<u>, 1</u>	Schedule F9 Level Shift+F9 Global Change	▋᠊᠊╉▏▐╋ ▋ ᅕᅟ≜▖ ⅈ▋ ़ि
ity	Update Progress Ctrl+F9	FEB MAR
tion	Store Period Performance	_,18 ,25 ,4 ,11 ,18 ,25 ,1 ,8
	Tabular Reports 🔹 🕨	Schedule
	Graphic Reports 🔹 🕨	Resource Control
	Look InfoMaker Update Data Dictionary	Cost Productivity Matrix Earned Value (Units) Report Writer Tabular
	Web Publishing Wizard	Production
		Options 21MAR02 29MAR02 7
	Project Utilities	25MAR02
	Options 🕨	
shes	1 Project Check-in/Check-out	

Page 65 of 82

February 2002

We are then faced with this menu:

Resource Loading - Total Monthly Summary 1-02 Resource Loading - Detailed by Day 1-03 Resource Loading Activity Summary 1-04 Resource Loading - Quarter Peak Summary 1-05 Resource Loading - Detailed for Systems Analyst 1-06 Resource Loading - Average Monthly Use 1-07 Resource Loading - Average Weekly Detailed Total 1-08 Resource Loading - Average Weekly Use	
L-02 Resource Loading - Detailed by Day L-03 Resource Loading Activity Summary L-04 Resource Loading - Quarter Peak Summary L-05 Resource Loading - Detailed for Systems Analyst L-06 Resource Loading - Average Monthly Use L-07 Resource Loading - Weekly Detailed Total L-08 Resource Loading - Average Weekly Use	
IL-03 Resource Loading Activity Summary IL-04 Resource Loading - Quarter Peak Summary IL-05 Resource Loading - Detailed for Systems Analyst IL-06 Resource Loading - Average Monthly Use IL-07 Resource Loading - Weekly Detailed Total IL-08 Resource Loading - Average Weekly Use	
IL-04 Resource Loading - Quarter Peak Summary IL-05 Resource Loading - Detailed for Systems Analyst IL-06 Resource Loading - Average Monthly Use IL-07 Resource Loading - Weekly Detailed Total IL-08 Resource Loading - Average Weekly Use ↓	
IL-05 Resource Loading - Detailed for Systems Analyst IL-06 Resource Loading - Average Monthly Use IL-07 Resource Loading - Weekly Detailed Total IL-08 Resource Loading - Average Weekly Use	
IL-06 Resource Loading - Average Monthly Use IL-07 Resource Loading - Weekly Detailed Total IL-08 Resource Loading - Average Weekly Use	
IL-07 Resource Loading - Weekly Detailed Total IL-08 Resource Loading - Average Weekly Use	
IL-08 Resource Loading - Average Weekly Use	
Modify Add Delete	

Report RL-01 is already selected. Click the "Modify..." button and these windows will appear. Make the modifications highlighted to create the report we require. The various screens can be accessed by clicking the "Tabs" under the Title.

Presource	Looping - Lotal Mon	my Summary		>>	Run
source Select	ion Format	Selection	Timescale	1	
Respuice sele	ction:				
Profile	Low Value	Low Yalue	High Value	High Value	
	Hessurce	Losi Account	Mesource	Lost Account	-
					*

Leave this selection blank to select all resources. If we wanted to omit a resource (e.g. Nuts and Bolts) we could put the condition "NE" (not equal to) under profile and the resource "NUTS" under "Low Value Resource"

RL-01 A000 - Resource Loading	Reports
Title Resource Loading - Total Monthly Summary	Bun
Resource Selection	n Timescale
1 Font Aid.	Regular, B
C Export report in CSV format to the file	SWINVP3DUTVP3.cm
2 Digenize by: Group/s	ubtotal by:
Options	
Truncate activity description	Sortby
Display row totals C Lett C Right	Serton Order
Divide by 1 0 0 ccimate: 0	
Tiansfer	OK Cancel Help
RL-01 A000 - Resource Loading	Reports
Title: Resource Loading - Total Monthly Summary	Bun
Resource Selection Farmel Selection	Timescales
Level T must meet (* Are	ollowing criteria:
Selection criteria	
Selectif is	Low Value High Value
1 1 1	1
Translet	OK Cancel Help
RL-01 A000 - Resource Loading R	eports 🗙
Title Resource Loading - Total Monthly Summary	Run
Resource Selection Format Selection	Timescale
Dale range	
1 Start: CILO1MAR02 - Env	± 01/30/UNI2 •
2 CPeak	
CAverage	
Display	E martine and a second s
0 gas theory por week 7₽	Fat neyh Janany +
Chly include values within date range	
Transfer	DK Cancel Help

Important points to note here are to Generate the report in P3 (1), to organise by Resource and produce a summary report (2) and to display row totals on the left (3).

The selection is irrelevant to us – we want a report for the whole project. However we could filter for any of the codes that we have established, in the same way that we filtered the project in Chapter 7

Finally we set the time we require our report to span (1) and the time unit we require the report (3). We can also specify whether we want the report to show Total, Peak or Average resource usage (2).

With this information set we can run the report. Click the "Run" button in the top right hand corner of the window.

This window will appear:

Tabular Report Options	×
 View on screen Print immediately 	ОК
C Save to the following file: P3.0UT	Help
	Network
<u></u>	

We want to see this report on screen so click "OK" and the Primavera report writer will produce the required report:

🗖 Primave	ra Look - [Untitled]										
🖹 File Edit	View Insert Format Table '	Window He	þ								
			Å								
Joe Bloggs Buil	ders		PRIMAVERA	PROJECT	PLANNER		Hous	e Building	Programm	e	
REPORT DATE	19MAR02 RUNNO. 14 10:19		RESOURCE	LOADING	REPORT		START DATE 01MAR02 FIN DATE 31JUL02*				
Resource Loadii	ng - Total Monthly Summary	TOTAL USAGE FOR WEEK						A DATE 01	MAR02 P/	AGENO. 1-	• 1
			25FEB	4MAR	11MAR	18MAR	25MAR	1APR	8APR	15APR	
RESOURCE	RESOURCE DESCRIPTION	TOTAL	2002	2002	2002	2002	2002	2002	2002	2002	
BOB	Bob the Builder	9	1			2:	5				
BOLT	Nutsand Bolts	145	10	25	13	18	18	4	4	4	
DIX	Mr Dixon	53		3			5	5	5	5	
WEN	Wendy	17		2	5	5					
	REPORT TOTAL	224	11	30	18	25	28	9	9	9	

To get this report into Excel format, where the data could be manipulate and the report format modified, we can first copy and paste this data into Microsoft Word, then copy and paste it again onto an Excel spreadsheet.

Page 68 of 82

February 2002

For instance, you will notice that due to the width of the report, it spans two pages. We can copy and paste both pages into Excel and reformat them to a single page.

Note that the export copies only the values of the data and formulae will have to be replaced (e.g. the weekly totals).

A direct copy from Primavera Look to Excel WILL NOT WORK.

9. Reporting Progress

The first thing that we should do though, is save our original programme as a "baseline" programme against which future revisions and progress updates can be measured.

So open and run the filter for "All Activities" (FL-01) to restore all activities to our layout. Then save our current layout either through the drop-down menu or by pressing Ctrl+S.



We now need to copy this programme. Again, from the drop down menus highlight "Copy...":



That will open this window:

Сору	×
From c:\p3win\projects\ Project group/ Pro	house Browse ject name: A000
Project ID:	Planning unit: Day <u>Projects:</u>
Number/version:	Revision Target
Title:	House Building Programme (1)
Company:	Joe Bloggs Builders
	All - All Activities
: To	
c:\p3win\projects\	house Browse
Project group:	Project name:
Planning <u>u</u> nit:	Day Project ID:
Num <u>b</u> er/version:	Revision Target
<u>T</u> itle:	House Building Programme
<u>C</u> ompany:	Joe Bloggs Builders
Add the following o	haracters: to the Cright of the current IDs.
	Copy Cancel Help

- Represents the programme being copied A000 should be highlighted under the "Projects: " heading.
- 2. This section shows what you want to copy the programme to. Ensure that the directory is correct (C:\p3win\projects\house). The first field required to be filled in is "Project group: " – enter in P101 (i.e. Progress Report 1 of programme A001). The second field will be our Revision – to indicate that this is a progress update

To c:\p3win\projects\ł	nouse			Browse				
Project group:	P1A1	Project <u>n</u> ame:						
Planning <u>u</u> nit:	Day 💌	Pr <u>oj</u> ect ID:						
Num <u>b</u> er/version:	Progress No. 01							
<u>T</u> itle:	House Building Prog	House Building Programme						
<u>C</u> ompany:	Joe Bloggs Builders							

Press the "Copy" button and the programme is copied.

Open up our newly created programme A101 through the File-Open drop-down menu and it will open over your original programme.

We now always need to be able to compare our progressed programme to our original or "baseline" programme. We therefore need to call our original programme the "Target Programme". We can identify it as such here:



... This opens the following window:

Targets			×	
Project group/ Project name:	A101			
Target Number/Ve	Number/Version		Data Date	
1				
Update OK		ancel	Help	

Page 72 of 82
With the Target space beside "1" highlighted press the down arrow in the input area and select "A000", our original programme. Click OK and programme "A000" is set as the Target programme of A101.

Now we need to show this target programme in order that, when progressed, we can see the variation in the bars.

Press Ctrl+F11 to bring up our Bar editing window. Create a new bar under the current "Early Bar" and use these settings (changes indicated with a *):

Add Bar Definition		×
Description: Target Bar 🔆	Position:	1
Structure Label		
Structure:		
▼ ♦ 3		
Type Size Position Outline Show		
Start point Target 1 early start 🗰 7 Center 🛛 🖉 📑		
End point 🗮 Target 1 early finish 7 Center 🖬 🗖		
Bar 🗮 🛃 🗹		
₩		
Milestone size: 5		
Bar color:		
Separator:		

Click on "OK" and "Close".

A.Blakey

Your display should adjust to this:

Activity	Activity	Oria	Early	Early	BLDG	PHSE	FMAN						2	2002				
un É	Deparimtion	Dur	Start	Finich				FEB			MAR				APR			N
	Description	Dui	Start	riiisii				_18 _25	_4	1	1 ₁ 18	₁ 25	1	8	15	22	29	6
House																		
Start Up																		
A010	Start Project	1	01MAR02	01MAR02	01	01	01	01MAR02	ютма	R02	1							
A020	Clear Site	3	04MAR02	06MAR02	01	01	02	04MAR	02 🗖	06MA	R02 3							
A030	Set Out	2	07MAR02	08MAR02	01	01	02	07M	AR02	180-	MAR02 2							
Substruct	ture																	
A040	Foundations	10	11MAR02	22MAR02	01	02	02		11MAR	02 🗖		-22MAR0	2 10					
A050	Floor Slabs	7	21MAR02	29MAR02	01	02	03			2	1MAR02			R02 7-		-		
Superstru	ucture																	
A060	Superstructure	20	25MAR02	19APR02	01	03	03				25MAF	102	-	<u>—</u>		-19APR	02 20	
A070	Roof	10	22APR02	03MAY02	01	03	03								22APR	02		03MAY0
Finishes																		
A080	Services and Finishes	20	29APR02	24MAY02	01	04	01									29APR0	12 📛	<u> </u>
Snag and	Handover																	
A090	Snagging	5	27MAY02	31MAY02	01	05	01											
A100	Handover	1	03JUN02	03JUN02	01	05	01											

The black line indicates the "target" or baseline programme; the yellow indicates the currently open programme. If adjustments are made to the programme, the yellow lines will move but the black lines will remain in their current positions.

The next step is to organise our columns for easy data entry. Press F11 and arrange the columns like this:

Columns						×
Column information:						
Data	Title	Width	Align	D.	ata font	T
Original duration Early start Early finish Actual start Actual finish Remaining duration	Orig Dur Early Start Early Finish Actual Start Actual Finish Rem Dur	5.00 10.00 10.00 10.00 10.00 5.00	Center Center Center Center Center Center	Arial,8 Arial,8 Arial,8 Arial,8 Arial,8 Arial,8		• • •
Column title <u>f</u> ont: <u>S</u> how lines betwee	Arial,8,8 n rows and columns	•				
		OK]	Cancel	Help	

That is, replace the columns created for the Activity Codes with "Actual Start", "Actual Finish" and "Remaining Duration".

Click "OK" and your display should adjust to:

Activity	Activity	Oria	Early	Early	Actual	Actual	Rem						20	02
								FEB			N	IAR		
10	Description	Dur	Start	Finish	Start	Finish	Dur	18 ₁	125	4	,11	18	25	1 ₁ 8
House														
Start Up														
A010	Start Project	1	01MAR02	01MAR02			1	04 M 0	PON	04144.05	000.4			
								UTIWA	RUZ	HUTWAR	1021			
A020	Clear Site	3	04MAR02	06MAR02			3	04	MAR	h2 🗖 n	ISMARO	23		
		-					-				•			
A030	Set Out	2	U/MARU2	U8MARU2			2		07M	AR02	- HO8MA	R02 2		
Substruct	ture													
A040	Foundations	10	11MAR02	22MAR02			10				\			
										11MARU	J2 📃		22MARU	2 10 2
A050	Floor Slabs	7	21MAR02	29MAR02			7						-	
											21 M	ARU2 🗖		9MARU2 /
Superstri	ucture													

We are going to report progress up to the 23 March 2002. Primavera has a facility whereby you can highlight the activities that could be affected by progress up to a particular date. Press the Progress Spotlight - 10 - button and the display will adjust to this:

Activity	Activity	Orig	Farly	Farly	Actual	Actual	Rem						20	02	_
Activity	Addity	ong	Carly	Carly	Avtua	Actual		FEE	3		N	IAR			
ID	Description	Dur	Start	Finish	Start	Finish	Dur	18	25	4	- 11	18	25	<mark>ر 1</mark> ر	8
House															
Start Up															
A010	Start Project	1	01MAR02	01MAR02			1	01M	AR02	HO1MA	R02 1				
A020	Clear Site	3	04MAR02	06MAR02			3)4MAR	02	06MAR0	23			
A030	Set Out	2	07MAR02	08MAR02			2		07N	AR02	HOSMAR	R02 2			
Substruct	ture														
A040	Foundations	10	11MAR02	22MAR02			10			11MAR	02	<u> </u>	-22MAR0:	2 10	
A050	Floor Slabs	7	21MAR02	29MAR02			7				21M	AR02 🗖		9MAR02	7.

The progress spotlight, by default, highlights one week after the current Data Date. We need to adjust it to highlight the area we wish to progress. Move your cursor over the rightmost vertical blue line and the cursor will change to . Drag the vertical blue line to the 23 March 2002 and release. Your display should now look like this:

- +	 Superstructure 														
Activity	Activity	Oria	Early	Early	Actual	Actual	Rem						20)02	
In Í	Description	Dur	Start	Finieh	Start	Finich	Dur	FEB	_		M/	AR		<u> </u>	
10	Description	Dui	Start	Thist	Start	1111311	Dui	18 I	25	4	11	18	25	1	- ¹
House															
Start Up															
A010	Start Project	1	01MAR02	01MAR02			1								
								01MA	RU2	HUIMARI	02.1				
A020	Clear Site	3	04MAR02	06MAR02			3	04	MAR		MAROO	2			
	0.1.0.1	-	07140 000	00140.000				- 04	nvi Aire		JIMAROZ				
A030	Set Out	2	U/MARU2	U8MAR02			2		07M	AR02 🗖	-08MAR(D2 2			
Substruct	ture	_													
A040	Foundations	10	11MAR02	22MAR02			10				÷				
										11MAR03	2 🚞		22MAR0	12 10	
A050	Floor Slabs	7	21MAR02	29MAR02			7				24 MA	R02 -			02.7
											2100			201VIAIN	.02 4
Superstru	ucture														
A060	Superstructure	20	25MAR02	19APR02			20				2	SMARC			
4.070	Basé	40	2240002	02M41/02			40					on Arto			
A070	ROOT	10	ZZAPRUZ	USWAYU2			10								2

Page 75 of 82

February 2002

A.Blakey

The five activities affected by the progress "spotlight" are highlighted in yellow. We can now enter our progress. This is done by entering Actual Start and Actual Finish dates in the relevant columns. Note that once an "Actual Finish" date is entered, the "Remaining Duration" automatically reverts to 0.

Enter the following:

Activity	Activity	Oria	Farly	Farly	Actual	Actual	Rem	2002
ID	Description	Dur	Start	Finish	Start	Finish	Dur	FEB MAR APR
10	Description	Dai	Start	Thisi	Start	Thisi	- Dear	25 21 25 4 11 18 25 1 16 22 23 24 25 21 25 25 21 29
House								
Start Up								
A010	Start Project	1	04MAR02A	04MAR02A	04MAR02	04MAR02	0	
A020	Clear Site	3	06MAR02A	08MAR02A	06MAR02	08MAR02	0	
0.000	0.4.0.4	-	44140 000 0	44140 000 0	44140.000	44140.000		
A030	Secout	2	TTMARUZA	TIMARUZA	TIMARUZ	TTMARUZ	0	11MAR02A -11MAR02A 2
Substruct	ture							
A040	Foundations	10	13MAR00A	0240802	13MAR02		7	
A040	1 oundations	1.0	I SMAROZA	02APR02	TOMAR02		11	13MAR02A 02APR02 10
A050	Floor Slabs	7	18MAR02A	29MAR02	18MAR02		5	
								18MAR02A
Superstru	ucture							
A060	Superstructure	20	22MAR02A	18APR02	22MAR02		19	
A070	Roof	10	22APR02	03MAY02			10	
		1			1	1	I I	

In addition to the spotlighted activities, progress has also been entered for Activity A060: that activity has immediately become part of the "spotlight".

Once progress has been entered press F9 and schedule the programme to our new date, the 23 March 2002.

Activity Activity Early Actual Actual Orig Early Rem FEB 18 MAR 11 18 ID Description Start Finish Start Finish Dur 25 .25 .4 House Start Up Start Project 04MAR02A 04MAR02A 04MAR02 04MAR02 A010 0 1 04MAR02A -04MAR02A 1 A020 Clear Site 3 06MAR02A 08MAR02A 06MAR02 08MAR02 0 06MAR02A - 08MAR02A 3 A030 Set Out 2 11MAR02A 11MAR02A 11MAR02 11MAR02 0 11MAR02A -11MAR02A ubstructur 10 13MAR02A Foundations 02APR02 13MAR02 A040 7 13MAR02A -02APR02 10 Floor Slabs A050 18MAR02A 09APR02 18MAR02 5 7 09APR02-7-18MAR02A ictur iperst 22MAR02A 22MAR02 A060 Superstructure 20 29APR02 19 22MAR02A A070 30APR02 10 Roof 10 13MAY02 30APR

The display should look like this:

Page 76 of 82

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A.Blakey

February 2002

A few things to note about the progress reflected:

The projected time to completion now takes into account any links active on that Activity. For instance, A050 only has five days remaining duration, yet is pushed out to 9 April. The programme reflects the FF+5 day link from A040, which is due to finish on the 2 April, 1 week earlier.

Other necks are reflections of weekends and non-work periods. For instance, the period of time immediately after the new Data Date is a weekend: there is no activity over a weekend so the bar is necked.

Finally we can see the slippage suffered as a result of lack of progress in a column called "Variance Target 1 Early Finish" – this column measures the difference, in days, between the Early Finish of this programme and the Early Finish of the Target Programme.

Activity	Activity	Orig	Early	Early	Actual	Actual	Rem	Variance 1									200	2
ID	Description	Dur	Start	Finiels	Start	Finiels	Dur	Forty Finish	F		M	AR				APR		
IU IU	Description	Dur	Start	Finish	Start	Finish	Dur	Farty Finish	25	- 4	11	18	25	1	8	15	22	129
House																		
Start Up																		
A010	Start Project	1	04MAR02A	04MAR02A	04MAR02	04MAR02	0	-1	R02,	⊨ A∎A	4MAF	R02A	1					
A020	Clear Site	3	06MAR02A	08MAR02A	06MAR02	08MAR02	0	-2	R0	2A 🖥	- 08M	(ARO)	2A 3					
A030	Set Out	2	11MAR02A	11MAR02A	11MAR02	11MAR02	0	-1	IMA	R02	а <mark>ф</mark> А <mark>в</mark> 11	1MAF	02A 2	2				
Substruct	ture																	
A040	Foundations	10	13MAR02A	02APR02	13MAR02		7	-7	13N	ARO	2A 🗖	H		- 00	2APF	RO2 1	0	
A050	Floor Slabs	7	18MAR02A	09APR02	18MAR02		5	-7		18M/	AR02/	A 🚬		┿╸	⊭⊡ 0:	9APR	02- 7 -	
Superstru	icture																	-
A060	Superstructure	20	22MAR02A	29APR02	22MAR02		19	-6		22	MAR	02A		╪╍	H		<u> </u>	. 129
A070	Roof	10	30APR02	13MAY02			10	-6								30A	PR02	2 📛
Finishes																		-
A080	Services and Finishes	20	07MAY02	03JUN02			20	-6									07M	ΑÝΟ
Snag and	Handover																	-
A090	Snagging	5	04JUN02	10JUN02			5	-6										
A100	Handover	1	11JUN02	11JUN02			1	-6										-

Here we can see that the late start of the project pushed back the initial activities by 1 day: later delays in foundations resulted in 7 days

A.Blakey

being lost. Some early work on the superstructure has allowed us to recapture 1 day: the overall loss currently is 6 days behind programme.

For the next progress update, copy the previous progress update into a new programme and report progress there. Primavera allows two targets to be nominated – slippage (or gains) on the end date can then be measured against the previous update and the baseline programme.

So we've measured time, but how can we compare budgeted resource usage with actual?

Highlight activity A010 and press Ctrl +R. Your resource window should open.

Resources			×
-++			
Resource	BOB	BOLT	nanananan
Cost Acct/Category			
Driving			
Curve			
Units per day	0.00	0.00	
Budgeted quantity	1.00	10.00	
Res Lag/Duration	0	0	
Percent complete			
Actual this period	1.00	10.00	
Actual to date	1.00	10.00	
To complete	0.00	0.00	
At completion	1.00	10.00	
Variance (units)	0.00	0.00	
Early start	04MAR02	04MAR02	
Early finish	04MAR02	04MAR02	
Late start	04MAR02	04MAR02	
Late finish	04MAR02	04MAR02	
			•

We can enter actual resource usage in the "Actual this period" and "Actual to date" slots. If we imagine a situation where BOB lost his bolts and had to buy more, and as a result had to work overtime to get the job done, we could enter "1.5" as BOB's Actual to date and A.Blakey

"20" as the Actual to date BOLT usage. The Variance should automatically update to "-0.5" and "-10", indicating that there was overuse of resources by BOB (0.5 days) and BOLTS (10 No.).

Act.	Resource	Actual	То	Resource	Actual	То
ID	1	to	Complete	2	to	Complete
		Date			Date	
A010	BOB	1.5	0	BOLT	20	0
A020	DIX	3	0	BOLT	10	0
A030	WEN	1.5	0	BOLT	15	0
A040	WEN	5	7	BOLT	10	20
A050	BOB	5	2	BOLT	10	15
A060	DIX	2	19	BOLT	2	15

After entering these, display the resource histogram and select, from your Display options, all three curves (however do not select "Show curves using different line types"). Select "BOLT" as the resource you would like to see the display of.



Your display should look like this: notice how the higher bolt usage has peaked the histogram early, and the overall increase has pushed the totals up from around 140 No. to over 160 No.

The precise numbers can be gained by moving the mouse over the part of the line for where you would like the values and right-clicking with your mouse button.

This window will appear:

Curve Name	Color	Cumulative	Units	Close
		Value		-
Current estimate		167.00	No.	
Earned value		48.97	No.	
Planned value		145.00	No.	

If the report we generated previously is run again it will accommodate the increased resources expended to date, and increase the projected totals. Thus the data can be exported to Excel and a comparative graph created.

10. Conclusion

This guide has taken you through the basic functions of Primavera. It has also given a firm grounding in navigating the menu options in Primavera and entering data.

Armed with this information, and using Primavera's extensive help function, it is recommended that you further look into using multiple calendars, constraints and the powerful "Global Change" function.

For further general practice it is recommended that you access Primavera's tutorial functions (the 🖾 button in the top toolbar will access these lessons.

Appendix A Exercise 1

- Take your original programme and organise it by activity code. Now copy the entire programme (highlight all activities, copy, paste under the last activity – you will be asked how you would like the activities renumbered: select Rename all Activities: Auto-increment. For more information use the help function in this window)
- Assign your new activities to a new "Building" activity code House and assign the correct construction phase activity codes to the activities.
- Try reorganising your activities now on construction phase, then building. Link your activities so that each construction phase does not overlap
- 4. Rerun your resource histograms.
- 5. Repeat this process and add houses 3 and 4. Try filtering by foreman and work phase.