Microsoft Application Series

Project Advanced

Best STL

- Courses never cancelled: guaranteed
- Last minute rescheduling
- 24 months access to Microsoft trainers
- 12+ months schedule
- UK wide delivery

www.microsofttraining.net

Version 1

BEST STL

Microsoft CERTIFIED Partner

Institute of IT Training
Accredited Training Provider

Your Best STL Learning Tools

Welcome to your Best STL training course.

As part of your training, we provide you with the following tools and resources to support and enhance your learning experience.

Thank you for choosing Best STL.

1 In-course handbook

To guide you through your training while you are on the course.

Contains unit objectives, exercises and space to write notes.

2 Reference material

Available online through your delegate account.

Comprehensive reference material with 100+ pages, containing step-by-step instructions.

3 12 months access to Microsoft trainers

Available through online support forum.

Need help? Our team of Microsoft qualified trainers are on hand to offer advice and support.

4 Delegate account

Your delegate account gives you access to:

- Reference material
- Course exercise files
- Advice & support forum
- Rewards programme
- Promotions & Newsletters

5 Trainer hints and tips

Hints and tips available online from our Microsoft qualified trainers for:

- All MS Office applications
- VBA
- MS Project
- MS Visio

+ more

6 Save with Promotions

Save on further training courses you book with Promotions.

- 30% off list price (time limited)
- £50 off list price (blue card discount)

E&OE

Best Training reserves the right to revise this publication and make changes from time to time in its content without notice.

Contents

Filters and Groups

A filter is a tool for determining which tasks or resources are displayed based on the criteria contained within the filter. While a filter is applied other data will be temporarily hidden. When a highlight filter is applied all tasks or resources are displayed, with tasks or resources that match the filter criteria highlighted using font settings, for example a different colour.

Project contains a large number of standard filters that can be applied including an auto filter. Custom Filters can be created to meet specific user's requirements; these are created by specifying one of more field values that must be matched for a task or resources to be selected for display.

An interactive filter can be created which require the user to supply one or more values as the filter is being run.

Filters can either be used on task or resource views.

Auto Filters are the simplest and quickest form of filters, when applied all columns in the table on show will have a downward facing triangle enabling a menu to be displayed containing values to be chosen to act as a criteria. Multiple criteria can be added by choosing values from more than one column.

To apply an auto filter

Menu

Project / Filter / Auto Filter

Toolbar

With the auto filter applied, downward facing triangles will appear along side each field name. This enables any field to be used to filter what data is on display.

		Task Name	Duratior	Start	Finish	Predecessors	Resource Names
0		building	47 days	Sun 11/07/04	##########		
1		Start of Project	0 days	Sun 11/07/04	Sun 11/07/04		
2		Define Objectives	3 days	Mon 12/07/04	Wed 14/07/04	1	
3		Budget	2 days	Mon 12/07/04	Tue 13/07/04		Project Manager
4		Hardware	1 day	Tue 13/07/04	Tue 13/07/04	3FF	System Manager[50
5		Review Timescale:	1 day	Wed 14/07/04	Wed 14/07/04	4	Project Manager
6		Board Approval	0 days	Mon 26/07/04	Mon 26/07/04	5	
7		Building	32 days	Fri 16/07/04	Mon 30/08/04		
8		site inspection	31 days	Fri 16/07/04	Fri 27/08/04		
16		Construction	24 days	Tue 20/07/04	Fri 20/08/04		
17		Order Concres	1 day	Tue 20/07/04	Wed 21/07/04	18SF-3 days	Project Manager
18		Lay Foundatior	12 days	Mon 26/07/04	Tue 10/08/04	6	Builders[200%]

Figure 1

Example

To apply a criteria based on the field start; click on the triangle alongside the word start, then from the list choose either a date or one of the predefined settings which enable tasks to be displayed that are starting today, tomorrow, this week, next week, this month or next month.

The field that has been used to filter the data and the triangle will change to a blue font colour. This makes it clear to see which field is controlling what data is displayed.

The Gantt chart will only displays bars for the information on display in the table.

Additional criteria can be applied to other fields without removing the first criteria, this enables the data on display to be exactly what the user needs to display. When more than one field is used to specify criteria the criteria are applied together – all of them must be true for a task or resource to be displayed.

Example

On the summary table the tasks could be filtered by both cost and start fields to enable information to be displayed about costs for a particular time period.

Custom AutoFilters

A custom AutoFilter enables multiple criteria to be specified for one field.

Choose custom from the menu (triangle by side of field name) on the field that will be used to specify the criteria, the dialogue box below displays.

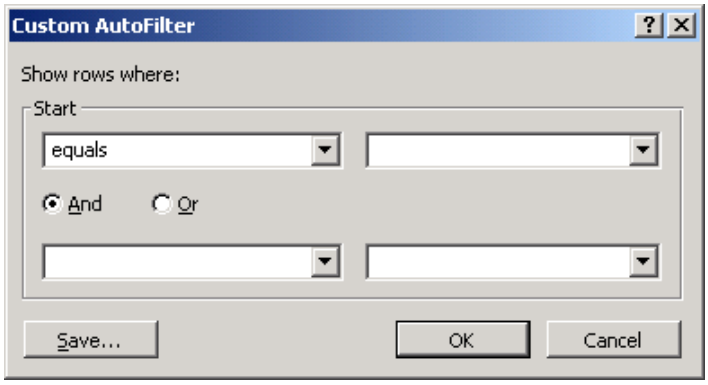


Figure 2

On the left choose the test that will be applied to the data, for example equals, and then set the value on the right.

A second criteria is then entered in the same way. In between the two criteria either And or Or must be set.

- Choosing And will mean that both criteria has to be true for a task or resource to be displayed.
- Choosing Or will mean that either criteria can be true for a task or resource to be displayed.

To apply the filter click on Ok.

To review the criteria that was entered, use the same field and click on custom again and the criteria will still be on show in the dialogue box.

This filter can be saved using the save button in the bottom corner of the custom dialogue box, the filter criteria will then be displayed in the filter definition area and this can be amended and a name added. Once saved a filter can be reapplied at any point.

Example

Working on the entry table a custom filter could be created to display tasks starting between two dates as shown below.

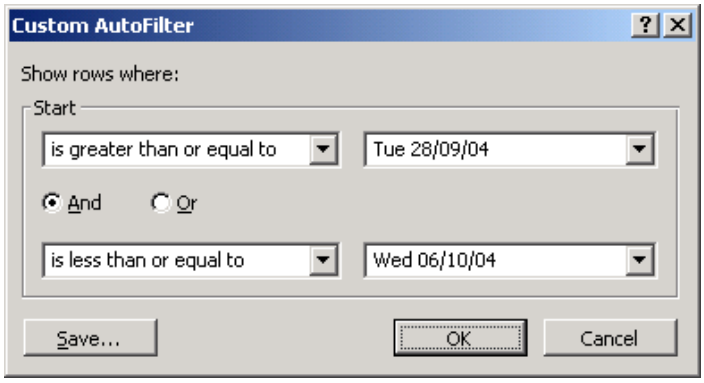


Figure 3

To remove a filter

Click back on the drop down triangle that is in blue and choose All from the top of the menu or alternatively press the F3 key on the keyboard. All tasks should be displayed. AutoFilters will still be turned on.

To turn off AutoFilters

Menu

Project / Filter / AutoFilters

Toolbar

Or click on the toolbar button again

The column names will not have  drop down triangles alongside them any longer.

To apply existing filters

Work in the view which you want to apply the filter to.

Menu

Project / Filtered for

Choose the appropriate filter from the list or alternatively click on more filters to get a complete list.

Toolbar

Figure 4

Use the drop down arrow to choose the filter to apply, if there is no suitable data an empty table will be displayed.

To remove the filter

Menu

Project / Filtered for / all tasks

Toolbar

Figure 5

Set the toolbar value back to All Tasks

Keyboard

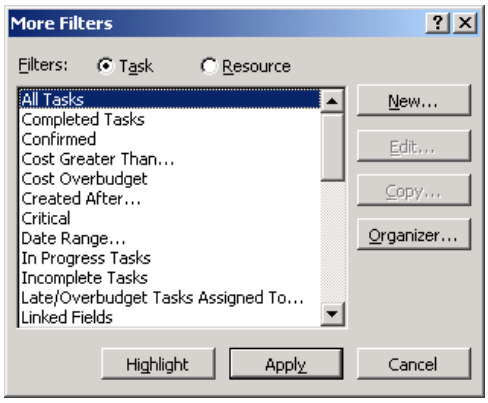
F3 will remove all filters.

Creating and Modifying Filters

To create a filter

Menu

Project/ Filtered for/ More Filters

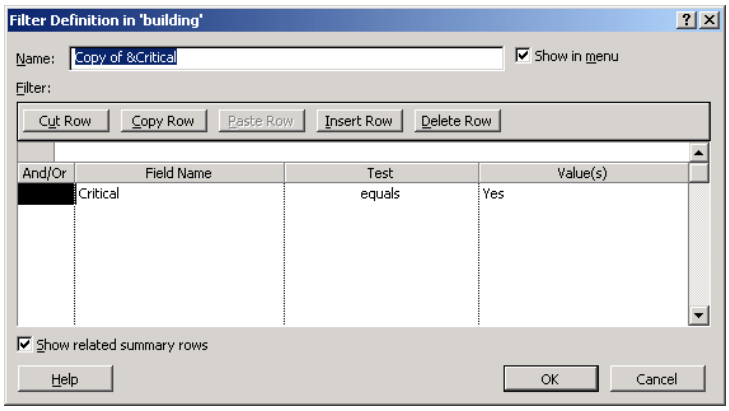


Filters can either be built from scratch or an existing filter can be selected and copied, this option is useful as it saves time.

Use the dialogue box that displays to choose whether the filter is being built for a Task or Resource View.

Copying an existing filter

Select a suitable filter and then click on Copy.



All the details from the original will be set in the Filter definition area and the name set to Copy of “existing filter name”

Type in a meaningful name for the filter and add in any new criteria or amend the existing criteria.

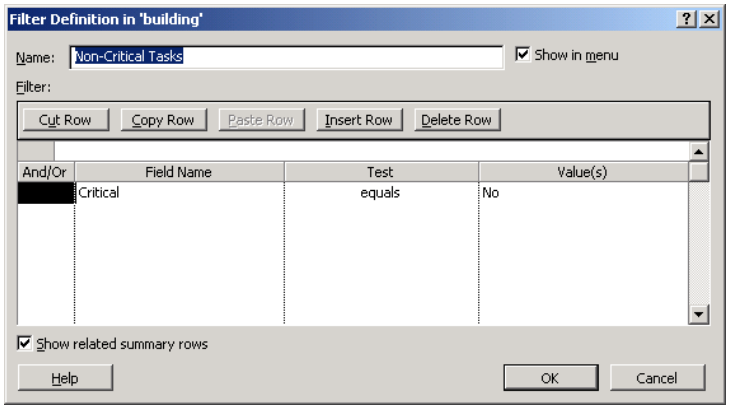
The & is used to provide a shortcut to enable the filter to be run from the toolbar. To use this shortcut the Alt key is used in conjunction with the letter is the & in front of it. For example for the critical filter Alt + C.

When setting up a new filter a shortcut key can be generated using the &, however a unique letter must be chosen, i.e. one that is not already used by another filter or menu item.

When the filter definition has been completed, Click on Ok to Save

Example

A copy of the Critical filter has been made and as shown below the copy has been renamed and the criteria amended to enable non-critical tasks to be displayed.



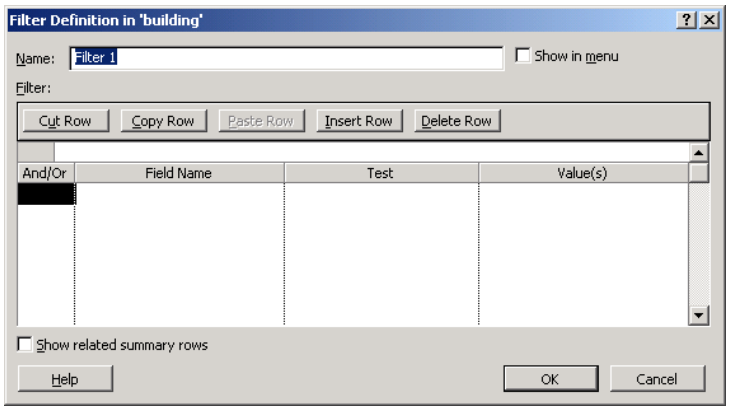
Filter Definition Options

Within the dialogue box the following options exist:

- Show in menu – a link to the filter is placed in the menu and toolbar.
- And/Or – only needs to be filled in if more than one criteria is being entered. And means all criteria entered must be matched for data to be displayed, Or means that any of the values entered could be matched for data to be displayed.
- Field name – choose the field that you are building a criteria for.
- Test – choose from the list, how the field name should be tested against the value entered. For example equals.
- Values – set the value that the field will be tested against.
- Show related Summary Rows – enables relevant summary rows to be displayed or hidden when the filter is applied.

New Filters

To create a blank filter click on the New button on the right side of the More Filters dialog box.



In Filter Definition enter a name for the filter, check the show in menu and enter field names, tests and values. Decide if summary rows should be displayed as part of the filter. Add in as many criteria as needed. Once more than one line is used in the filter definition dialogue box, the first column titled And/or will need to be completed.

By putting in a value And the computer will ensure that both criteria is matched for a value to be displayed.

If an Or is entered the computer will allow either criteria to be matched for a value to be displayed.

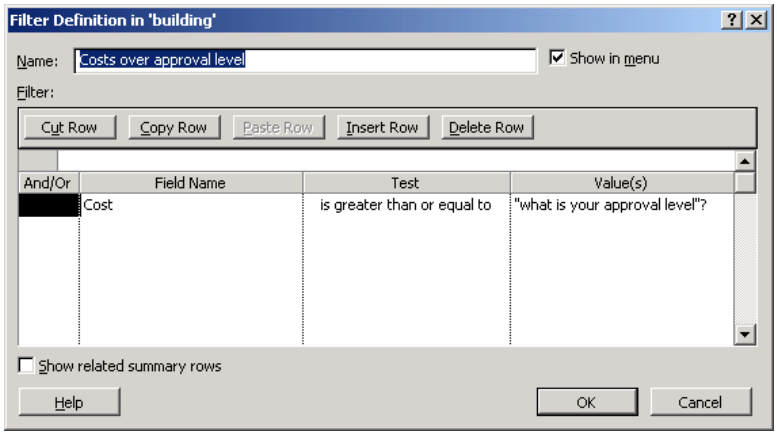
If both And and Or are used in a filter, the and criteria will be applied first.

Click on OK to complete the filter

If the filter is to be interactive – i.e. user entering a value when a filter is run. The value entered in the filter definition will be a question entered in the following format “Question”?

Example

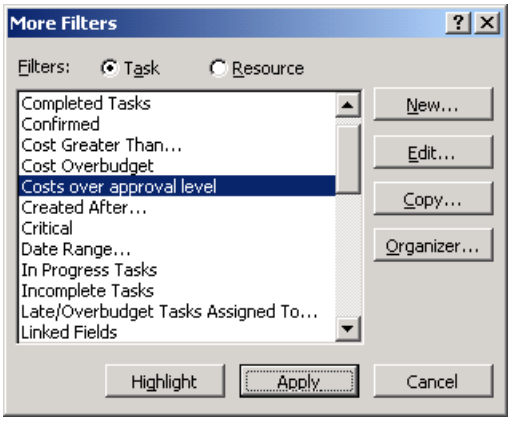
An interactive filter can be created which will ask the user to enter the level of costs that they can approve, when applied tasks with costs above this level will be displayed.



Modifying an existing filter

All existing filters can be modified to ensure that they match the needs of a project.

Project / filter for/ more filters



Select from the list the filter to be edited and then click on the Edit button.

If the filter to be edited is not on display change to the Resource option at the top of the dialogue box to see resource filters. The filter definition area will then display enabling the criteria and values to be amended. Once all editing changes have been made, click on OK to close the dialog box.

Example

The critical filter has been chosen to be edited and the check has been removed from show summary tasks.

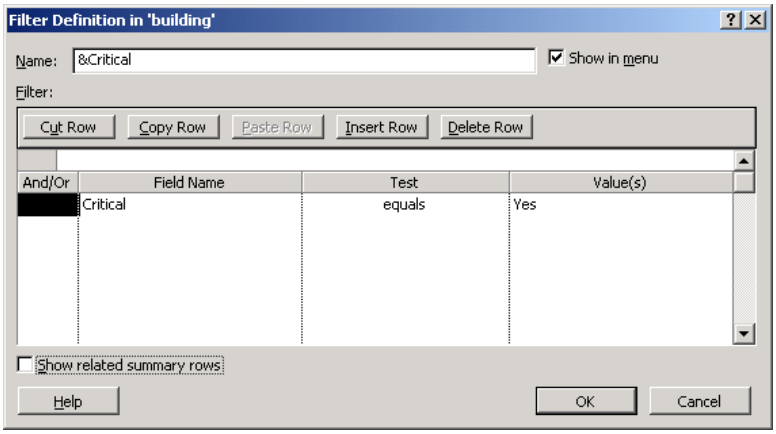


Figure 6

All filters created or modified are by default only modified or available to the project that was open at the time. To make these changes available to all projects refer to the course notes on Organizer.

Creating Custom Groups

Groups exist to enable data to be displayed in a clearer manner; they can be used to focus attention on key tasks or to make the data more manageable. When a group is applied a subtotal for numeric fields will be generated alongside the group name.

This group can be collapsed to enable focus on other areas for printing.

To apply an existing group

Menu

Project / Group by /

Choose a group to apply.

Toolbar

Figure 7

Use the drop down menu to choose the group to be applied.

Example

The diagram below shows the critical group applied. The groups are clearly visible and the data automatically placed into these groups – the Gantt chart also displays the tasks in that group.

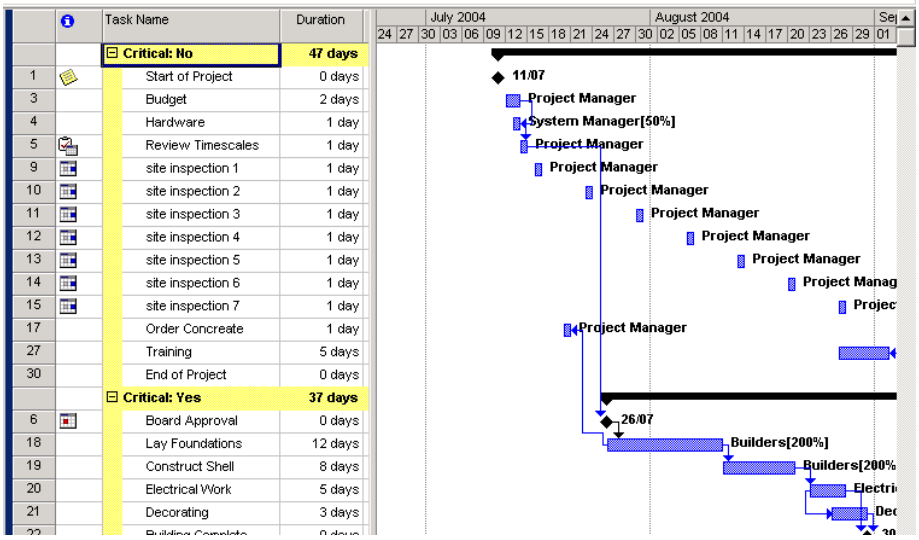


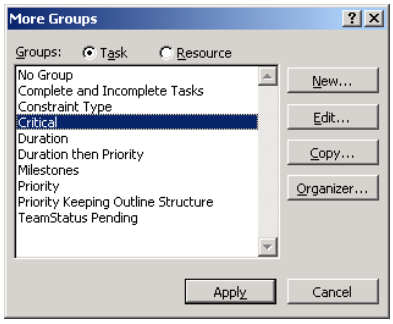
Figure 8

A subtotal is created for all numeric fields; this can be seen above alongside the group names, such as Critical: 47 Days.

To create a group

Menu

Project / Group By / more groups



Copy existing Group

An existing group can be copied and changes made to produce a new group.

Change between Task or Resource group.

Select the group to be copied and then click on the copy button.

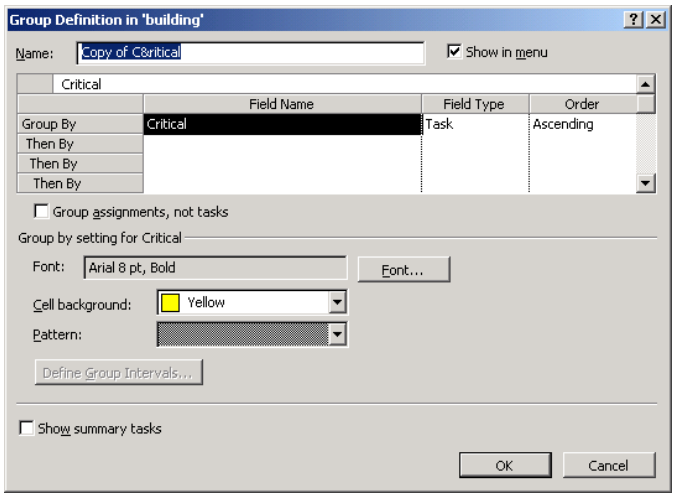


Figure 9

Make any changes and then click on Ok to save the new group.

Group Definition

- Name – enter a suitable name, if it is a copy of an existing group it will already be given the name Copy of … but this can be changed.
- Show in menu – by putting the group in the menu it will be directly available from the toolbar button or the menu.
- Group by, Then By, Then By, Then By – each row is used in turn to layer up group on group.
- Field name – set the field that will be grouped
- Field type – will either be set on Task or Resource depending upon the type of group that is being generated. This cannot be changed (unless Group Assignments are checked) and will be completed automatically once fields names are entered.

- Group assignments, not tasks – with this area checked the field type can be changed to assignment.
- Order – set to either Ascending or Descending order to control how the grouped values will be ordered on screen.
- Group by settings – work on the row to be amended and then a different Font and Cell background and pattern can be set. By default Group By will be set to yellow and the first Then By on silver, however all these colours can be changed.
- Define group intervals – If a numeric field is grouped this button will become active and different intervals for grouping can be set.
- Show summary Tasks – decide if the group will show summary tasks.

Example

A copy of the group Critical has been created and the duration field added as a second grouping in the Group Definition dialogue box.

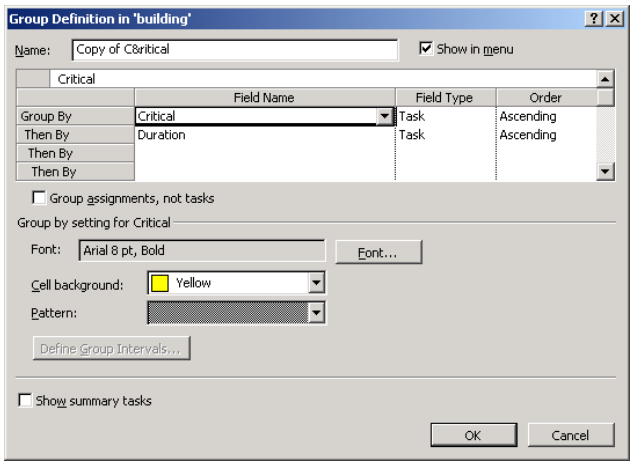
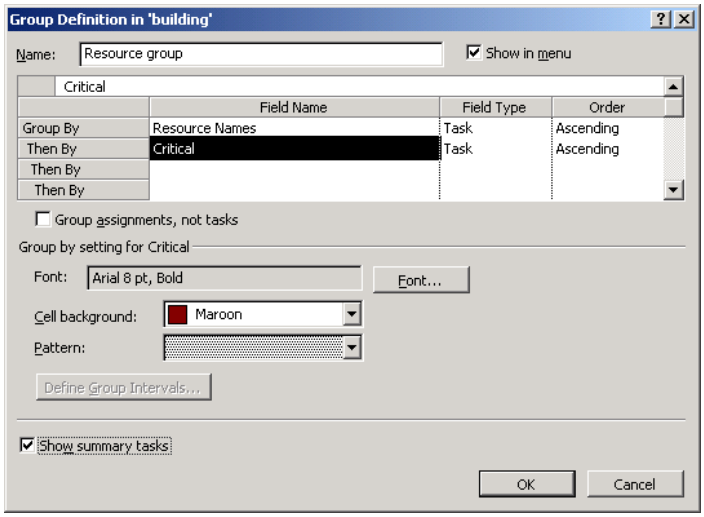


Figure 10

To create a blank group decide if a resource or task group is being created and then click on new complete the Group definition dialogue box and then click on Ok to save.

Example



A resource group has been created to enable resources to be grouped together and then in each resource group a second group will exist showing whether the task is critical.

Custom Calculated Fields

In project there are a number of custom fields that can be used to store a variety of entries. The name of the field gives an indication as to what the field can be used for.

The following are just some of the available options; Cost1-10, Date1-10, Duration1-10, Finish 1-10, Flag1-20, Number1-20, Outline Code1-10, Start1-10 and Text1-30.

Duration 1, 2 and 3, Start 1, 2 and 3 and Finish 1, 2 and 3, should not be used as these are used during pert analysis and any values that are entered into these fields will be removed.

Creating Custom Fields

To add a custom field to a table ensure that the table is displayed on screen, select the column to the right of where you want the new field to be displayed.

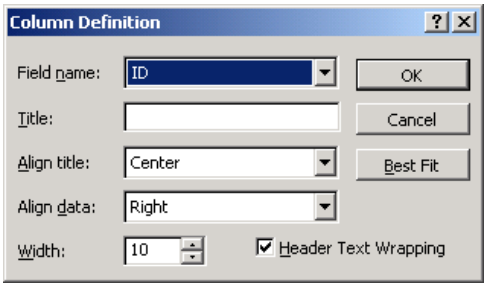
Menu

Insert/column

Right Mouse button

Right click on the field / column to the right of where you want the new field and in the menu choose insert column.

In Column Definition choose the field that you want to insert using the drop down list.



A different title can be entered to act as a display name. Choose the title and data alignment and set the width of the column (the width can always be changed using the mouse at a later date).

When you click on OK the new column or field will be on display.

This field can have suitable values typed in as required.

Example

A cost 1 field could be inserted to store Nett costs for a task.

Calculated Custom Fields

Once a custom field has been added to a table the data can be added to this field automatically using a formula.

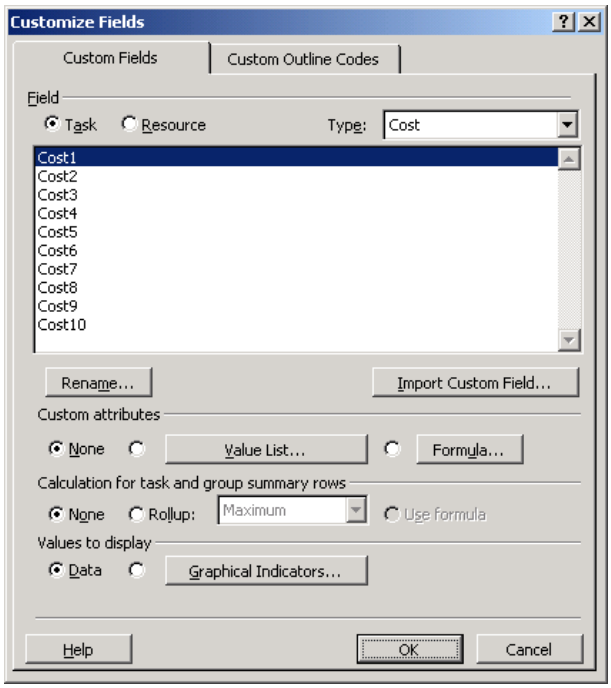
To create this formula ensure that your insertion point is somewhere within the custom field column.

Menu

Tools/ customize / fields

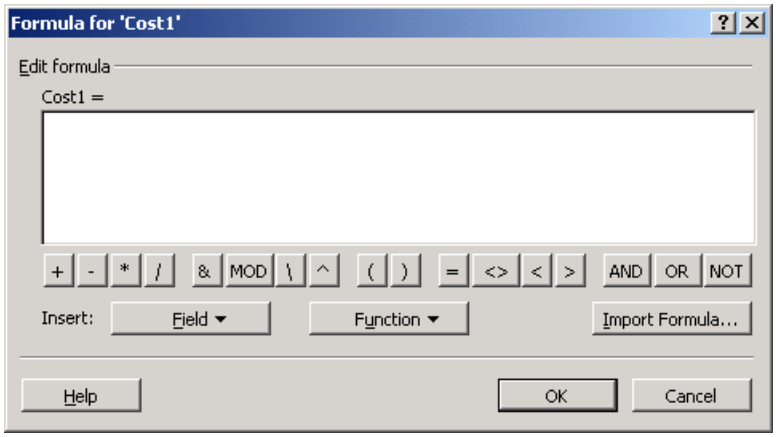
Right mouse button

Right click on field name and choose customize field.



In the Customize fields dialogue box a number of items can be built. Initially the formula option will be explored.

Ensure the field that was inserted is selected in the list and click on the Formula button.

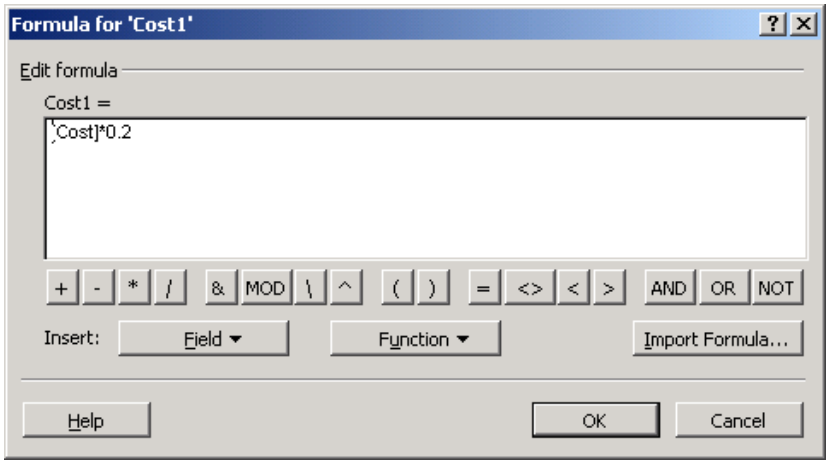


The formula is able to use existing fields and a number of functions in order to generate a value for this custom field.

Use the field button to choose a suitable field to base the formula on.

Example

The Cost 1 field is going to show a retention of 20%. The field button is used to insert the cost field and then this is multiplied (*) by 0.2. Project does not accept the use of the percentage (%) so all percentages must be entered as a decimal.



Once the formula is built Click on OK.

A message may appear on screen; this is warning that any existing values in the field Cost 1 will be replaced with the outcome of this formula.

Click Ok to return to the table.

In the table a set of values will have been created and entered into the Cost 1 Field.

Functions

An extensive list of functions exist in project to assist in the creation of more advanced calculations. Refer to the help files for a definitive list of what is available. Two useful functions to be aware of are iif and projectdatediff.

Iif – this is a logical expression enabling a condition to be tested and a true and false outcome to be displayed.

Projectdatediff – this is a function designed to give a numerical difference between two dates.

Creating a value list for a custom field

A value list is a list of entries that can be chosen using the drop down triangle. This is a good method of ensuring consistency and also speeding up data entry.

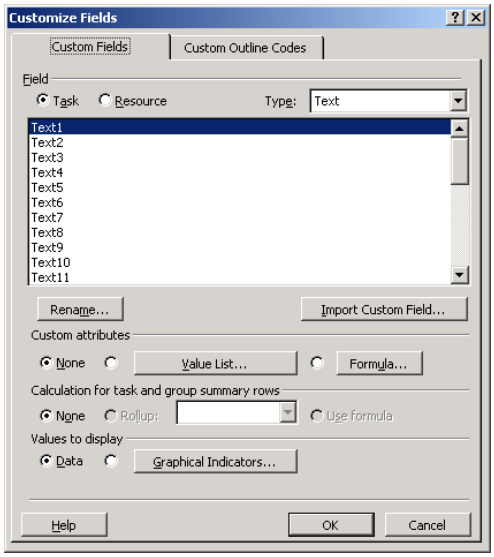
Add a custom field with a suitable data type for the value list that will be created.

Menu

Tools/ customize / fields

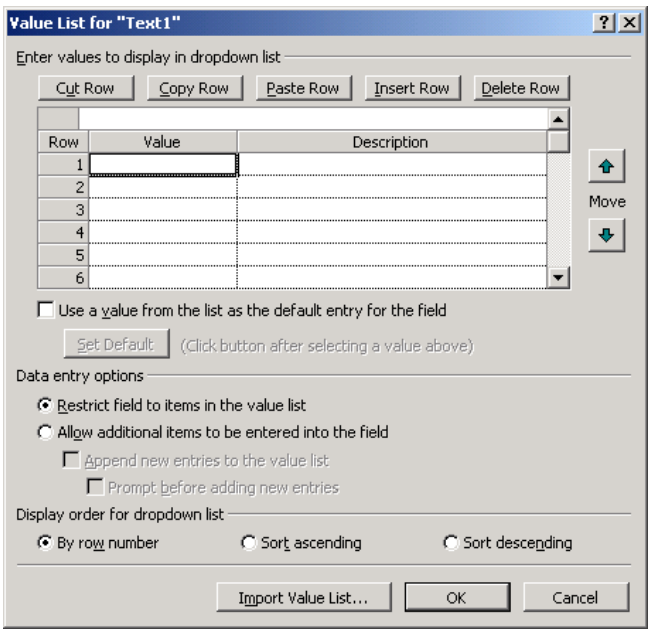
Right mouse button

Right click on field name and choose customize field.



Ensure that the field you have inserted in the table is selected and then choose the value list option in custom attributes.

Enter the values that are needed putting one on each row. If one of these values should be the default entry, ensure it is selected and then check Use a value from the list as the default entry for the field. Once this has been selected the Set Default button will be available (ensure that the appropriate value is selected before you click on this button).



Under data entry options, you can restrict the field to items in the value list – which means that only entries from the list can be entered.

Alternatively additional items can be entered into the field which can be added to the value list if this is appropriate.

When you click on Ok this list will be created for the custom field. If a default value was chosen this will be on display for all tasks, otherwise the field will be empty enabling each task to have a value chosen using the drop down triangle, which will have appeared.

Example

A custom field has been added to the cost table to show whether the costs have received financial approval. This field, Text 1 has had a title entered of Financial Approval and a value list created to populate the field with three possible values; Approved, Rejected, Pending. Pending has been set as the default value.

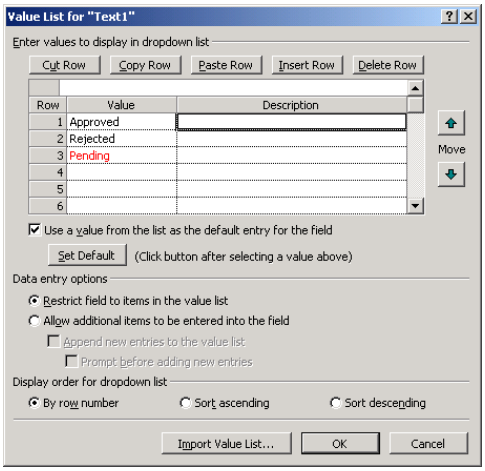


Figure 11

In the extract of the table shown below the Financial Approval Field can be seen, as Pending is the default value, this is entered in for every task that is setup. This can be changed to either Approved or Rejected by clicking into the cell and using the drop down triangle that will be shown.

	Task Name	Fixed Cost	Fixed Cost Accrual	Financial Approval
1	Start of project	£12,000.00	Prorated	Approve
2	**Define Objectives**	**£200.00**	**Prorated**	**Pending**
3	budget	£340.00	Prorated	Pending
4	Hardware	£367.00	Prorated	Rejected
5	Review Timescales	£3,456.00	Prorated	Pending
6	Board of Approval	£209.00	Prorated	Pending
7	**Building**	**£340.00**	**Prorated**	**Approved**
8	**health and safety re**	**£367.00**	**Prorated**	**Pending**
17	**Construction**	**£3,456.00**	**Prorated**	**Pending**
18	lay foundations	£209.00	Prorated	Pending
19	construct shell	£340.00	Prorated	Pending
20	electrical work	£367.00	Prorated	Pending
21	decorating	£3,456.00	Prorated	Pending
22	Building Complete	£209.00	Prorated	Pending
23	**Installation**	**£340.00**	**Prorated**	**Pending**
24	Furniture	£367.00	Prorated	Pending
25	Computer Hardware	£3,456.00	Prorated	Pending
26	**software setup**	**£209.00**	**Prorated**	**Pending**
27	Load	£340.00	Prorated	Pending
28	Test	£367.00	Prorated	Pending

Figure 12

Using Custom Indicators

Custom indicators are used to provide clear and simple way of looking at a field's value, the values themselves will not be displayed, instead an icon is on show. They can only be created for custom fields although these can be based on an existing field. For example a traffic light system could be used to show whether a task is currently running to the baseline schedule.

To create a Custom Indicator

Insert a custom field – use the data type that is appropriate to the values that will be stored in the field.

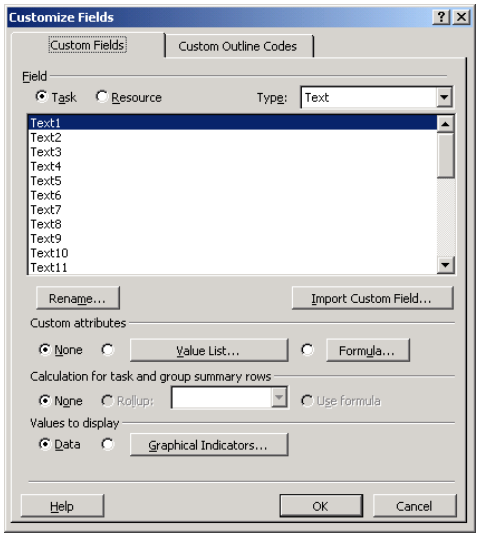
Decide how the field will be populated with data: Will the values be typed in or created using a formula or value list? Any of these options can be used when working with a graphical indicator.

Menu

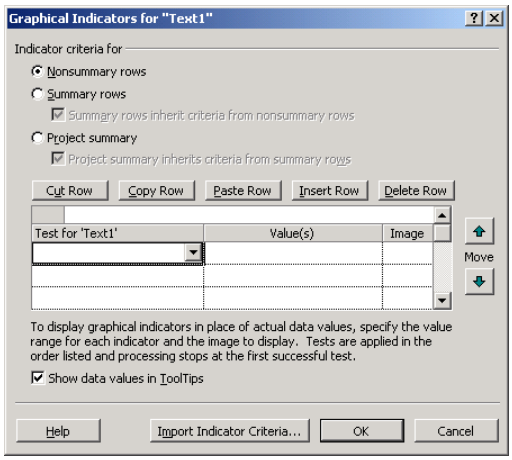
Tools/ customize/ fields

Right Mouse Button

Position over new field and right click, choose customize field.



In the customize dialogue box choose the Graphical Indicators option to build the indicators that will be displayed instead of the data in the column.



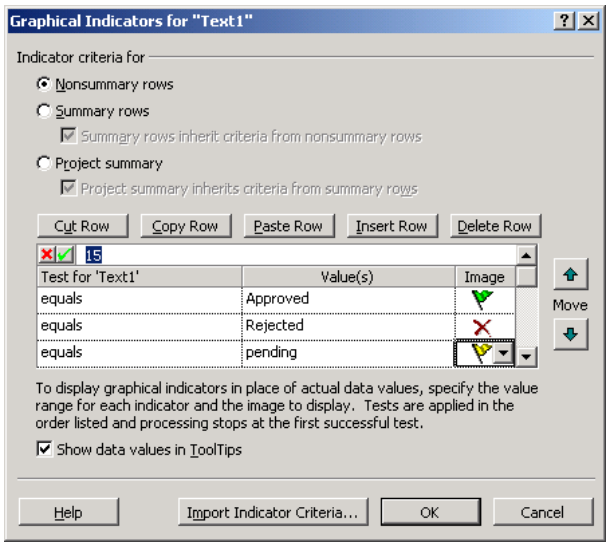
Once you click on Graphical Indicators this dialogue box to the right will display.

In this area tests for the field need to be built together with the values and then the image to be displayed.

Example

A graphical indicator has been setup to test the values in Text 1 to see whether they are showing Approved, Rejected or Pending.

The Text 1 field is populated by a value list.



Custom Tables and Views

Creating a table

Within project a number of different tables already exist enabling the user to focus attention on different combinations information at any one time. A table contains many different fields, these are displayed in columns.

To change tables

Menu

View / Table

Then choose the table to display.

Right Mouse button

Position the mouse pointer over the grey square directly above the id column, right click and choose the table to display from the menu.

The default table that is displayed is the entry table and this enables tasks to be setup and edited. Changing to the cost table gives the task name, fixed and total cost information amongst other things.

To ensure that a user is able to focus on the information that is important it may be necessary to modify an existing table or create a new table. A table could also be created to show custom fields that have been created.

Existing tables

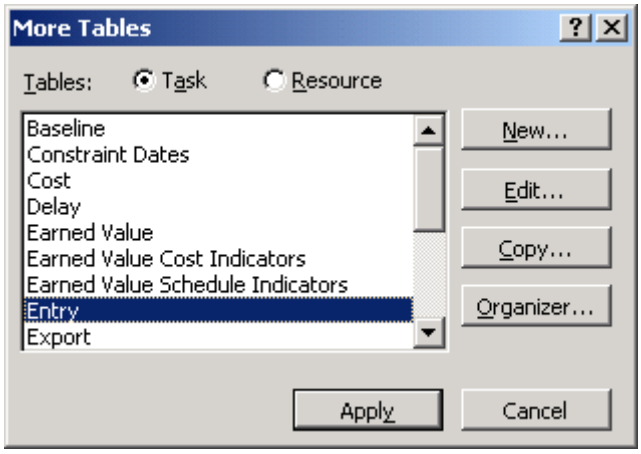
All existing tables are defined to be Task and / or Resource. This will control which views they can be used in conjunction with. Refer to View section for a summary of Task and Resource Views.

Table Name	Task	Resource
Baseline	✓	
Constraint Dates	✓	
Cost	✓	✓
Delay	✓	
Earned Value	✓	✓
Entry	✓	✓
Export	✓	✓
Hyperlink	✓	✓
PA Expected Case	✓	
PA Optimistic Case	✓	
PA Pert Entry	✓	
Roll Up Table	✓	
Schedule	✓	
Summary	✓	✓
Tracking	✓	
Usage	✓	
Variance	✓	
Work	✓	✓
Entry – Material Resources		✓
Entry – Work Resources		✓

To Modify or Copy an Existing Table

Menu

View/ Tables / More Tables



In this area a table can be edited or copied. Select a table and click on Edit, the table can then be renamed and properties modified.

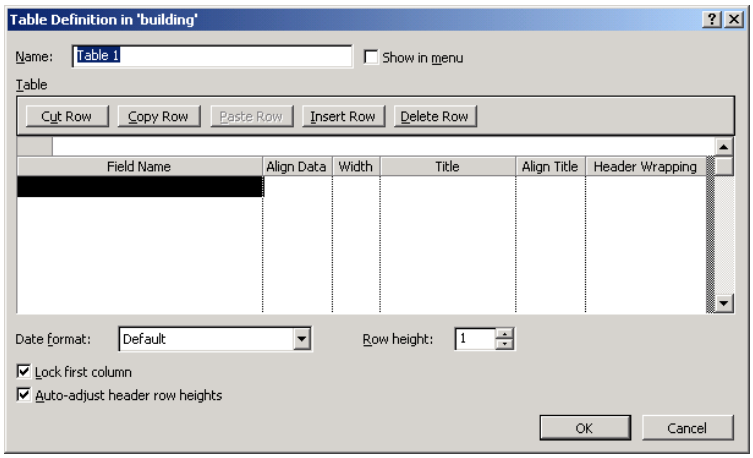
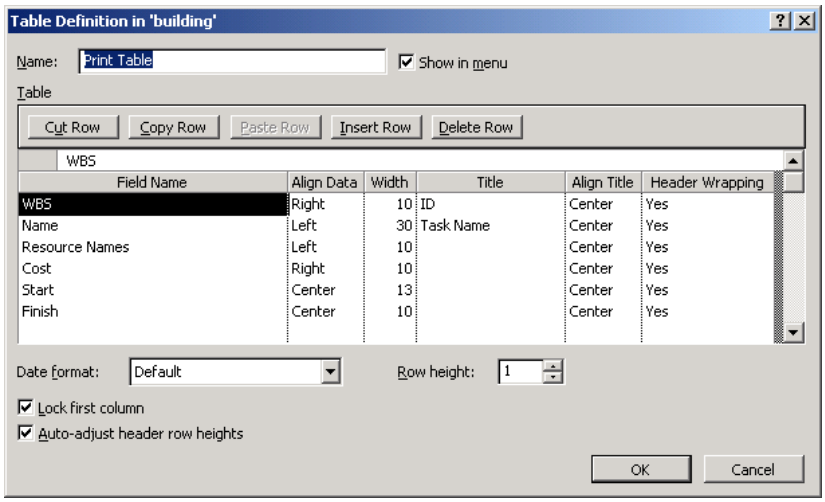


Table Definition

- Name – enter a suitable name for the table
- Show in menu – if this option is checked the table can be run from the menu or right click shortcut
- Field Name – choose the field name to display in the table
- Align Data – Decide how the data in the field will be aligned
- Width – enter number of characters to display – this can be widened within the table
- Title – a more appropriate title can be entered to be displayed instead of the field name. If this is left empty the field name will be used.
- Align Title – generally set to be centred but titles alignment can be modified
- Header Wrap – this will enable the header to be put on two rows if the column is not wide enough to display the full title
- Date Format – If date columns are chosen as part of the table then an appropriate format can be chosen.
- Row Height – by default this is 1 but can be increased which will make rows deeper and this will also affect views on display with the table.
- Lock First Column – the first column will always be on display if this option is checked; it will be displayed on a grey background.
- Auto-adjust header row heights – if the title is wrapped onto two lines this option will ensure that the row height is adjusted automatically.

Example



Here a table has been created that gives a good overview of information ready for printing.

The Title area has been used to replace the field name with something more suitable in the table.

Creating a view

A view displays a set of project information in a format that is clear to understand. Project gives the user a number of views which can be used to focus on different information, however these views may not be complete what is needed and other views may need to be generated to enable more effective use of project. Data entered in a view is added to one core set of data and is available for all suitable views.

Three types of view exist; Task views, resource views and assignment views.

Existing Views

View Name	Task View	Resource View	Assignment Views
Bar Rollup	✓		
Detail Gantt	✓		
Gantt	✓		
Levelling Gantt	✓		
Milestone Date Rollup	✓		
Milestone Rollup	✓		
PA Expected Gantt	✓		
PA Optimistic Gantt	✓		
PA Pert Entry	✓		
PA Pessimistic Gantt	✓		
Resource Allocation		✓	
Resource Sheet		✓	
Resource Usage		✓	✓
Task Entry	✓		
Task Sheet	✓		
Task Usage	✓		✓
Tracking Gantt	✓		

To change views

Menu

View/ Gantt chart, calendar, network diagram etc… can be selected.

View Bar

Alternatively the View bar can be used, if this is not on show use the menu view/view bar.

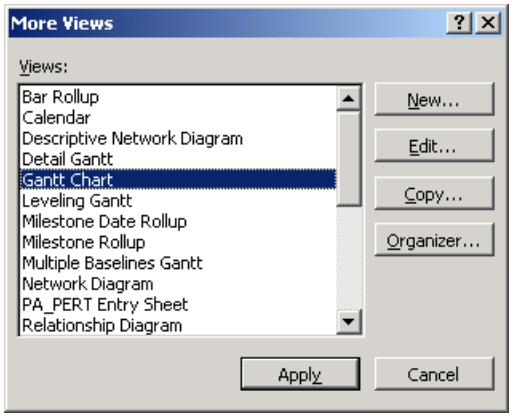


Figure 13

To create a new view click on the New button. Select whether a New Single view or combination view is being created.

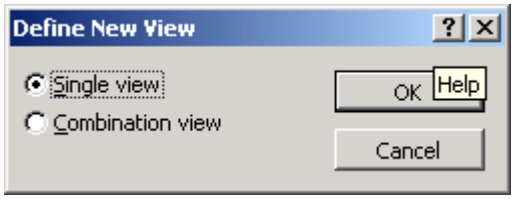


Figure 14

Single View Options

- Name – enables a name to be defined for the new view
- Screen – choose the view that will be displayed as part of the new view
- Table – choose which table will be on the left of the new view
- Group – either choose which group will be applied to the view or set this to no group. It cannot be left empty.
- Filter – choose a filter to apply to the new view, if no view is needed all task should be chosen.
- Highlight Filter – if this option is checked then rather than data being hidden by the filter the data matching the criteria will be highlighted in a different font colour.
- Show in menu – provides a shortcut in the menu and view bar to display this new view.

Example

A view has been created with the cost table on show and data grouped on the basis of whether it is critical or not.

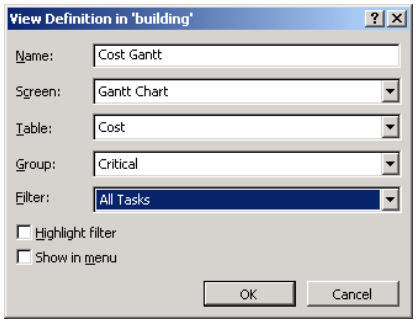


Figure 15

Combination Views

If a combination view is chosen then a view for the top and bottom of the screen can be chosen.

The view is named and then views selected for the top and bottom of the screen, again the option to show the view in the menu is possible.

Example

Here a view has been setup for identifying over allocation problems with the resource graph and Gantt chart being displayed together.

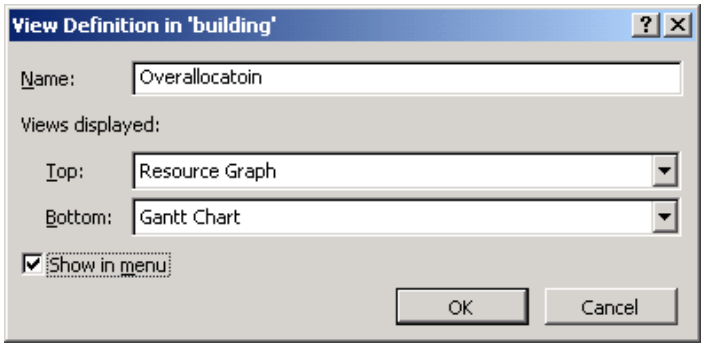


Figure 16

The view that is placed in the top of the combination will control the information that can be displayed in the bottom of the form.

i.e. As a different resources are selected on the top area of the form the Gantt chart will display the tasks that resources is working on.

Forms

A form is a data entry option that resembles a dialog box; it can be used to enter information about task and resources in a schedule. From the existing forms the most common are the Task and Resource Information. When these do not contain the detail required a custom form can be built.

Existing forms

Project has a number of existing forms (listed below).

Menu

Tools/Customize /Forms

Choose the form to display

Toolbar

View/Toolbars/Custom Forms

Figure 17

From the displayed toolbar forms can be displayed or using the final icon the custom forms dialog box displayed.

Form Title	Use	Form Type
Cost Tracking	Enables costs to be tracked once a project is running and compared to baseline costs.	Task
Earned Value	Shows calculations of cost variances for tasks using planned, scheduled and actual durations.	Task
Entry	Enables task information such as name, duration and dates to be edited.	Task
Pert Entry	Provides another way of entering the three durations of expected, optimistic and pessimistic required for pert analysis.	Task
Schedule Tracking	Enables tracking information to be entered and compared to planned dates and duration.	Task
Task Relationships	Shows predecessors and successors for the selected task.	Task
Tracking	This is the form displayed when updated tasks is chosen on the tracking toolbar. Enables actual start and finish date, actual duration, remaining duration and percentage complete to be entered for selected tasks.	Task
Work Tracking	Tracks duration and work tracking fields	Task
Cost Tracking	Displays total cost for a resource.	Resource
Entry	Shows resource information such as name, rates and maximum available units.	Resource
Summary	Reports overall costs and work including variances.	Resource
Work Tracking	Enables percentage of work complete and compares to the baseline figures.	Resource

Creating a form

A new form can be created by copying an existing form and editing it to meet current requirements; alternatively a form can be setup using a blank form.

Menu

Tools/Customize/Forms

Toolbar

View/Toolbars/Custom Forms

Use the final icon on the toolbar to display the customize form dialog box.

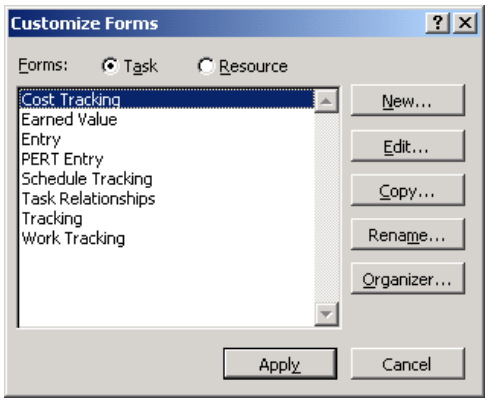


Figure 18

Copying an Existing Form

Select a form to act as the basis for the new form, click on Copy.

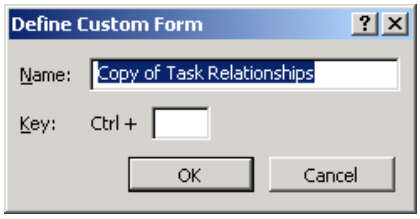


Figure 19

Change the name from Copy of “selected form”, a shortcut key to show the form can be setup (refer to appendix A for a list of available shortcut keys). Click on Ok to move onto the design environment.

In the Custom Form Editor the form will be displayed. Available options are listed below.

Menu	Option	Use
File	Save	Saves any changes made
File	Exit	Closes the Custom Form Editor and returns to the normal project environment
Edit	Information	Enables the form size to be set. This can also be done using the borders of the form, using the mouse the borders can be dragged outwards or inwards.
Edit	Repeat last Move	Repeats last action.
Edit	Select Dialog	Selects the form – this can also be achieved by clicking on the border of the form.
Item	Text	Adds a text box to the form, to edit this text double click on the object. To move the text box, ensure that it has the dashed line around the outside of the object, then move the mouse pointer over the top and then hold down the left button and drag the object to the desired position.
Item	Group Box	Adds a dashed area to the form which enables text and fields to be grouped together.
Item	Button	This enables OK and Cancel to be added to the form, or if already on the form the chosen button will be activated enabling the button to be edited – for example it could be resized
Item	Field	Enables fields to be added to the form, when this option is chosen the dialog box item information is displayed enabling the correct field to be chosen. The Field can be set to Show As Static Text, which will make the field display as an information box rather than an editable object.

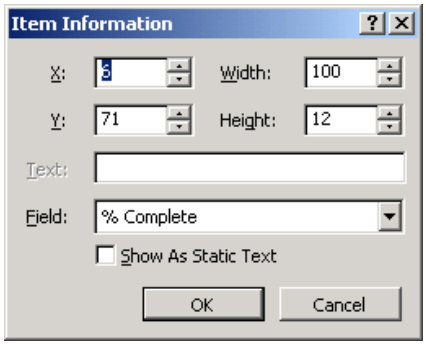


Figure 20

Example

The Tasks relationship Form has been copied and renamed to Relationships.

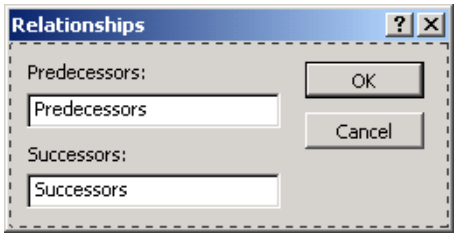


Figure 21

This form has been resized to enable additional fields to be added and reordered. The fields Name and Type added with the labels Task Name and Relationship Type. The Name field has been set as Static text so that the field can be reviewed but not edited.

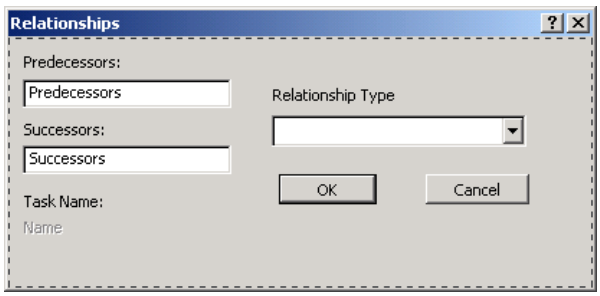


Figure 22

When this form is displayed the following information can be reviewed and set.

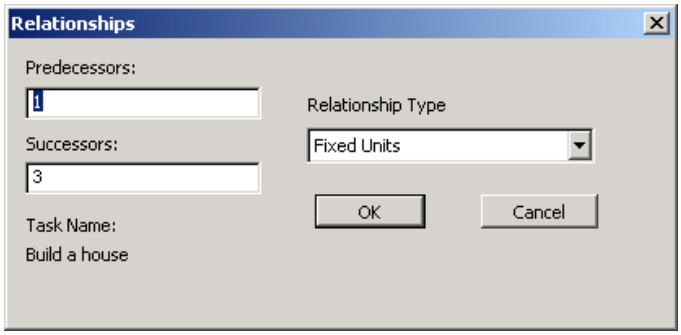


Figure 23

Creating a form using a blank

If no suitable forms exist to provide a starting point, a custom form can be created from a blank.

Menu

Tools/Customize/Forms

Toolbar

Use the final icon on the Custom Forms Toolbar

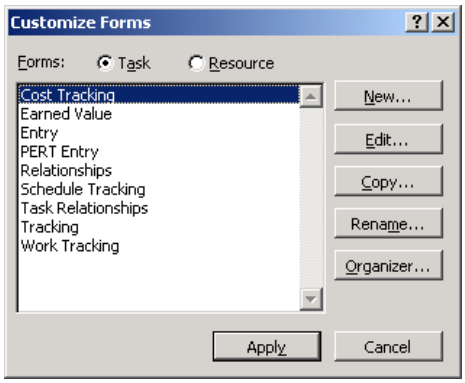


Figure 24

Choose whether a Task or Resource form is being generated, then click on New.

Enter a form name and a shortcut key (this can be left empty). The Shortcut key must be unassigned.

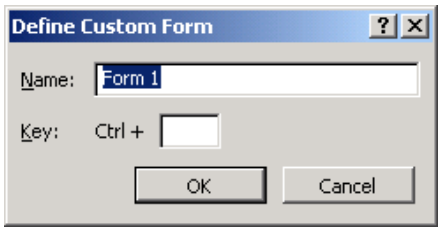


Figure 25

The form is displayed and an Ok and Cancel button is all that will exist. Using the options described in modifying forms, fields can be added, labels and groups as required.

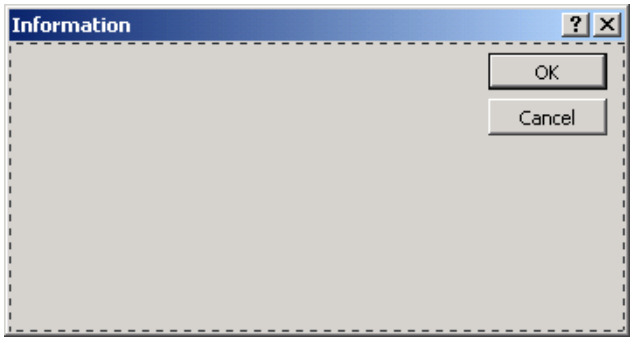


Figure 26

Example

A new form has been created an a group added to which three fields have been added showing name, duration and constraint type – all three fields have been set as static text.

The fields fixed cost and fixed cost accrual have been added with labels enabling costs to be added to tasks.

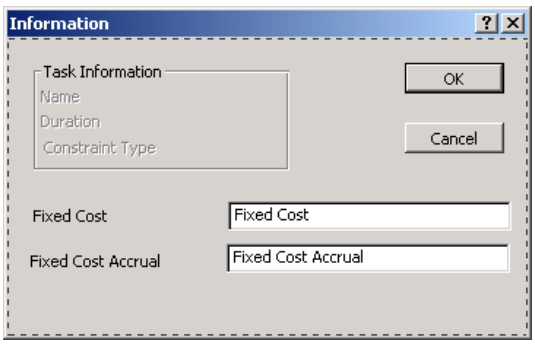


Figure 27

Add a form icon to a toolbar

Once a form has been created the form will only be able to be run from the customize forms dialog or the shortcut key that is setup. However is will be a good timesaver to add a button to the custom forms toolbar.

Menu

View/Toolbars/Customize

Right Click

Right click on existing toolbar and choose customize.

Change to the Commands Tab and move down the left side of the form until you see the form section. Click on the form option and then on the right a list of forms is displayed. Select the form that a button is being created form and drag the button onto an existing toolbar.

Creating a report

Project contains a number of reports, providing the user with the ability to create rapid printouts of summarised information. In essence there are four types of report; task lists, resource lists, cross tabs and calendar types. Apart from the calendar type which has no predefined examples there are examples of the other three types which can be copied or edited.

Viewing existing reports

To access reports View / Reports and then from the dialogue box pick the category of report that you wish to generate.

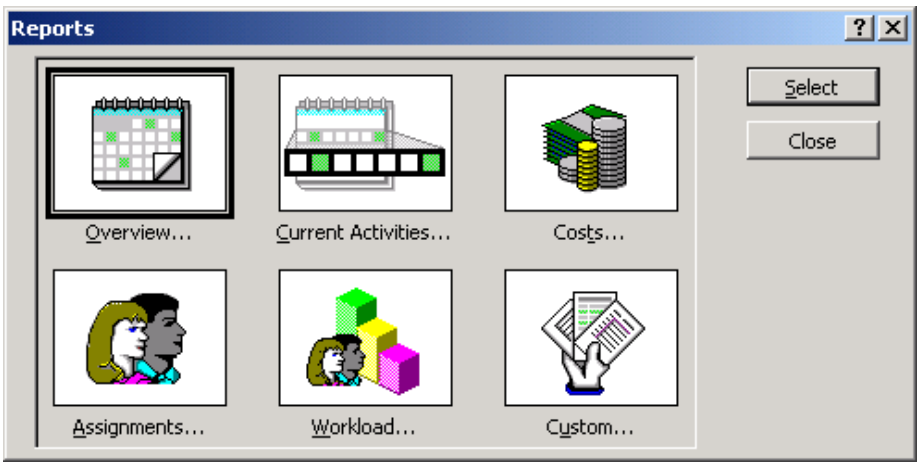


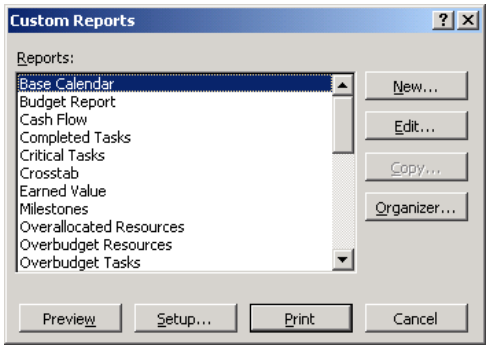
Figure 28

Creating a report

Menu

View/Reports/Custom

Click on the custom icon and then clicking on select or double click on custom.



In the custom reports dialogue box existing reports are visible enabling them to be edited or used as a basis for a new report.

Select a report and click on Copy.

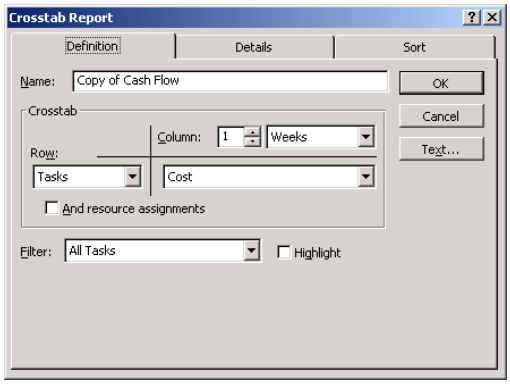


Figure 29

Four types of report exist and each one has a separate group of options. Above is a picture of a copy of a Cross tab Report. The name can be changed and then existing options amended. The report will be run from the custom section of the report dialog box.

Example

The Cash flow report has been copied and then amended to make the report a monthly cash flow by changing the weeks to months.

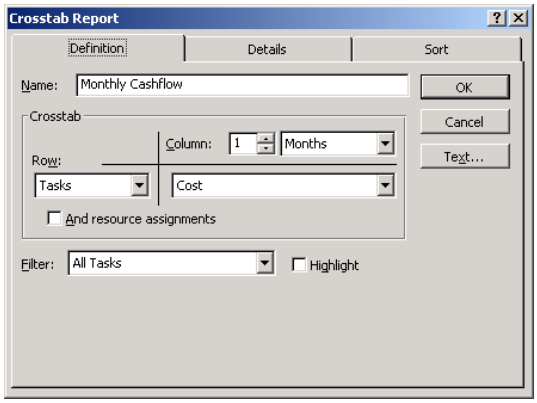


Figure 30

If there are no reports that are suitable to be amended a new report can be setup from scratch.

Menu

View/Reports/Custom

In the custom section click on New

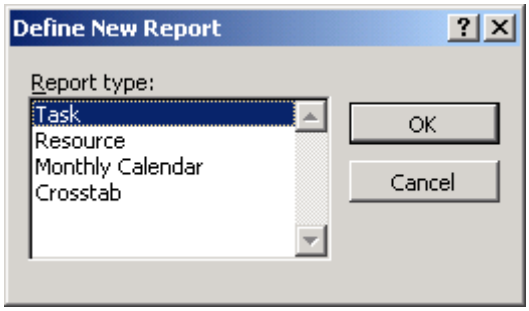


Figure 31

When a new report is being generated the report type must be defined before the report can actually be generated.

Task or Resource reports

Both task and resource reports are created in the same way decide which type of report needs to be generated.

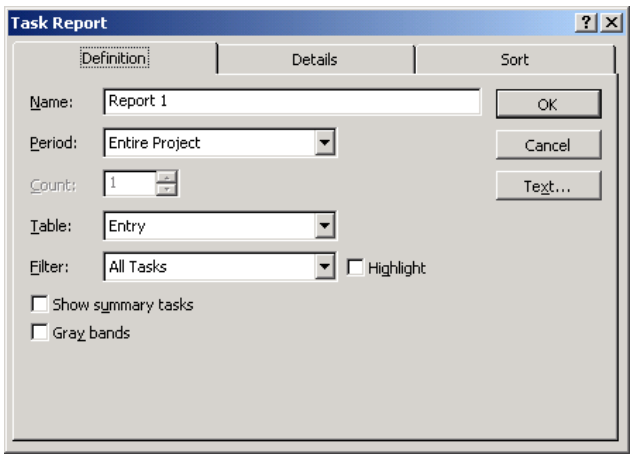


Figure 32

Name the report and decide what period of time the report will be generated for.

Pick the table that will be used to generate the report and decide what filter if any to apply.

If the table contains fields that you don't want to show on the report you can either hide/delete the field from the table or build a customised table which is a copy of the table without the field that you don't what to include in the report. If you have built a customised table this can be selected to base the report on.

On the details tab objects can be chosen for printing including settings relating to notes, predecessor and successors. The detail section will also enable gridlines to be added to the report.

On the sorting tab the data in the report can be sorted by up to three different fields and the outline structure overridden if required. By default all data will be sorted by the id field.

Example

A report has been created to use the information in the customised table called Print Table.

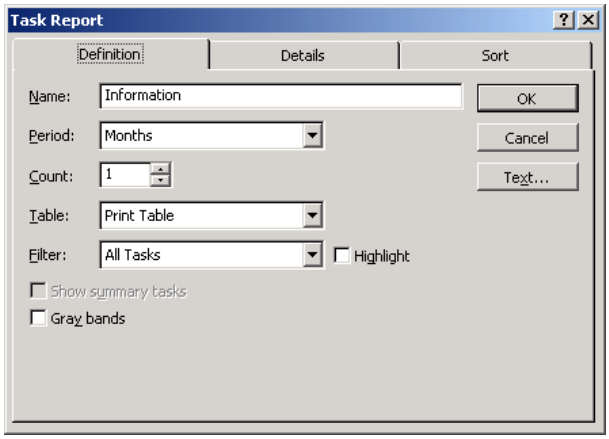


Figure 33

On the sort tab the data has been sorted by cost into descending order on the third tab.

An image of the report created is shown below.

The period setting has cause the data to be structured by month, with costs being sorted in descending order.

ID	Task Name	Resource	Cost	Start	Finish
September 2004					
	Review Timescales	Project Manager	£300.00	Wed 29/09/04	Wed 29/09/04
	Hardware		£150.00	Tue 28/09/04	Tue 28/09/04
J2.*	budget	Project Manager	£100.00	Mon 27/09/04	Mon 27/09/04
J1	Start of project		£0.00	Mon 27/09/04	Mon 27/09/04
October 2004					
	lay foundations		£100.00	Wed 06/10/04	Thu 21/10/04
J3	Board of Approval		£45.00	Wed 06/10/04	Wed 06/10/04
	construct shell		£11.00	Wed 20/10/04	Fri 29/10/04
November 2004					
	Test	Project Manager	£5,097.00	Fri 19/11/04	Mon 22/11/04
	Computer Hardware		£980.00	Wed 10/11/04	Thu 11/11/04
J6.*	Furniture		£800.00	Tue 09/11/04	Tue 09/11/04
J5	Building Complete		£554.00	Fri 05/11/04	Fri 05/11/04
J7.*	Load		£232.00	Fri 12/11/04	Fri 19/11/04
	electrical work		£23.00	Mon 01/11/04	Fri 05/11/04
	decorating		£0.00	Tue 02/11/04	Thu 04/11/04
J8	End of project		£0.00	Mon 22/11/04	Mon 22/11/04

Figure 34

Monthly calendar

This report type exists for users who what to create a report showing task information in a calendar format. There are no existing calendar reports created by defaults so they must be created from scratch.

Once new has been chosen in the customise reports dialogue box, choose the monthly calendar in Define New Report.

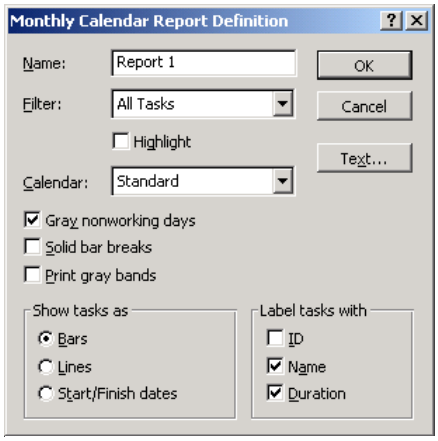


Figure 35

Name the report and then decide if a filter will be applied to the report. Any base or resource calendars can be chosen for displaying the working and non-working days.

To ensure that non-working days are clearly visible keep the check in grey nonworking days.

Example

Here a calendar is created that will show just the critical tasks in the format of start and finish dates. The output is very similar to the calendar view but does give a few different setting than this existing view (these are primarily related to the type of filters that can be used).

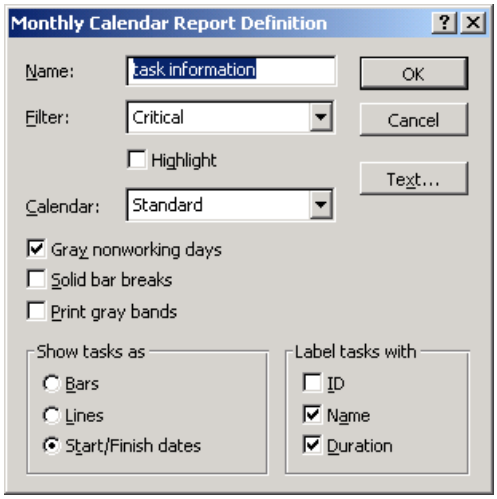


Figure 36

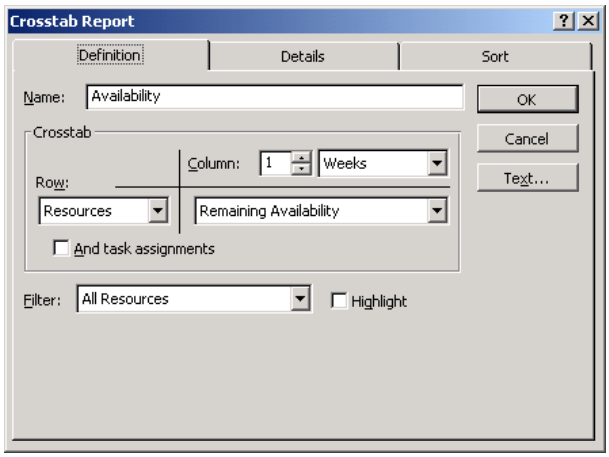
Cross Tab Reports

Cross Tab reports show cost amounts or work hours by task or resources in a grid format based on time period. There are only a limited number of options to set to create a useful summary report.

From the custom section of Reports choose New and then choose Cross Tab, modify the setting to match the information that needs to be displayed.

Example

A Cross Tab report has been created to show availability of resources across weeks. The data has been sorted by Standard rate.



	11/10	18/10	25/10	01/11	Total
System Manager	40 hrs	40 hrs	16 hrs	8 hrs	104 hrs
Project Manager	40 hrs		8 hrs	40 hrs	88 hrs
Total	80 hrs	40 hrs	24 hrs	48 hrs	192 hrs

Figure 37

Pert Analysis

A common problem with projects is the under estimation of task duration. Development of a solid and accurate estimation of task duration can be a complex and time consuming activity. In Project the calculation of durations using weighted averages of a best-case, worst case and most likely case durations is designed to help in this process. It enables the three figures to be displayed in a Gantt chart views and the weighting to be recalculated as required.

Using PERT to estimate Task Durations

To use the Pert Analysis tool show the Pert Analysis toolbar

Toolbar

View/Toolbars/Pert Analysis

Figure 38

Use the final icon on the above toolbar to enter the Pert Entry sheet – this the fastest way to setup all three durations for all tasks.

The Optimistic, Expected and Pessimistic durations will be stored in the custom fields called Duration 1, Duration 2 and Duration 3. It is important to check that these fields are not already in use in the current project as otherwise these values will be lost. Also affected and used in the process are the Start 1 and Finish1, Start 2 and Finish 2 and the Start 3 and Finish 3.

For each task a decision will have to be made as to what value will be entered for each of these three durations, they do not need to follow any pattern and can be altered at any point if it is felt that other values would be more valid.

Once have entered in all three durations a weighting will be entered using the set pert weights icon on the toolbar. These weights must add up to 6 overall across the three sections.

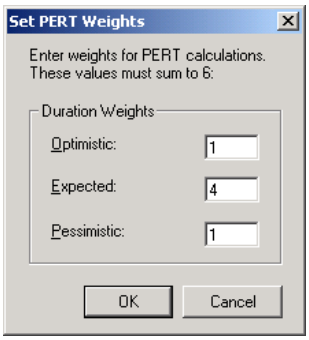


Figure 39

The default weighting is shown in the diagram above.

Once the weighting has been added the duration can be calculated. Click on the icon  (calculate pert) a warning message is displayed; it advises that certain fields will be over written by the process.

In the duration column the calculated duration will now be displayed.

The first three icons on the Pert Analysis toolbar allow each of the three Gantt charts to be view and these could be printed off if required. Until the duration has been calculated these views will not be available. These views could also be run from the menu.

Menu

View/More Views

Then choose the view from the dialog box.

Analyse Project Data using Excel

When taking project data to other applications a map is used or created. This map enables the fields being exported to be defined and spreadsheets column name to be created. Within project there are 11 predefined import/export maps.

Existing Maps

Map Name	Use
Who Does What	Saves an HTML table which lists resources and tasks assignment information.
Compare Baselines	Exports a table that lists all tasks with scheduled and baseline values.
Cost Data By Task	Exports a table that lists task cost.
Default Task Information	Exports and Imports basic task fields in the task entry table.
Earned Value Information	Exports the task earned value fields.
Export to HTML using Standard Template	Exports basic task, resource and assignment values to an HTML page.
Resource Export Table	Exports all fields in the predefined resource export table.
Task Export Table	Exports all fields in the predefined task export table.
Task and resource pivot table	Used to create excel pivot tables for task and resources
Task list with embedded assignment rows	Export and HTML table of tasks and assigned resources producing a clear web page.
Top Level Tasks	Used to export a table with data for outline Level one – Milestones, summary task, etc…

Creating custom export maps

Open the project from which you want to export data

Menu

File/Save As

Select the directory location in the save in list box

Change the save as type to be Microsoft Excel workbook (*.xls)

Add in a suitable file name.

Click Save.

The map wizard will now launch, Figures 37- 45 shows the stages of the process that will go through, less stages may be displayed depending upon choices made in the dialog box shown in Figure 40.

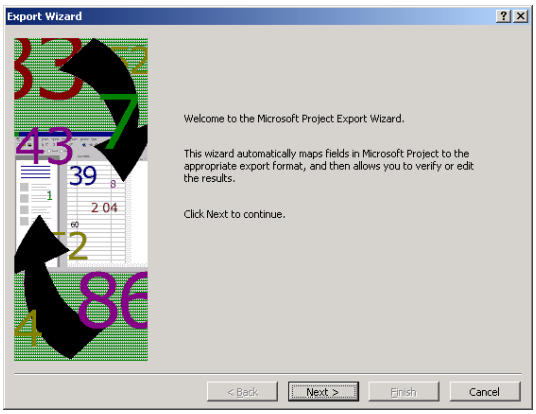


Figure 40

Once the wizard has launched and the second stage is reached a choice is made between using an existing excel template or taking out selected data. If the first option is chosen default fields from the project are taken to the excel file that the process is creating.

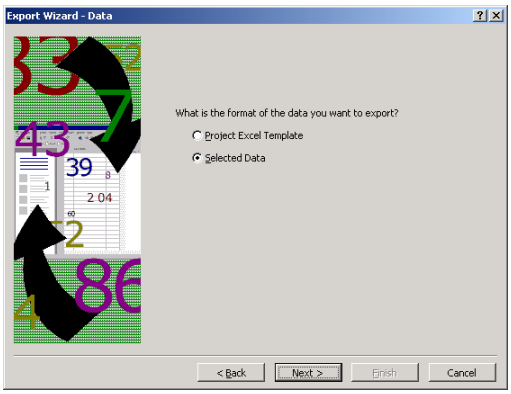


Figure 41

If Select Data is chosen the wizard continues

To generate a new map choose the first option – this will enable the user to decide which fields are exported and how they will be labelled in excel.

Choosing an existing map will enable the user to go and select which map to be used

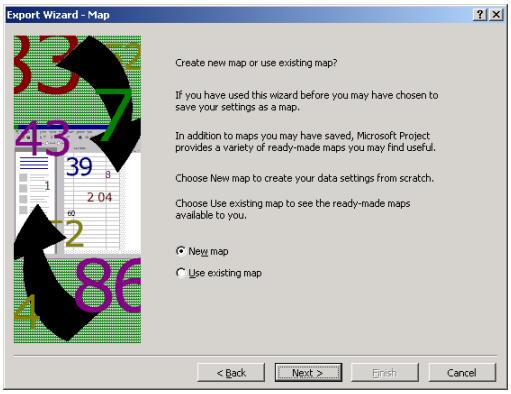


Figure 42

Select the types of data that will be exported from Tasks, Resources or Assignments, at least one of these must be choose.

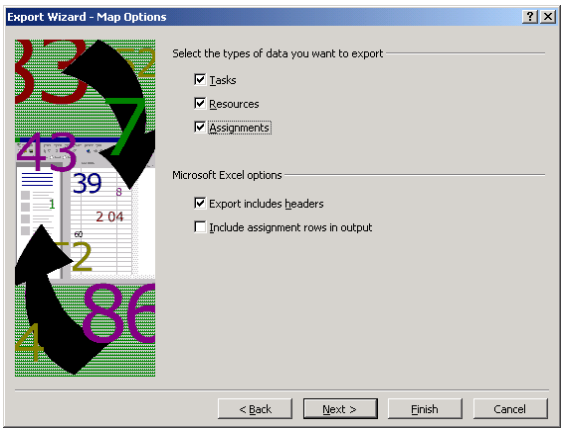


Figure 43

Now the Map Data steps will be displayed, shown below are three of these dialog boxes, one for Tasks, Resources and Assignment. If only one type of data is chosen only one dialog will be displayed.

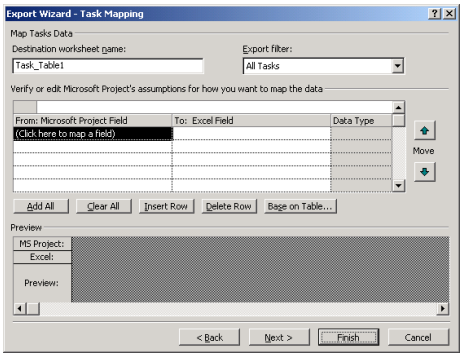


Figure 44

Each type of data is taken to a different sheet within the excel file.

The fields can be chosen in turn and then the column label amended for excel.

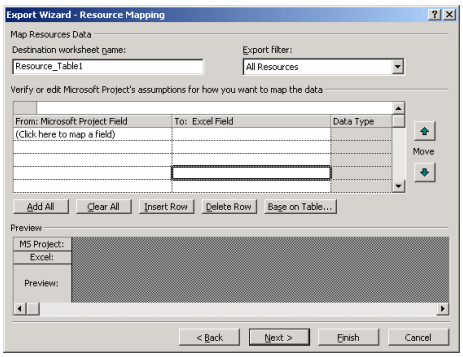


Figure 45

Assignment Mapping enables Task information to be displayed together with Resource information and cost information on the basis of what tasks have which resources assigned etc...

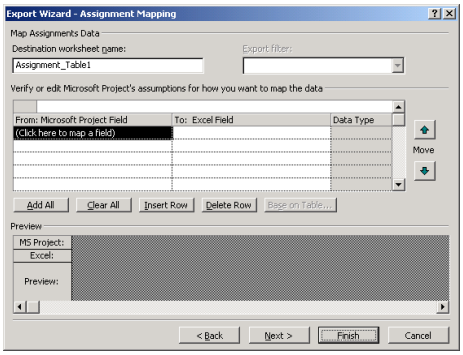


Figure 46

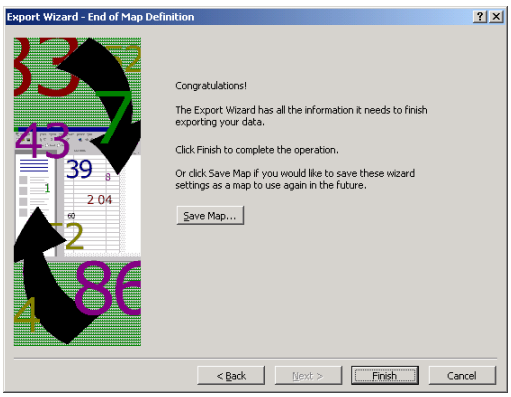


Figure 47

Now the process is complete there is an opportunity to Save the Map enabling these setting to be used again without them having to be reselected.

Otherwise the process can be finished if this is a one time export.

If a map is saved it is saved to the Global.MPT file therefore it is available to all projects on the computer where it was created.

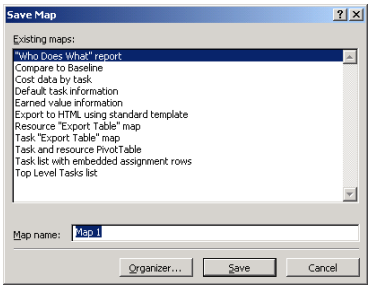


Figure 48

Example

A map was generated to export cost information to an excel file to enable cost variation to be charted. Below is a diagram of the fields that were exported.

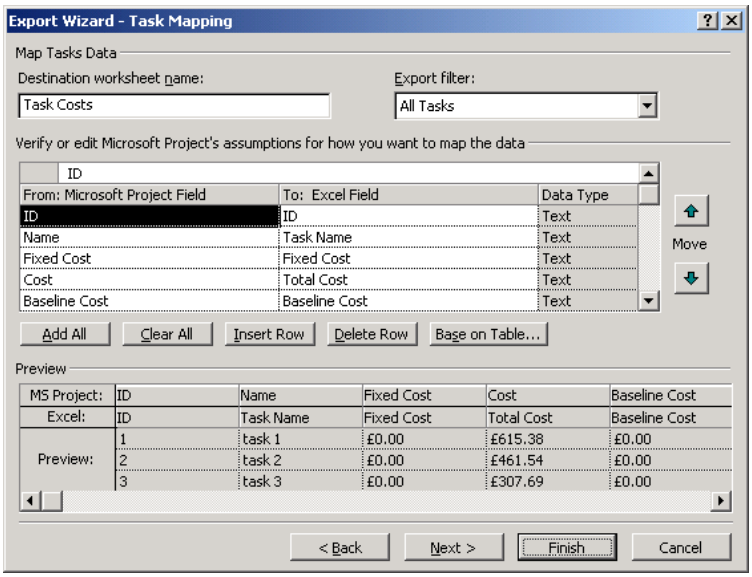


Figure 49

Creating Pivot tables from project data

This feature is another variant of exporting information to Excel.

Menu

File/Save As

Choose the location where the new files will be saved

Change the file type to Microsoft Excel Pivot Table and then enter in a file name.

The Export Wizard will then launch with slight variations to the standard export map wizard.

Step three changes slightly in appearance; this step still enables the user to select what type of data is to be exported, picking between Tasks, Resources and Assignments.

For every type of data that is select the map will create two sheets within excel. One will contain the core data and one will be the pivot table.

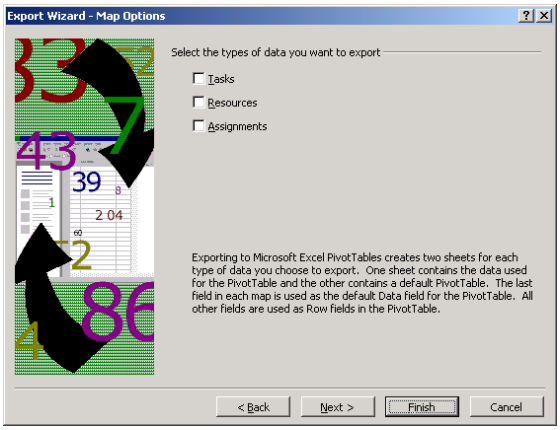


Figure 50

Once you have chosen the data type to export the next step fields are mapped, with the user choosing the fields to export from project and setting the column names that they will take in excel.

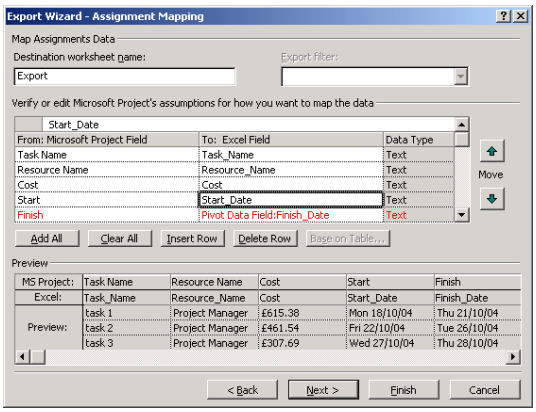


Figure 51

All other steps of the wizard are the same as the normal map wizard.

Once the wizard has been completed the excel file can be opened and the pivot table reviewed. The pivot table can be amended as required and behaves like an excel pivot table apart from it not having a page

area initially on show however fields can be added into this area using the Pivot table field list options.

	A	B	C	D	E
1	Sum of Cost	Resource Name			
2	Task Name	Project Manager	System Manager	Grand Total	
3	task 4	0	942.3076923	942.3076923	
4	task 1	615.3846154	0	615.3846154	
5	task 2	461.5384615	0	461.5384615	
6	task 3	307.6923077	0	307.6923077	
7	Grand Total	1384.615385	942.3076923	2326.923077	
8					

Figure 52

Example

A pivot table map was generated to export assignment information, the fields chosen were task name, resource name, resource group and Cost.

Macro Features

A macro is generated when users want to automate work, macros are created in Visual Basic for Applications (VBA) and this code can be generated either by recording a macro or manually entering the instructions in VBA.

The use of macros can speed up frequently performed tasks or enable delegation of work by enabling other users to perform actions that they were unaware of.

Already within Project a number of Macros exist which can be run to amend elements of the project.

Existing Macros

Name	Description
Format_Duration	This enables durations to be standardised into one unit of time. When run a drop down list is displayed to enable the user to chose between days, weeks, hours etc.
ResMgnt_TaskEntry	This macro will split the screen and brings up a form at the bottom of the screen ready to setup tasks and assign resources.
Rollup_Formatting	Before this macro is run any task that is to be rolled up to the Summary bar must have the setting Roll up Gantt bar to summary turned on in Task Information – on the General tab. Then when this macro is run the bars that are marked will be rolled up to take the place of the summary bar. Once the macro has been run the setting remains on, so if tasks have the Roll up Gantt Bar to Summary checked they will be copied up to the Summary bar. The Summary bar itself will disappear.
Toggle_Read_Only	This makes the file read only and a prompt will come up on screen prompting changes to be saved before it is made read only.
Update_File	This updates a read only file to the most up to date saved version.

Recording a macro

Recording a macro is one way of generating VBA code that will automate tasks. Recorded macros work well for simple tasks such as changing view and printing information, but for more complex tasks they may be unsuitable and manual coding may be necessary.

When using recorded macros items such as blank or additional tasks, resources added or deleted or project files needing to be open can cause the process to stop or fail. As these actions are frequently performed this needs to be considered when using recorded macros. Writing in code can resolve many of these issues.

Before a macro is recorded the actions that it will automate should be planned to ensure that the end result that are achieved are as expected. For example, if the macro is going to display a custom table or form then this element must be created before the macro is generated.

Menu

Tools/macro / Record new macro

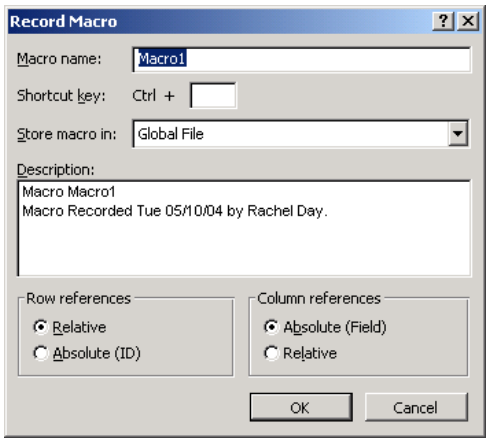


Figure 53

Enter a name for the macro, this needs to start with a letter and cannot contain any spaces, however an _ (underscore) can be used as an alternative.

NB an upper case letter is often used instead of a space, for example ChangeView

The macro can be run from a shortcut key, run from the Macro option in the menu or run from a toolbar. Refer to the appendix for a list of key assignments in use already.

To run macro from a shortcut key enter the letter that will be used in conjunction with Ctrl. The chosen letter must be unassigned otherwise an error will be displayed when you click on OK.

Decide where the macro will be stored – the global file is selected by default but this could be changed to this project. By storing the macro on the global file it will be available to all projects on used on the computer where the macro was created.

Click on OK to start the recorder.

The computer is now recording all actions and converting them into VBA code.

Run through the actions planed in turn and then stop recorder.

Menu

Tools/Macro / Stop recorder.

Warning by default no indication is on show on screen that a macro is being recorded.

Running a macro

Once a macro has been recorded or coded it can be run when ever it is required, this can be done either from the keyboard shortcut that was assigned, the macro menu or by assigning the macro to a toolbar or menu.

Before a macro is run it is a good idea to save the project in case the macro causes undesired effects.

Menu

Tools / Macro / Macro

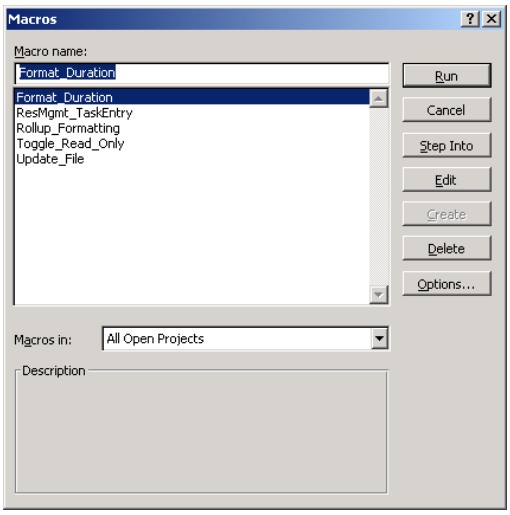


Figure 54

Choose the macro to run and then click on the Run button.

The macro action should now be performed.

If an error occurs on the macro and it doesn't perform the action expected review what the macro was created to do and what the project looked like when it was created. Small changes in the project can cause recorded macros to fail.

If any details of the project has been altered and these alterations were not as desired close the project and say No to saving the changes.

Assigning Macros to toolbars

To make the process of running a macro simpler, a toolbar button can be generated and the macro assigned. This button can be added to an existing toolbar or a new toolbar can be generated depending upon what is thought to be most appropriate.

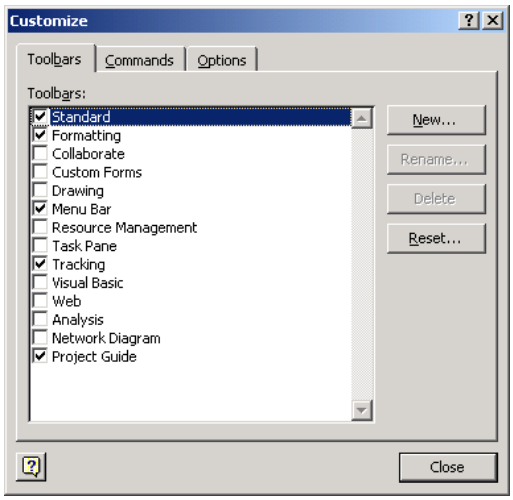
To create a new toolbar

Menu

View/toolbars customise

Tools/customise/toolbars

Both menu routes link to the same dialogue box



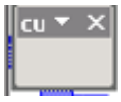
Working on the first tab in the Customize dialog box all existing toolbars are visible. If they have a check in the box to the left of the name they are currently on show.

To generate a new toolbar click on the New button.

Figure 55

Figure 56

Then enter a suitable name for the toolbar. Once the OK button has been clicked a new toolbar will be on screen. The toolbar will be very small and only occupy the space of one icon; therefore the toolbar name that was defined will not be visible.



This toolbar was named custom macros – the name will be shown as icons are added to the toolbar.

To add macro buttons to a toolbar

The same dialogue box that is used to create a toolbar is also used to add icons to the toolbar. If this area is not open use either menu route below.

Menu

View/ toolbars/customise

Tools/ customise/ toolbars

Change to the second tab which is titled commands

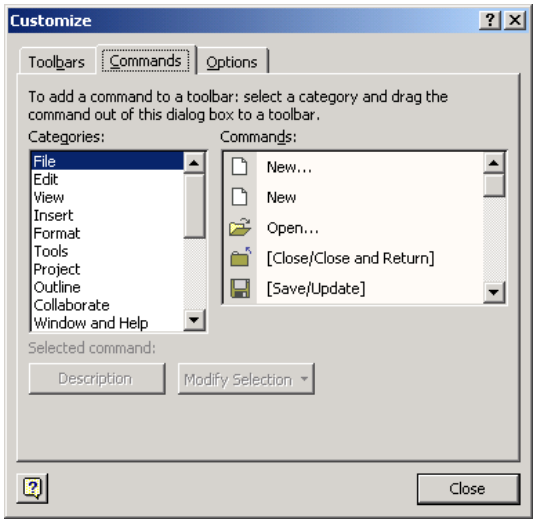


Figure 57

Scroll down the left side of the screen until the all macros category is on show.

Click on this category to select it and on the right side (commands) all macros will be shown, this will include the system macros as well as any that have been created.

Use the mouse to select the macro that a button will run.

Drag the macro onto the toolbar using the mouse with the left button depressed.

Look for a black bar which will indicate where the icon will be placed and release the mouse button when the icon is over the toolbar that was created or an existing toolbar.

The button that has been created will not look like existing toolbars just yet; the macro will be represented by text instead of an icon.

Repeat the process to add more macros to the toolbar.

To modify the icon

Ensure that the Customize dialogue box is open on screen.

Either within the customize dialogue box click on the modify button or use the right mouse button to modify the button.

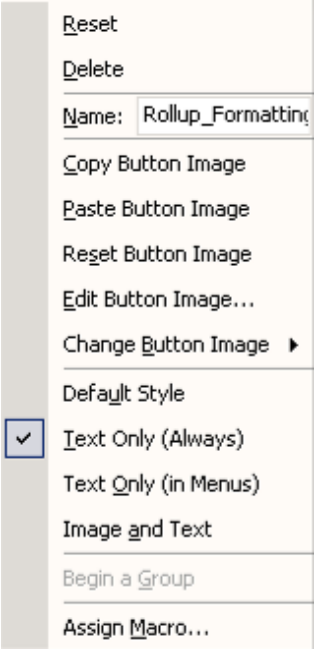


Figure 58

To display a graphic click on Change Button Image to choose an icon from the default set, or alternatively click on the Edit Button Image to design a button from scratch.

To display just the icon in the toolbar (without the text) re-enter this menu and change the setting to Default Style (rather than image and text).

Repeat the process with all toolbar buttons to be customised or alternatively close the customise dialogue box.

The toolbar will be stored on the Global file and is therefore available to all project on the computer where it was created.

Project Templates

A template is a project file that contains typical tasks or resources that can be used as a starting point for many projects within an organisation. Creating templates within project enables standardisation of project structure and can also help speed up the process of generating new project files.

When a new project is created by default it is a blank project based on the Global.mpt file which provides settings and views, these will be titled project 1, project 2 and so on.

Twelve sample templates are already in existence in project and these can be viewed by creating a new project

Menu

File / New

In task pane select new from general template

Change to project template tab to see the existing templates.

The sample templates cover a number of business areas and include

- Commercial construction
- Engineering
- Infrastructure Deployment
- MSF Application Development
- New business
- New Product
- Project Office
- Residential Construction
- Software Development

NB These templates are designed to install when they are used for the first time, this could result in an error appearing on the computer if the machine does not have access to installation files. To overcome the problem either request access to installation files via a network or use the project cd.

When a template is opened a copy is generated and the original is unaffected by any changes made within the copy.

Creating a Template

Any existing file can be saved as a template to enable the information entered to be reused.

Menu

Files/save as

Change the file type to a template and then the folder location will have changed to the template folder which is stored under application data.

Put in a file name.

Click on Save

The following dialogue box will then appear enabling certain data to be removed from the file before the template is generated. The existence of this feature enables completed or active projects to be used to generate a template as all data unique to the project file can be removed.

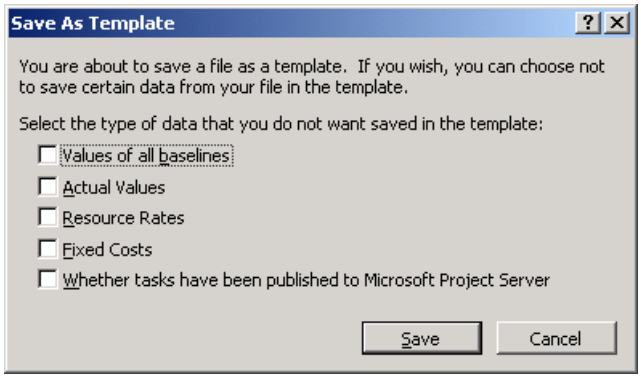


Figure 59

Certain data is not removed by this feature – task assignments, notes and hyperlinks.

Once the template is saved a new copy can be generated – this will have the template name until the file is saved, but the file type is mpp.

Editing a Template

Once a project template has been created the original cannot be opened for editing. When this is attempted and the original file is located and opened a copy is generated.

To edit a template therefore the following procedure is used to enable a template to be modified.

Create a copy of the template (using file/new) then make the changes that are required.

Save the file as a template with the same name as the original

A warning will be displayed that a file already exists with the name defined, click on ok to accept that this file will be overwritten.

Using a Template

To use any template, whether it is user defined or a sample template.

Menu

File/new

In the task pane chose general templates from the New from Template Section.

How to use the Organizer

The organizer is a feature in project that enables objects that have been created or amended to be copied from one project or template to another project or template.

Work in the project which contains the object to be copied, renamed or deleted.

Menu

Tools/organizer

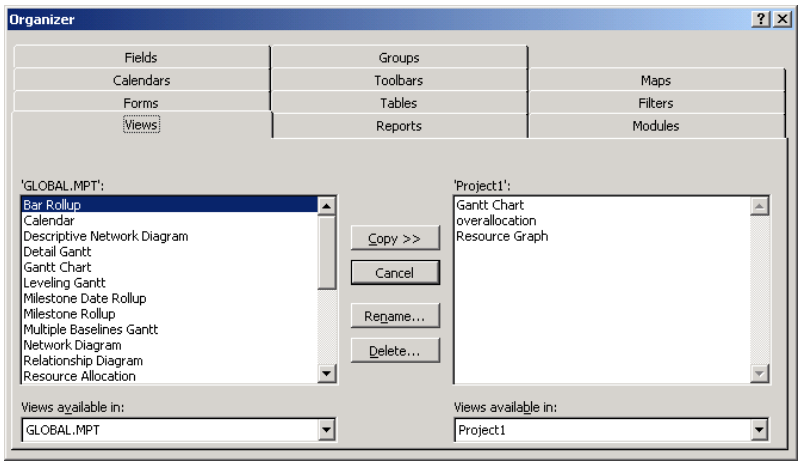


Figure 60

The dialog box that displays contains a tab for all the different objects that can be moved between projects.

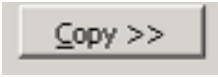
On the left side of the screen the template that the project is based on will be shown. In Figure 60, the template is the Global. MPT which is the default project template.

On the right side of the dialog box the open project is displayed.

To copy an object

Move to the tab that describes the object, for example the view tab.

Select the object to be copied by clicking on the object name.

If an item on the left of the screen is selected the copy button will copy right 

If an item on the right of the screen is selected the copy button will copy left.

Click on the copy button and the selected object will appear on the opposite side of the screen.

If the view that is being copied already exists on the other side of the screen, a prompt will appear warning that the object already exists in the project or template

Options given are:

Click Yes to proceed

Click No to cancel

Click Rename to amend the view name before the copy takes place

When all objects have been copied click on the Close icon in the top right corner of the screen.

Appendix

Shortcut keys

The list below is some of the most useful keyboard shortcut keys, many others exist and details relating to these can be found in the project help files.

Shortcut		Action Performed
Ctrl	*	Zoom out
Ctrl	/	Zoom in
ctrl	A	Unassigned
ctrl	B	Bold
ctrl	C	Copy
ctrl	D	Fill Down
ctrl	E	Unassigned
ctrl	F	Find
	F2	Edit Task name
	F3	Remove Filter
Ctrl	F3	Reapply filter (must be done before it is removed)
Shift	F3	Remove sort or group
Alt	F3	Display column definition dialogue box
	F5	Go to
Alt	F5	Go to next over allocation
	F6	Activate other pane when screen split
Alt	F8	Display macro dialogue box
ctrl	G	Go to
ctrl	H	Replace
ctrl	I	Italics
ctrl	J	Unassigned
ctrl	K	Insert Hyperlink
ctrl	L	Unassigned
ctrl	M	Unassigned
ctrl	N	New Project File
ctrl	O	Open Project File
ctrl	P	Print
ctrl	Q	Unassigned
ctrl	R	Fill Right

Shortcut		Action Performed
ctrl	S	Save
ctrl	T	Unassigned
ctrl	U	Underline
ctrl	V	Paste
ctrl	W	Unassigned
ctrl	X	Cut
ctrl	Y	Unassigned
ctrl	Z	Undo