

Assigning resources to tasks

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Produced by:

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www.projectlearning.net/project_mentor.htm

More useful tips and tricks can be found on the Project Learning blog:

www.projectknowledge.net

Related Document(s)

Using effort-driven tasks www.projectlearning.net/pdf/D2.2.pdf

Assigning resources to tasks

Introduction

A fundamental Microsoft Project Skill (especially if you are working in an Enterprise environment) is to understand the nature of resource assignments. On many training courses, we've had requests for a 'back to basics' introduction to how assignments (and hence work and cost) are scheduled.

These tips and tricks illustrate how assignments are created, work is aggregated and costs are calculated. In addition, resource conflicts are examined. All the examples below were created using Microsoft Excel for illustrative purposes, but would be scheduled in exactly the same manner by Microsoft Project.

Background

Once the project's schedule has been calculated (with critical path analysis) and a Gantt chart created, the next step in the planning process is to create some resource assignments. These assignments add the people dimension - someone doing something. Assignments can be simple or they can be complex. What is important is a general understanding of the relationship between the task (something that needs to be achieved) and the resource (the individual that performs the work to achieve the task's objective). Once the basics of assignment and aggregation are understood, more sophisticated use can be made of the (often expensive) people that work upon projects.

Assigning resources to tasks

Resource assignments defined

An assignment is the relationship between a task and a resource. This relationship creates work - somebody doing something to achieve the objective of the task. The most common types of assignment are:

An individual full-time

 **Tim Brown**

An individual part-time

 **Tim Brown[50%]**

Multiple individuals full-time

 **John Garner,Sally Beaumont**

Multiple individuals part-time

 **Tim Brown[50%],Sally Beaumont[50%]**

When an assignment is created, Microsoft Project calculates work according to a scheduling formula:

$$\text{Assigned Work} = \text{Assigned Units} \times \text{Task Duration}$$

For example; 80 hours work = 100% of (resource) x 80 hours duration (10 days @ 8 hours per day).

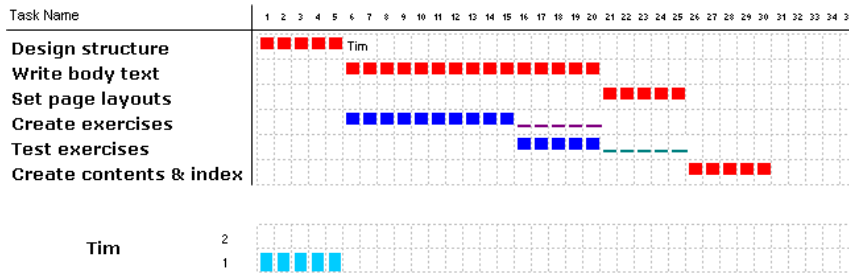
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| Hints | <ul style="list-style-type: none">When tasks have just one resource assigned to them, their scheduled start and the start of the assignment are the same. The scheduled finish of the task is equal to the end of the assignment. |
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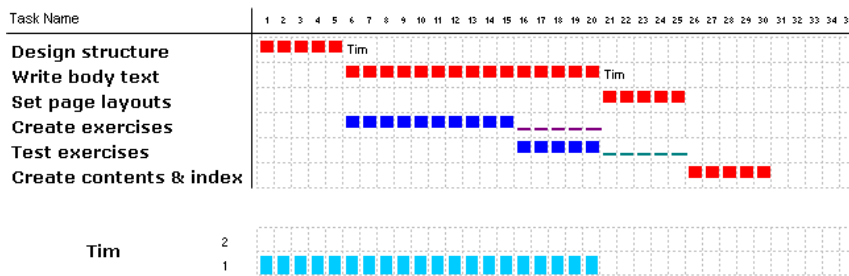
Assigning individual people to tasks

When an individual is assigned to a task, the work for that resource is apportioned over the task's duration. This apportionment is commonly referred to as aggregation.

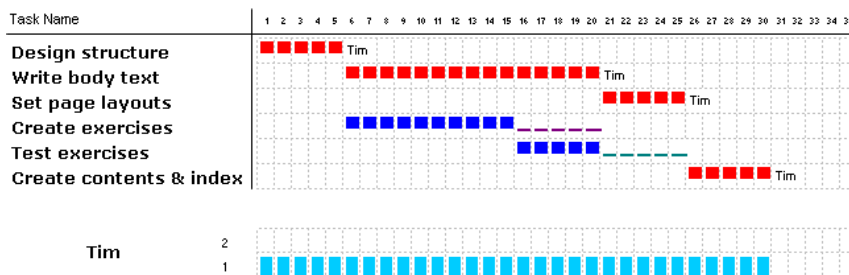
- Tim assigned to the Design Structure task for 5 days full time:



- An additional assignment of 15 days work for Tim on the Write body text task:



- Subsequent 5 day assignments for Tim on the Set page layouts and Create contents & index tasks:



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| Hints | <ul style="list-style-type: none"> • Assignments should be made against normal tasks and not summary tasks or milestones. • As the assignments above are sequential, Tim is able to carry out the assignments within his available working time and his availability profile. |
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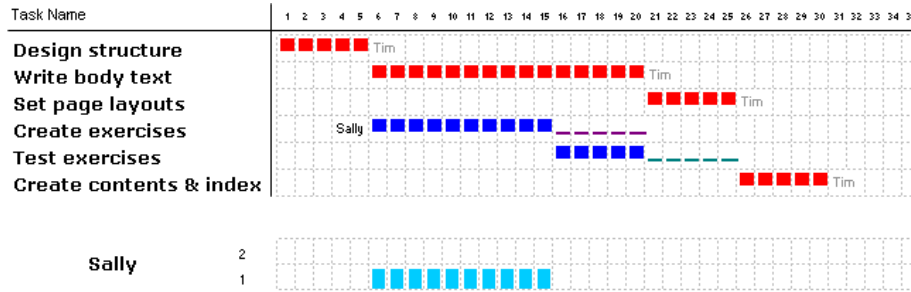
Assigning resources to tasks

Assigning several people to tasks

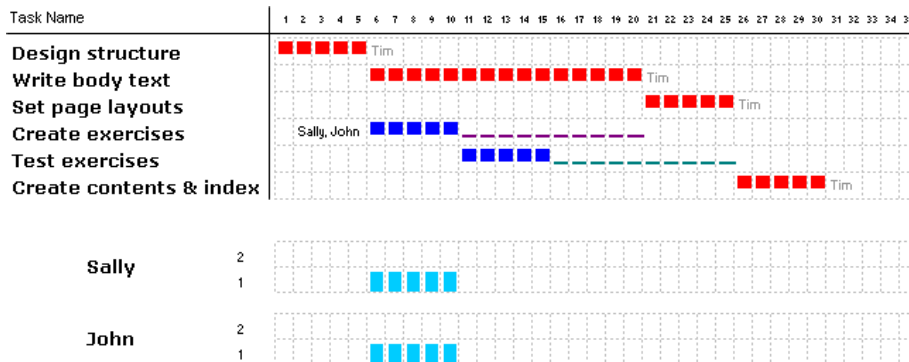
When more than one person is assigned to a task, there are more options to consider:

- Is the task effort-driven or not?
- What is the task's type?

Take the example below:



- Sally has been assigned 80 hours (10 days) of work against the Test exercises task.
- The total work for the task is therefore calculated as 80 hours (from the initial assignment of Sally).
- If another resource (John) is assigned to the same task as Sally:



If the task is effort-driven, its duration will be halved. This is because the total work (defined by the initial assignment) is now shared as assigned work for the two resources assigned to the task:

Before: 80 hours = 100% (assigned units) of Sally x 10 days task duration.

After: 80 hours = 100% of Sally x 5 days duration PLUS

100% of John x 5 days duration.

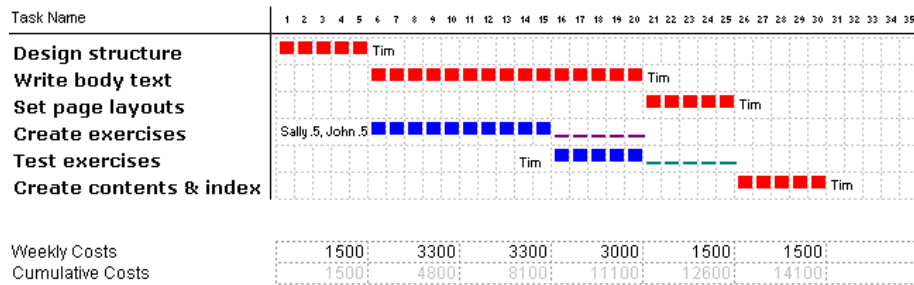
Assigning resources to tasks

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| Hints | <ul style="list-style-type: none"> Parallel assignments are the commonest cause of resource conflicts. Although the Test exercises task possesses free slack any delay to it would cause a resource conflict with Tim's commitment to the Set page layouts task. |
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Creating a cost schedule

When resources are assigned to tasks, they create measurable work. This work in turn can incur cost. The standard rate for each of the three resources described above is:

- Tim 300 cost units (\$, £) per day.
- Sally 400 per day.
- John 320 per day.



The weekly costs for the project above are derived as follows:

- Week 1 5 days of Tim @ 300/day = 1500
- Week 2 5 days of Tim plus 5 days for 50% of Sally (@ 400/day) plus 5 days for 50% of John (@ 320/day) = 3300
- Week 3 5 days of Tim plus 5 days for 50% of Sally plus 5 days for 50% of John = 3300
- Week 4 5 days of Tim plus a further 5 days for Tim = 3000
- Week 5 5 days for Tim = 1500
- Week 6 5 days for Tim = 1500



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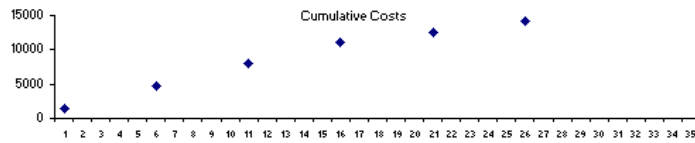
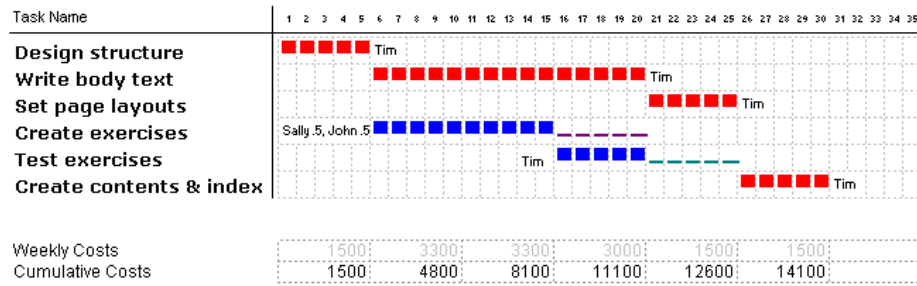
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These costs could also be displayed as a cumulative curve:



- The total cost for the project is 14,100. This is the sum of the costs for weeks 1 through 6.

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| Hints | <ul style="list-style-type: none"> • Costs for tasks and resources can have a number of accrual methods. |
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