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College of Industrial Management
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MIS 301 – Systems Analysis & Design
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**Lab#1:
Managing Projects through Microsoft Project**

In managing projects, there are essentially two steps: project planning, and project tracking.

Project planning happens at the start of a project; at this stage the planner identifies the tasks involved, estimates task duration, and guesses at task sequence.

Project Tracking As the project progresses, some of this may deviate from the planned schedule:

- (a) task sequences may have to be altered, and
- (b) tasks may take longer or shorter than originally planned.

Project tracking involves recording these various changes, and making appropriate changes to the proposed schedule; tracking must take place throughout the life of the project.

Step I: Defining a Project

Initiating a Project

This step requires the identifying & planning for various aspects of your project. The step doesn't need Microsoft Project to be involved. The step is composed of:

- Identifying the project deadline,
- Identifying the project allocated budget,
- the main tasks to be accomplished, their durations and the relationships among the tasks,
- the people and skills which will be necessary to complete the project on time,
- identifying the most important issues and risks.

Example Scenario:

You are working for a company providing reliable courier services, both on international and national scales. The company is currently looking for opening new branches to different key locations within the country.

As a project manager, you are assigned to analyze different areas within a given city (say, Dhahran) and submit a detailed proposal discussing the possibility of opening a branch office to the selected areas.

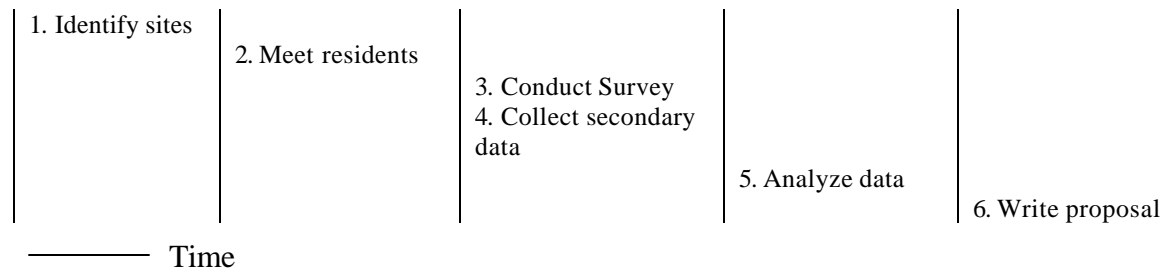
Hands On 1.1:

At the first step, you should have found at least the following project details:

- The deadline of the project is supposed to be June 1, 2003.
- The tasks required, their duration estimates and their relationships among each other.
After you gave a careful thought, the following task list with their estimated duration is realized.

Task Number	Task Name	Estimated Duration
Task#1	Identify sites	10 days
Task#2	Meet residents	1 days
Task#3	Conduct Survey	15 days
Task#4	Collect secondary data	10 days
Task#5	Analyze data	10 days
Task#6	Write proposal	20 days

The required sequence of the tasks is found to be as follows:



To make the things simple, the budget and other resources (employees etc.) allocated to the activity are not being considered.

Step II: Setup a Project inside Microsoft Project 2000

Launch Microsoft Project

The various parts of the *Project* screen are as follows (Figure 1):

- Below the menu bar is the tool bar. This contains a number of buttons that can be clicked to carry out certain common operations.
- Below the toolbar, to the left side of the screen is the **Task Table**. This looks like a spreadsheet, with information about each task in a row.
- To the right of the Task Table is the **Gantt Chart**. Using horizontal bars (blue colored mostly), the Gantt Chart graphically represents the task schedule.

Starting a new project file

- Select **File|New** from the menu. The New dialogue box appears. Open '**Blank Project File**'.
- Save the file with the name, myproject.mpp without a '**Baseline option**' (described later).

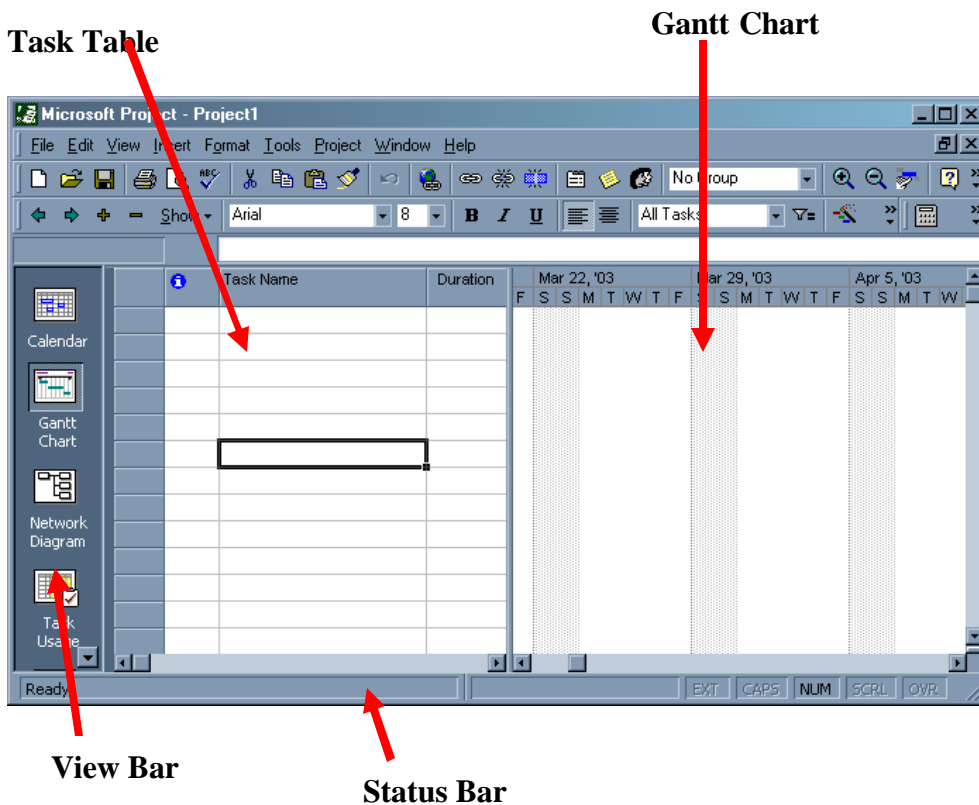


Figure 1

Set Project Start (or End) Date

On **Project| Project Information**, enter the project start date. The finish date cannot be altered as Microsoft Project will automatically calculate it depending upon the task list you will enter. [It can also be other way round]

Set the working time for the project calendar

You may need to change the working days and hours for your project calendar.

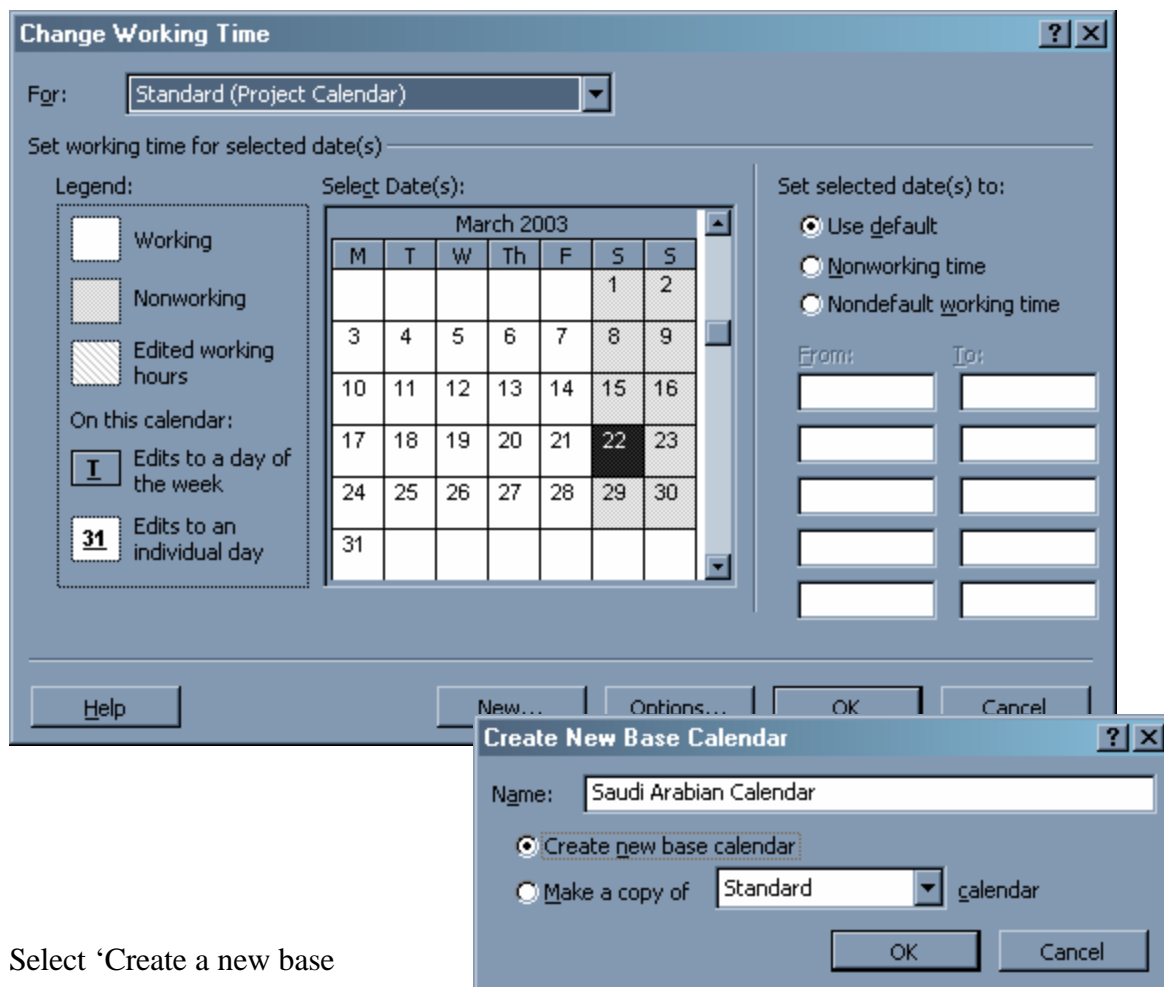
In Microsoft Project, the default working time is Monday through Friday, 8:00 am to 12:00pm and 1:00 pm to 5:00 pm (allotting an hour for lunch). You can create a separate calendar specific to your project as follows:

Hands On 2.1:

Select **Tools| Change Working Time**

A calendar dialogue will appear (Figure 2).

Start defining a new calendar, named 'Saudi Arabian Calendar' by pressing **New** button.



Select 'Create a new base

calendar' and press OK.

Define nonworking days and the hours in the working days. Press OK.

Other relevant settings

Several options for *Project* functioning and appearance can be controlled using the **Tools|Options...** menu item. Considering the fact that, the current project will not be covering resource and budget aspects, do the following settings in the **Schedule** tab (Figure 3):

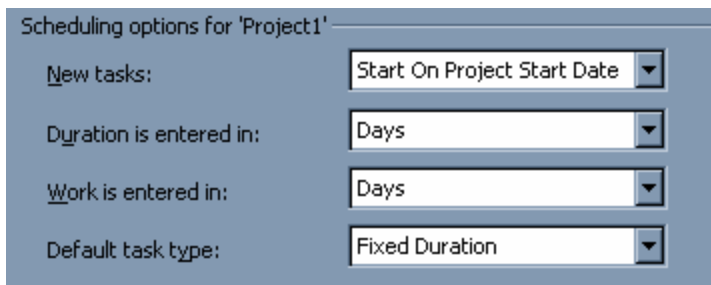


Figure 3

Hands On 2.2:

- Suppose the project under consideration was started on Mar 4, 2003 (3/4/03) and current date is Mar 1, 2003.
- Also change the project's calendar to 'Saudi Arabian Calendar' (already setup).

Project Information for 'Project1'

Start date: Tue 3/4/03

Finish date: Tue 3/4/03

Schedule from: Project Start Date

All tasks begin as soon as possible.

Current date: Sat 3/1/03

Status date: NA

Calendar: Saudi Arabian Calendar

Priority: 500

Buttons: Help, Statistics..., OK, Cancel

Step III. Start entering the list of task and their durations.

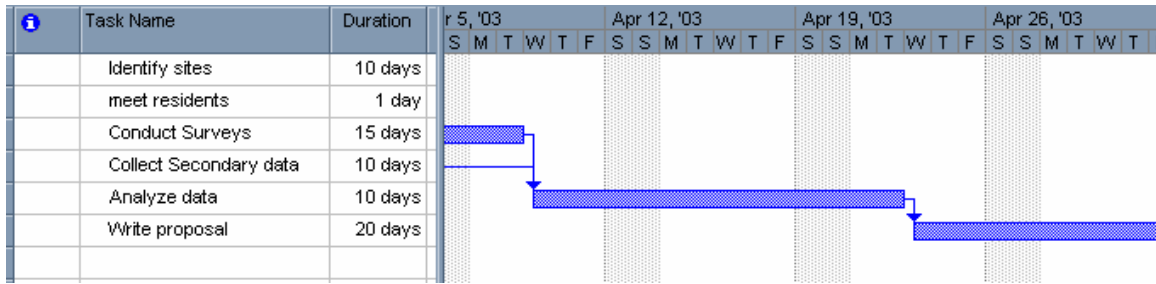
Entering the task list

To make scheduling tasks easier, enter the task list in a logical order.

1. In the Task Name field, type a task name.
2. Click the enter button or press ENTER.
3. For each remaining task, repeat steps 1 and 2.
4. The task name appears in the cell, and a default duration of one day (1 day?) is assigned.
5. To change the default duration, click on the cell you want to change, type in the correct duration, and press Enter.

Hands On 3.1:

- Enter the task list outlined in the initial phase into the Task Entry Table.
- Use 'Link Task' button to create the needed task relationship.
- The relationship type is 'Finish-to-Start' in most of the links. However between task#3 & 4 it is 'Start-to-start'.
- Also task#5 has a link of type 'Finish-to-start' with both task#3 & task#4.



Organizing Task List

To do a good job laying out your project, you will need to train yourself to think Hierarchically. In other words, you can outline your tasks to organize them into *major phases or logical groups*.





The outlining is a must in a project if:

- It contains 20 or more tasks.
- You want a hierarchical structure to make your project easier to manage.
- You want to create reports with varying levels of detail, such as a brief report that shows only the major phases of the project.

Outlining is a way of organizing tasks into phases so that you can see (and adjust, if necessary), the structure of the project.

- Tasks and subtasks are organized hierarchically.
- A summary task labels each phase.
- Subtasks are indented below each summary task.

How to label a group of tasks (Summary Task)?

- To label each phase in an outline, you create a new task called a **Summary Task**.
- The summary task shows you the start date and finish date of the phase.
- It summarizes other information about all the tasks in the phase, such as the total cost and total duration.
- The tasks that make up the phase are called Subtasks.
- To create a hierarchy with a main task and its subtasks, list the subtasks immediately below the main task.
- Highlight the subtasks, and click on the demote button, , in the toolbar.
- The highlighted subtasks are indented, and the main task is shown in bold.
- This action can be reversed by highlighting a subtask and clicking on the promote button, , in the toolbar.
- To hide the subtasks under a main task, click on the collapse button, , in the toolbar; reverse this action using the expand button, .

Use of Milestone tasks

A special kind of task is the *milestone*. This is usually has a duration of **zero days**, and is used to indicate an event rather than a task.

Hands On 3.2:

Enter mile stones and summary task in the task list (done in Hands on 3.1) as follows:

- Enter two tasks **Project start** and **Project finish** respectively at the beginning and end of the task list as milestones.
- To convert the tasks to a milestone, double-click on its cell in the **Task Table**. In the resulting **Task Information** dialog box, choose the **Advanced** tab and click on the box next to **Mark Task as Milestone**.
- Make a relationship between the last task in the list (**Write Proposal**) and Project finish task of type 'Finish-to-Start'.
- Insert a new task labeled **Study phase** above **Conduct survey** and make it the main task containing the subtasks **Conduct survey**, **Collect secondary data**, and **Analyze data**. The Task Table should look as follows:

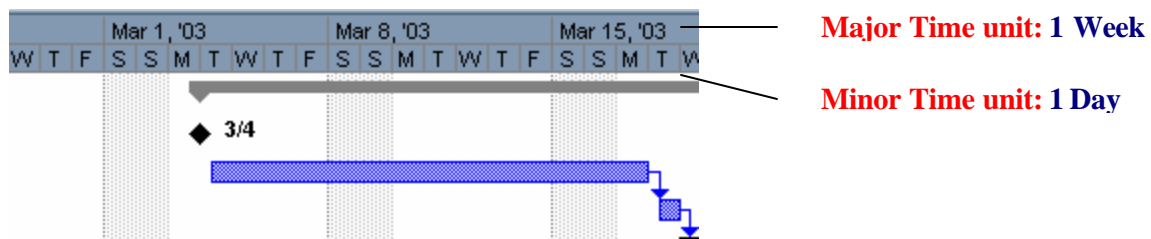
...continue

Task Name	Duration
Project Start	0d
Identify site	10d
Meet residents	1d
Study Phase	15d
Conduct survey	15d
Collect secondary c	10d
Analyze data	10d
Write proposal	20d
Project Finish	0d

Step IV. Gantt Chart Display Options

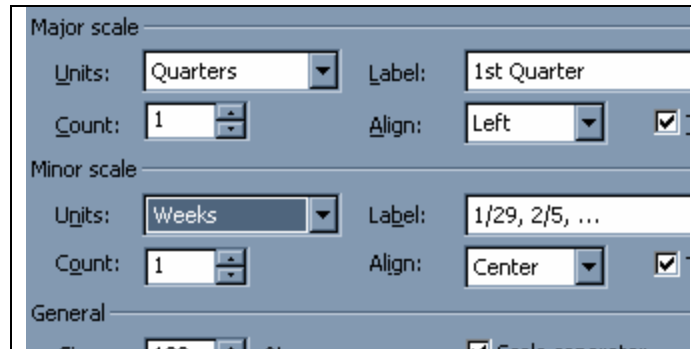
Adjusting the time scale for the Gantt Chart

In order to properly accommodate the tasks within the Gantt chart area, the time scale can be adjusted. A time scale adjustment allows us to change the major and minor time units.

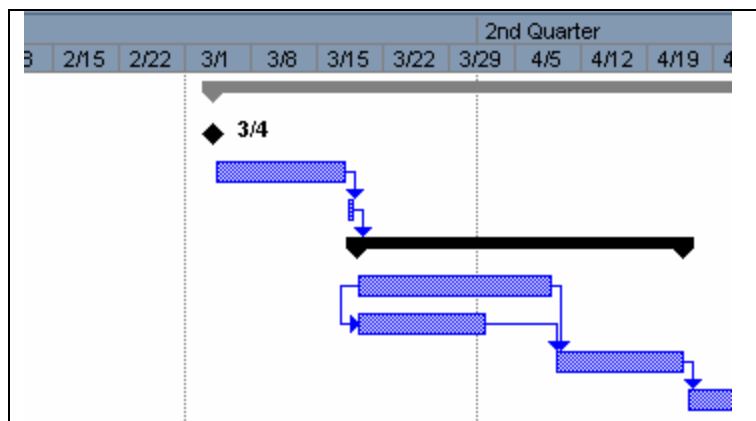


Hands On 4.1:

To change the timescale of the Gantt Chart, choose **Format|Timescale...** In the resulting **Timescale** dialog box, set the major and minor scale units as follows:



After pressing OK for the above mentioned scale, the following change can be observed in the Gantt Chart area.



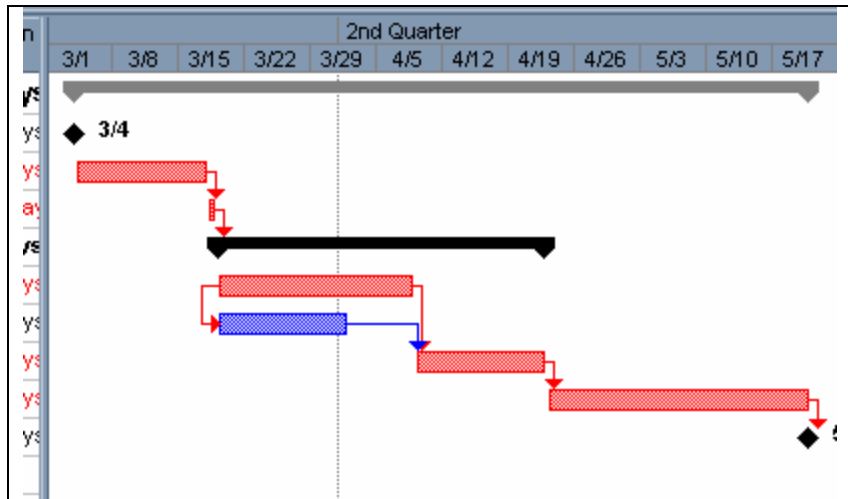
Using Gantt Chart Wizard

Gantt chart display can be altered to show many different aspects of the project with different formatting (colors, etc.). An important aspect, **critical tasks** can be seen in red by making use of this wizard.

Note: for the task labels inside the task table, use **Format| Text Styles...** to enable critical tasks display.

Hands On 4.2:

Use Gantt Chart Wizard to show the critical path on the chart.



Note: The red bars indicate that these tasks are critical: they must be completed on time *if the project is not to be delayed beyond the target date*. (For some reason, in some cases *Project* does not correctly identify critical tasks, at least those tasks that would intuitively appear to be critical. It pays to visually inspect your Gantt Chart.)

Step V: Optimizing the project schedule

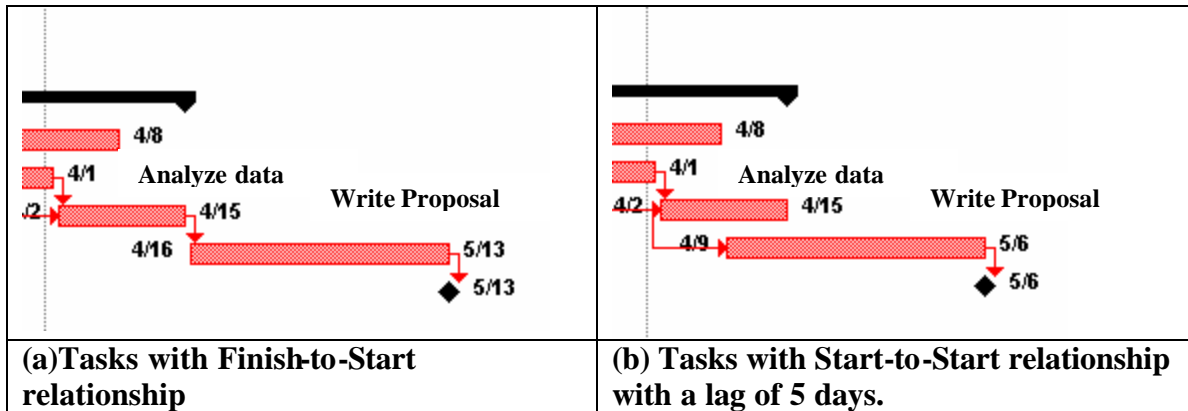
Look for the possibility running tasks in parallel.

In case some tasks can be started in parallel with some other, the attempt will clearly improve the project schedule in terms of its completion date.

In the example being discussed, the last task '**Write Proposal**' can be started in parallel with the task '**Analyze data**' but after some delay (say 5 days).

Hands On 5.1:

- Let the task 'Write Proposal' start after 5 days of 'Analyze data' task.
- Change the relationship type between '**Write Proposal**' & '**Analyze data**' as 'Start-to-Start' with a lag time of 5 days.
- Observe the change in project completion date.



Step VI: Tracking the project progress

To track projects in Microsoft Project, a distinction is drawn between planned, actual, and scheduled information about tasks.

- **Planned task** dates (start, finish, duration) are those that are assigned in the initial schedule that is created.
- As the project progresses, **actual dates** are recorded; these may or may not be different from the planned dates.
- In response to changing circumstances, the project may have to be rescheduled; this new information is recorded as **scheduled dates**.

The three different types of information make it possible to keep track of how a project is progressing vis-à-vis the initial plan.

Saving the Projects Baseline (Planned)

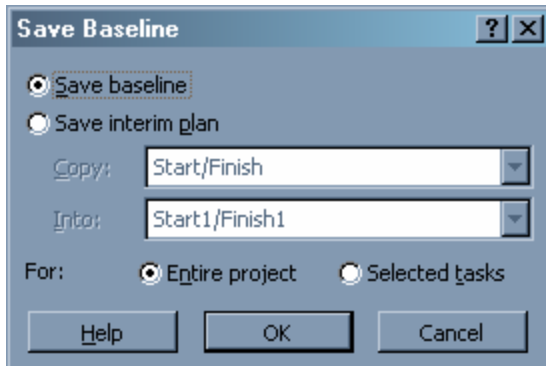
- The original project plan you use to track progress during a project is called the baseline plan.
- The baseline plan includes task start and finish dates and resource and cost information.
- A baseline schedule is necessary for determining if your project is on schedule at a later date.

When to save/ not save Baseline?

- When you have entered your schedule completely and accurately, save the project with a baseline.
- If you want to add more tasks or modify your schedule further, save the project without a baseline.

Hands On 6.1:

To do this, choose **Tools|Tracking|Save Baseline...** In the resulting dialog box, choose **Baseline** and **Entire Project**, and click the **OK** button.



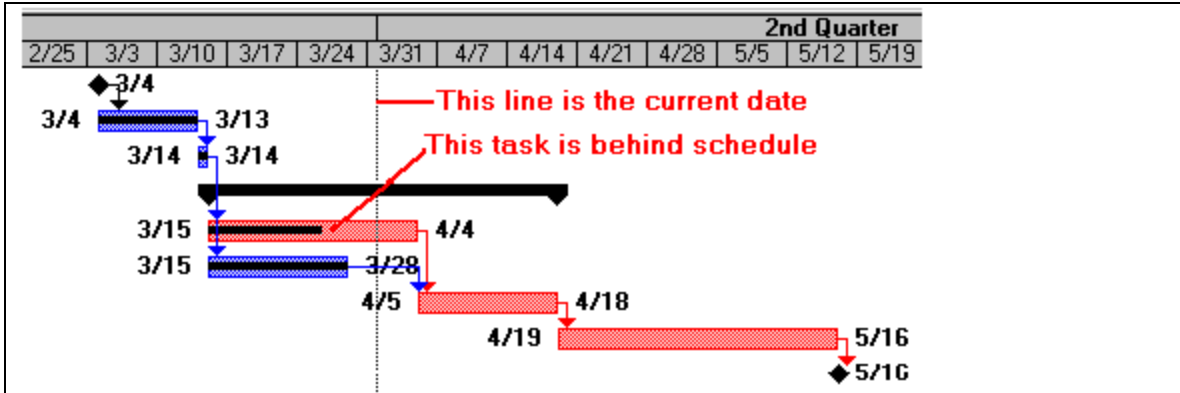
Updating the project progress (Actual)

The date on which the project data is being analyzed with the planned on must be entered as the **Current Date**. (It can be done fictitiously also for testing purposes). After that the actual completion data for different tasks will be entered.

Hands On 6.2

- Use **Project| Project Information...** Confirm whether today's date is appearing in the Current Date field.
- Next, enter the actual completion data for tasks that are already complete or under way. To do this, click on each task that is complete, and select **Tools|Tracking|Update Tasks...** In the **Update Task** dialog box, type the percentage of work completed or the actual finish date.
 - For this exercise, *Identify site* finished on 3/13/96; *Meet Residents* and *Collect secondary data* are **100%** complete; *Conduct survey* is only **40%** complete.
 - Note that there is a bar through each task showing how much is complete. If the project is on schedule, then:
 - *all tasks finishing before today's date* should have a bar extending their whole length.
 - Tasks currently under way should have a bar extending till the current date. [Clearly there is a problem with *Conduct survey*; it is behind schedule.]

....continue



Rescheduling tasks (Scheduled) to resolve the work slippage

The delayed tasks can be made OK in two ways:

1. Assign more labor to the task to finish it within its planned time
2. Allow the task to finish at a later date (may delay the project if the task is a critical task)

Hands On 6.3:

1. Increase the time allotted to the task so that 60% of the task represents the number of days till today's date.
2. Click on the task *Conduct survey*, and choose the **Tools|Tracking|Update Tasks...** menu item.
3. In the **Update Task** dialog box, increase the **Remaining Duration** to **10**, and click **OK**.
4. The task is now going to take longer, but the completion bar is still short of today's date.
5. Choose the **Tools|Tracking|Update Tasks...** menu item again, and in the **Update Task** dialog box, change the **% Complete** back to **40%**.
6. Now, the schedule is approximately as we want it:

Comparing Current Progress with the planned progress (Baseline)

Choose a different view to get a better sense of how the project has changed.

Hands On 6.4:

Choose **View|More Views...**

In the **More Views** dialog box, choose **Tracking Gantt Chart** (this is the last in the list), and click on **Apply**. (You will have to change the **Timescale** as described earlier.)

The Gantt Chart now looks as follows:

