PMI Pune Deccan - India Chapter

Making project management indispensable for business results. ®

Microsoft Project
How to Build a Project Plan

Ronald N Naik

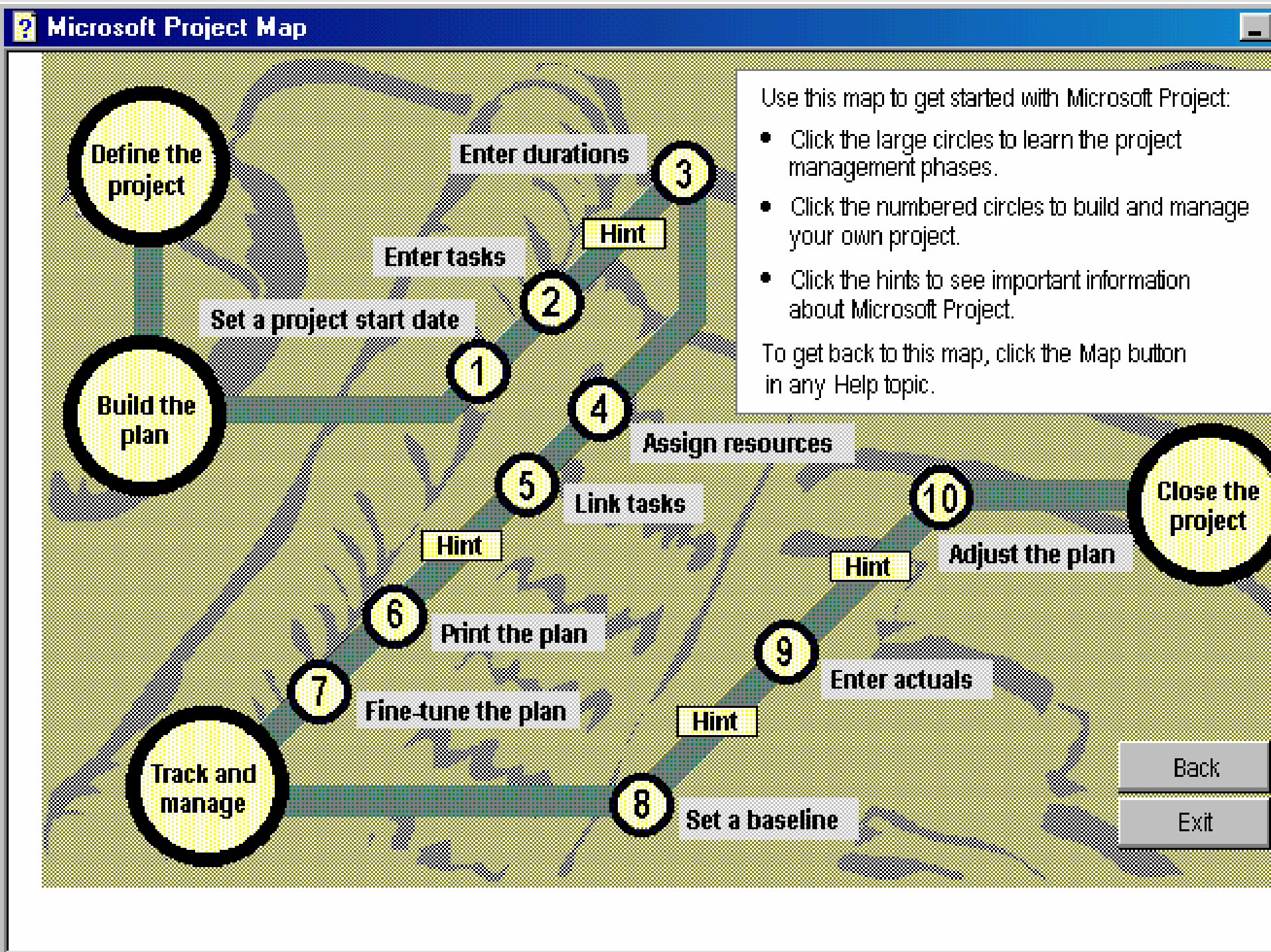
Overview

After this session you should be able to:

- Set up a project document using best practices
- Enter task details
- Enter durations against tasks
- Link tasks
- Assign resources
- Baseline the plan
- Manage the project plan and track progress

Project Setup Best Practices

- Iterative Saves and Versions
- Project information dialog box
- Project defaults (check them before starting a new project)
- Project calendar adjustments (holidays, etc..)
- Task Sheet View for initial task entry
- Add columns

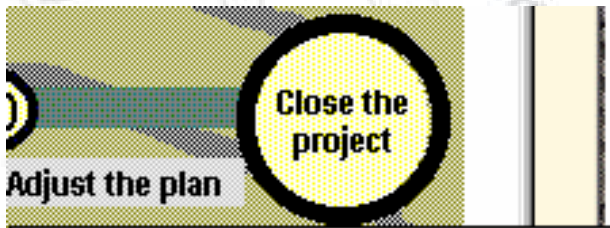

Microsoft Project Map
Define the project
Enter durations
3
Hint
Enter tasks
2
Set a project start date
1
Build the plan
4
Assign resources
5
Link tasks
Hint
Hint
10
Close the project
Adjust the plan
6
Print the plan
9
Enter actuals
7
Fine-tune the plan
Hint
Track and manage
8
Set a baseline
Use this map to get started with Microsoft Project:
Click the large circles to learn the project management phases.
Click the numbered circles to build and manage your own project.
Click the hints to see important information about Microsoft Project.
To get back to this map, click the Map button in any Help topic.
Back
Exit

You can't hit the target if you can't see it. So, your first step is to set the project's objective. The objective should be measurable, define a definite end to the project, and include any assumptions about and constraints on the project. To prevent problems later, be sure everyone affected agrees to your definition of the objective.

Once your project starts, it's up to your team to execute the plan. But you'll need to keep close tabs on their progress, because you'll undoubtedly encounter problems you didn't expect.

By keeping Microsoft Project up to date, you can see the latest status of the project and identify and resolve problems early on that might affect your project's success.

Once you know where your project is going, you need to figure out the best way to get there. To do that, you'll gather project information such as a list of the tasks that need to be done and estimates for how long each task will take. Then, you'll enter the information into Microsoft Project. As you enter information, Microsoft Project creates a plan for getting your project done.



Every project is a learning experience. No matter how well you planned at the beginning, by the end of your project, you'll find your plan has changed from the original version. To make the most of your experience, use the information you've kept in Microsoft Project to compare your original project plan with the way the project actually progressed.

What MS-projects cannot do?

- it cannot create the **tasks** for you
- it cannot create the **logic** relationships
- it does not know the **duration** of each task
- it cannot possibly know what **resources** you have to apply to the tasks

Gantt Charts

- Named after Henry Gantt.
- Around since 1st World War.
- Commonest graphical representation of plans.
- Can show critical path.
- But not great at showing precedence.
- Easy for novices to construct and interpret.
- Other charts/views are available in MS-Project.

Dependency/Precedence Relationships

- Describe what activities must be done before another activity can take place
  - Boil kettle before adding water to cup
  - Pick up hand set before dialling number
  - Buy computer system before installing it.
  - Write dissertation before submitting it.

Critical Path

- The chain of sequential activities that determines the minimum time required for the project.
- Passes through activities with least **float**.
- If you mess with critical tasks, you mess with the project's end date!!
- You might wish to show the critical path on your Gantt chart.
  - MS-Project can help you.

Float (Slack)

- Total Float
  - amount of time a task can be delayed without affecting the end date of the project.
  - Critical path tasks have zero total float.
- Free Float
  - amount of time a task can be delayed before affecting the next task.
  - Used for managing resources without impacting on future tasks.

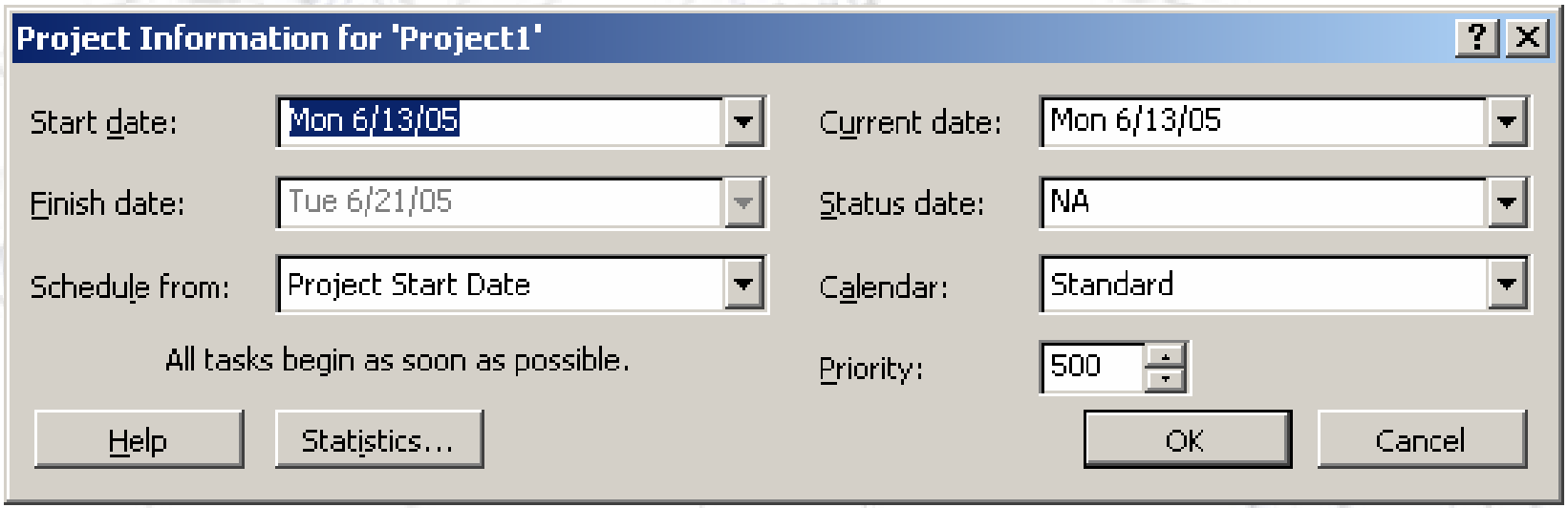
Consequences of Risk

- Lack of time to fix problems, investigate issues, develop solutions, etc
- Grumpy supervisors
- Lower marks than expected
- Stress, heroics and late nights
- Etc

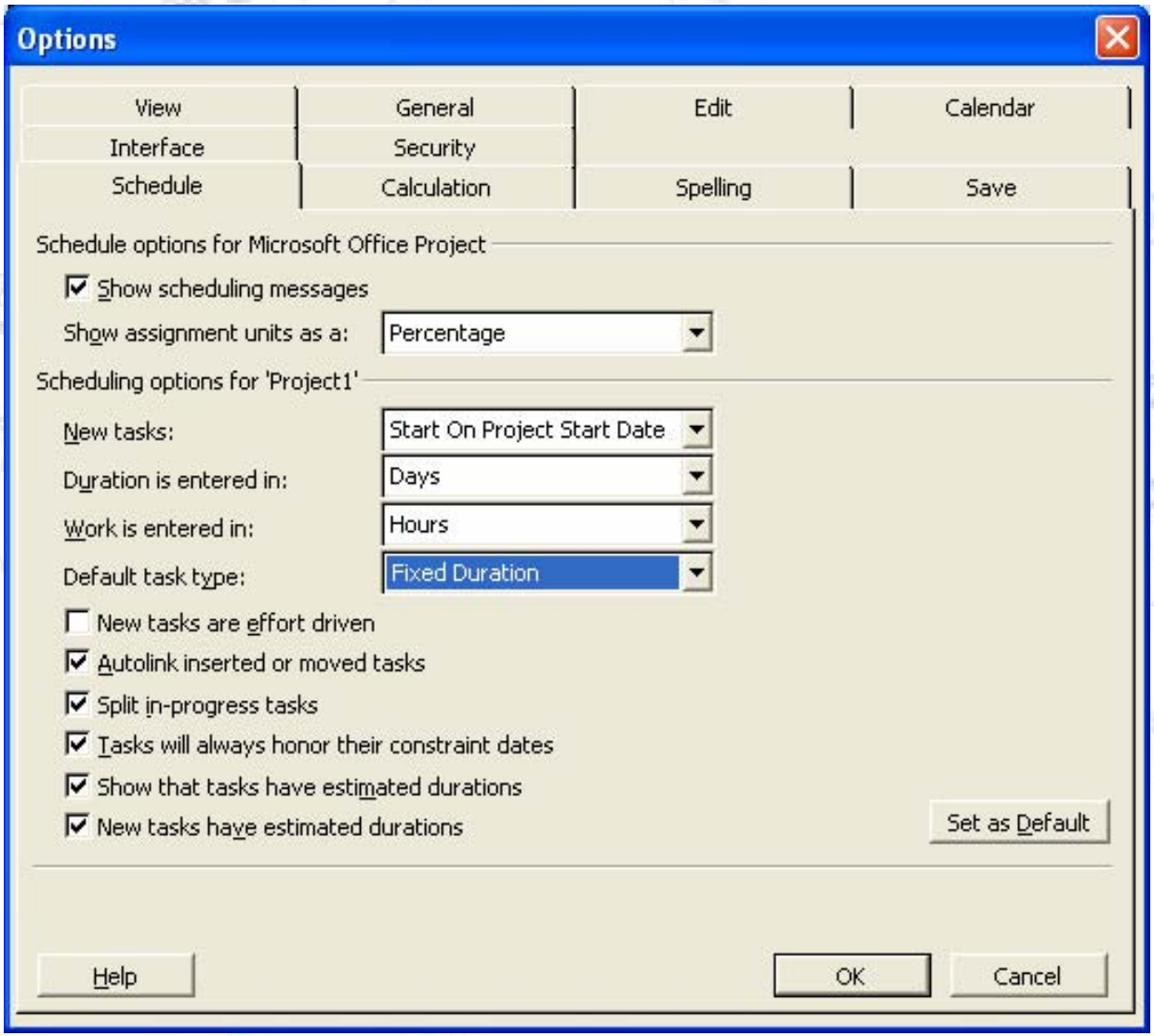
Prediction & Control

- Predicting Risk
  - Your experience
  - Your supervisor's experience
  - Simulations
  - Experiments (prototypes)
  - Planning
- Controlling Risk
  - Contingencies
  - Planning

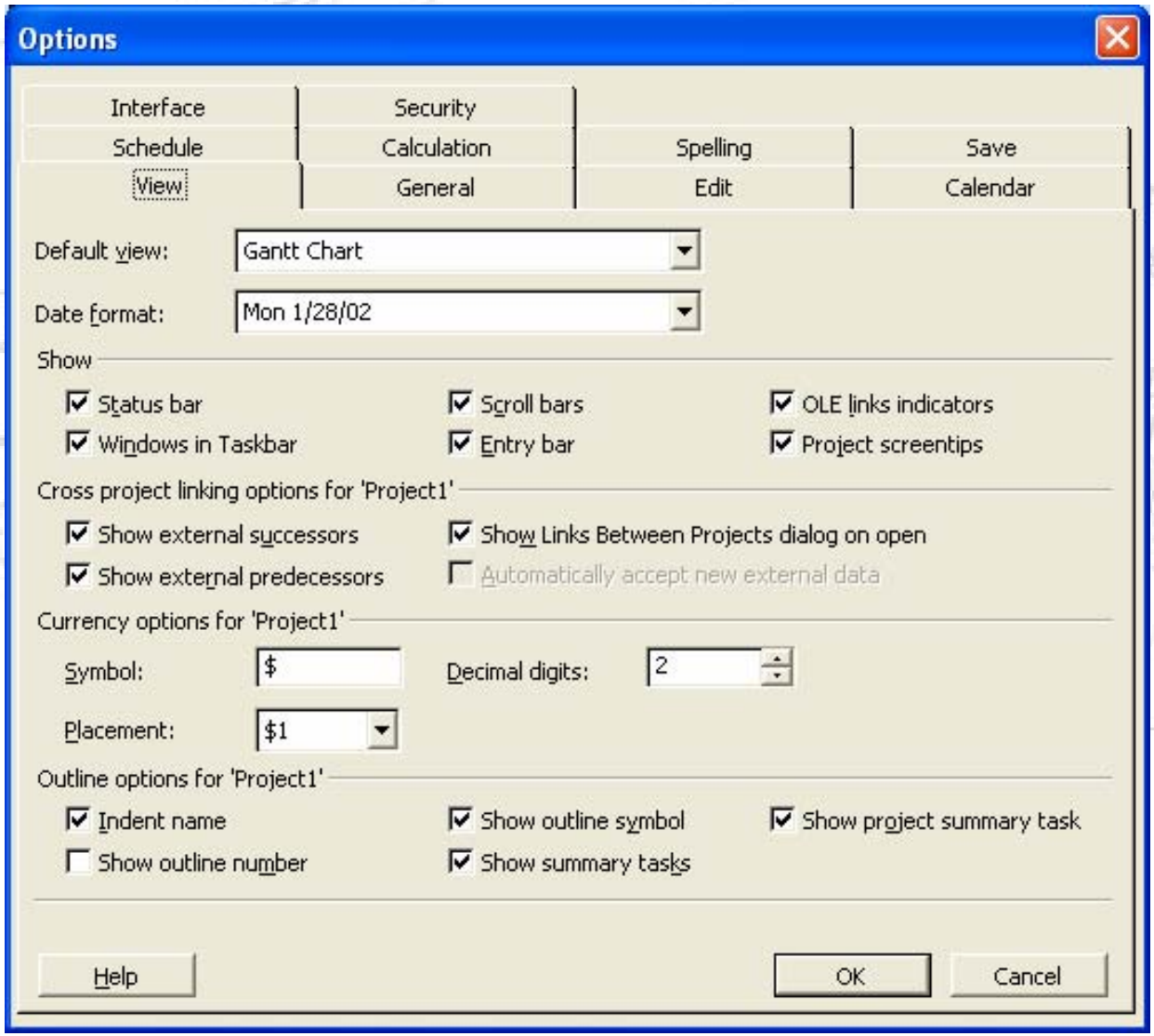
Project Information



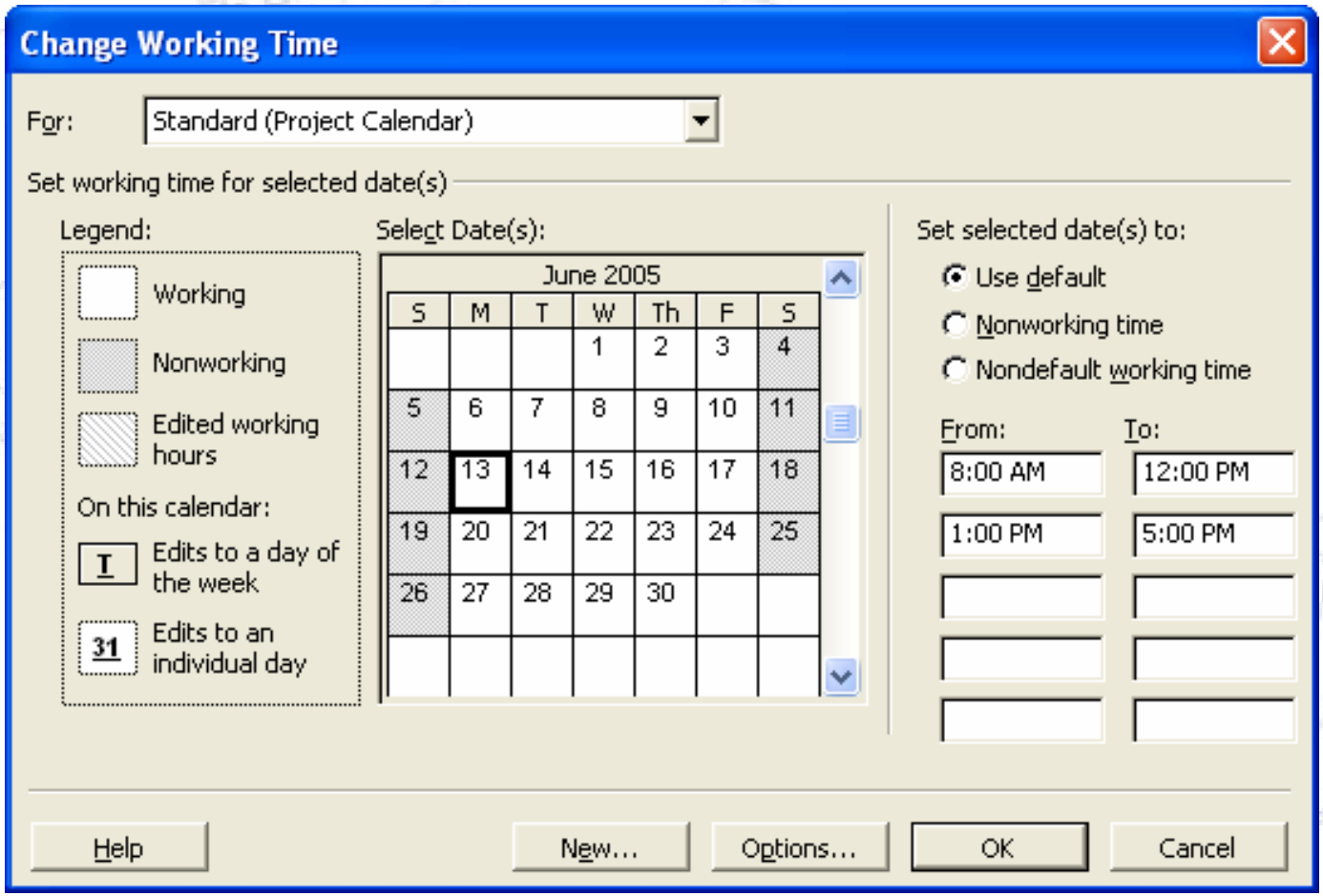
Project Defaults



Project Defaults



Project Calendars



Views and Columns

- Task Sheet view
- Add or hide a columns as necessary
- Suggested columns:
  - Task Name
  - % Complete
  - Duration
  - Work
  - Start
  - Finish
  - Resources

Exercise 1

- Setting project defaults

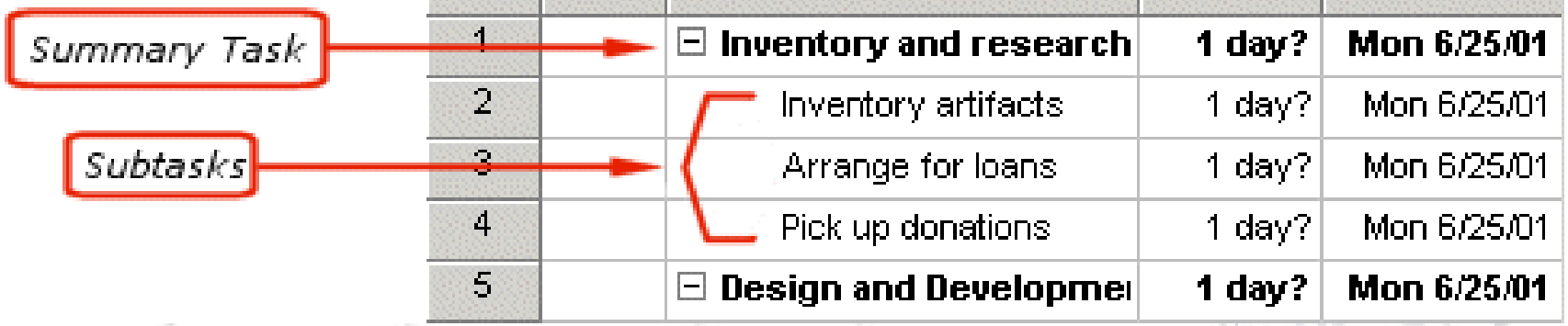
Tasks

- Project Summary Task
- Summary Tasks
- Sub-tasks
- Task Types
  - Fixed Units
  - Fixed Work
  - Fixed Duration (recommended)
  - Effort driven

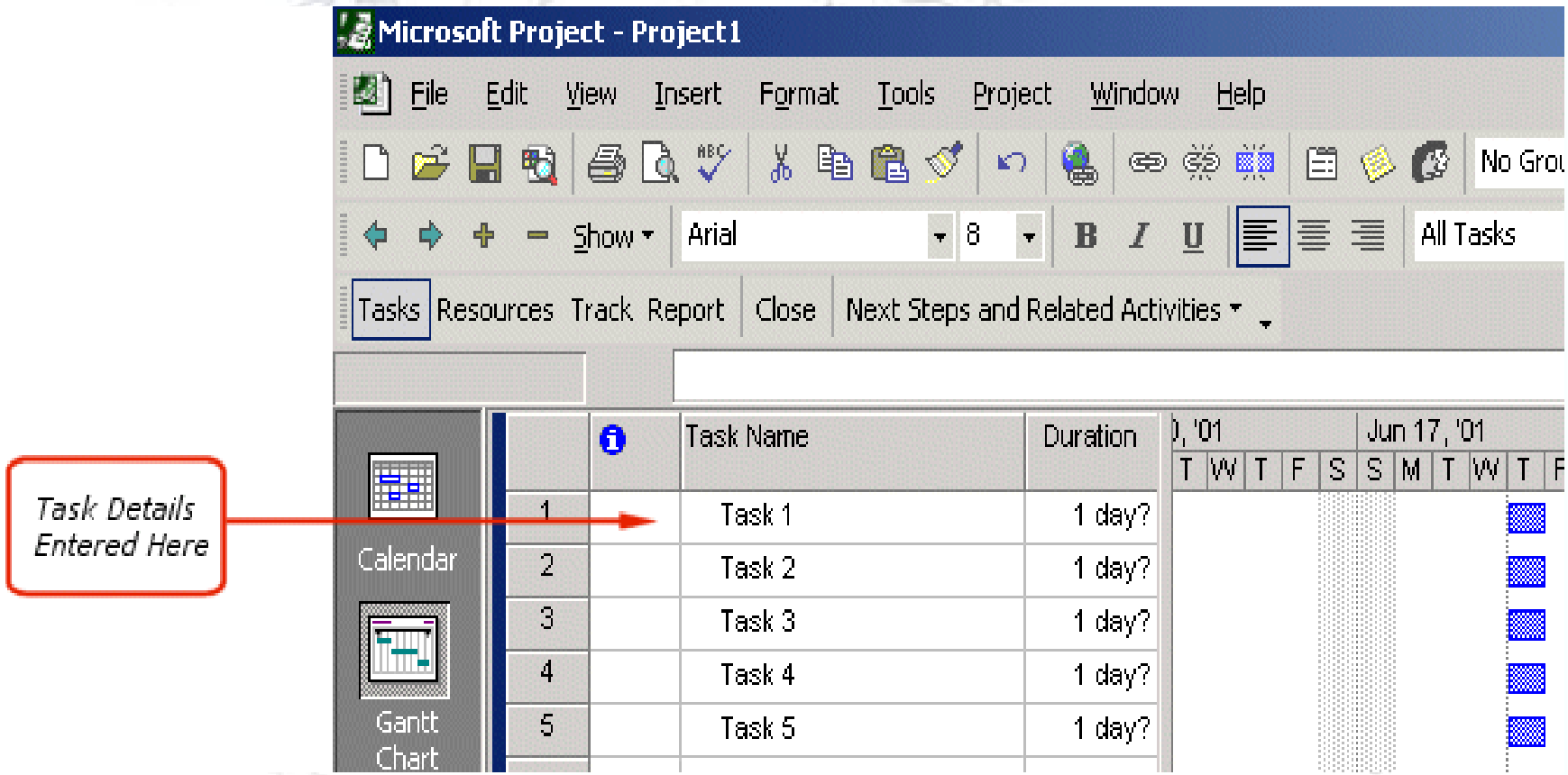
Project Summary Task

- The project summary task has unique characteristics:
  - ID = 0
  - Unique ID = 0
  - Outline Level = 0
  - Summary – Yes
- Only project summary tasks can be created at Outline Level 0.

Summary Tasks



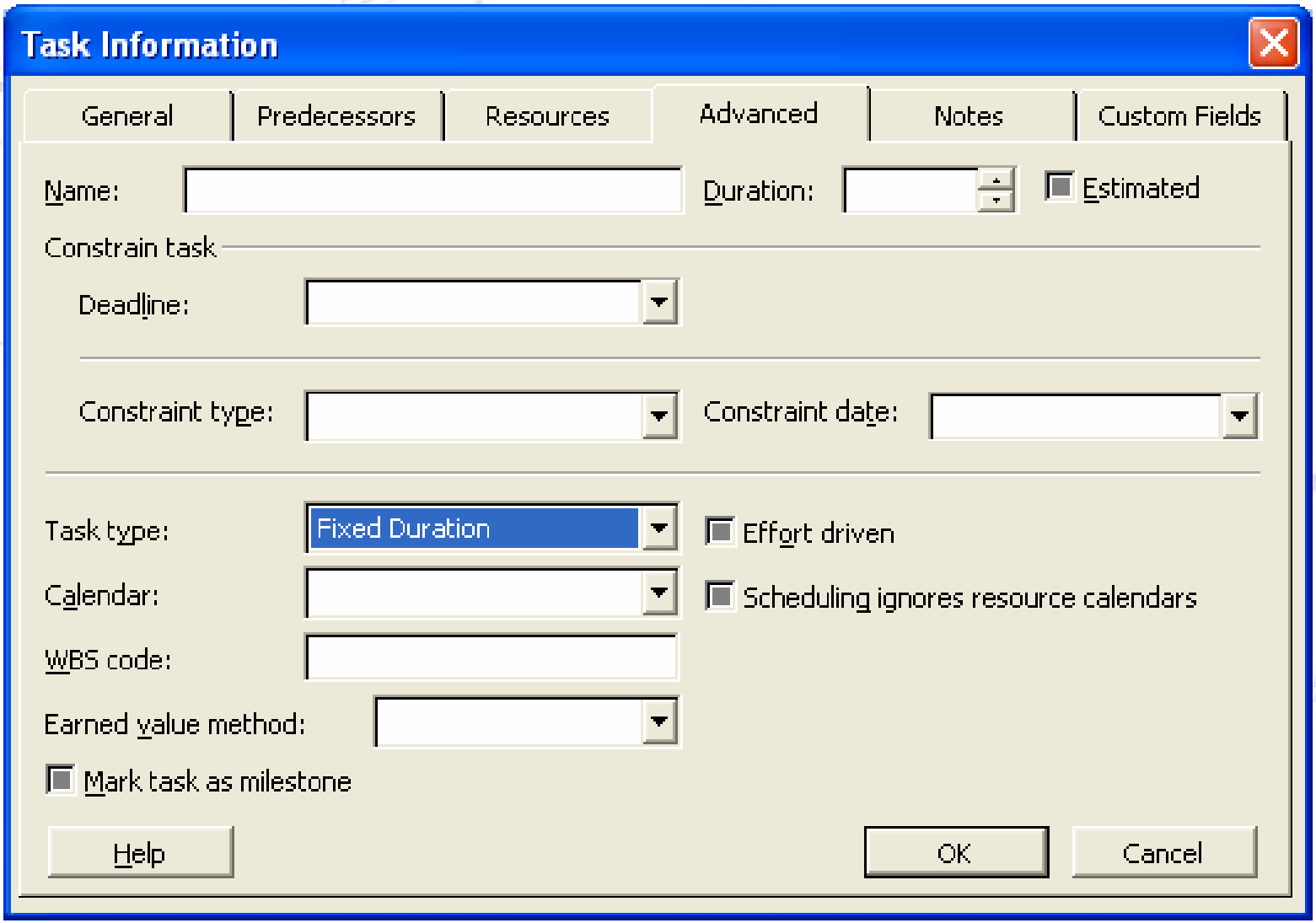
Subtasks


Microsoft Project - Project1
File Edit View Insert Format Tools Project Window Help
Show Arial 8 All Tasks
Tasks Resources Track Report Close Next Steps and Related Activities
Task Name Duration
1 Task 1 1 day?
2 Task 2 1 day?
3 Task 3 1 day?
4 Task 4 1 day?
5 Task 5 1 day?
Jun 17, '01
Calendar
Gantt Chart
Task Details Entered Here

Task Types

- **Fixed units** – tasks where the resources are a fixed value & changes to the amount of work or the duration do not affect the resources
- **Fixed work** – tasks where the amount of work is a fixed value & changes to the duration or the number of resources do not affect the work.
- **Fixed duration** (recommended) – tasks where the duration is a fixed value & changes to the work or the resources don't affect the duration.
- **Effort Driven** – the duration of a task shortens or lengthens as resources are added or removed from a task while the effort (work) remains the same.

Task Types


Task Information
General
Predecessors
Resources
Advanced
Notes
Custom Fields
Name:
Duration:
Estimated
Constrain task
Deadline:
Constraint type:
Constraint date:
Task type:
Fixed Duration
Effort driven
Calendar:
Scheduling ignores resource calendars
WBS code:
Earned value method:
Mark task as milestone
Help
OK
Cancel

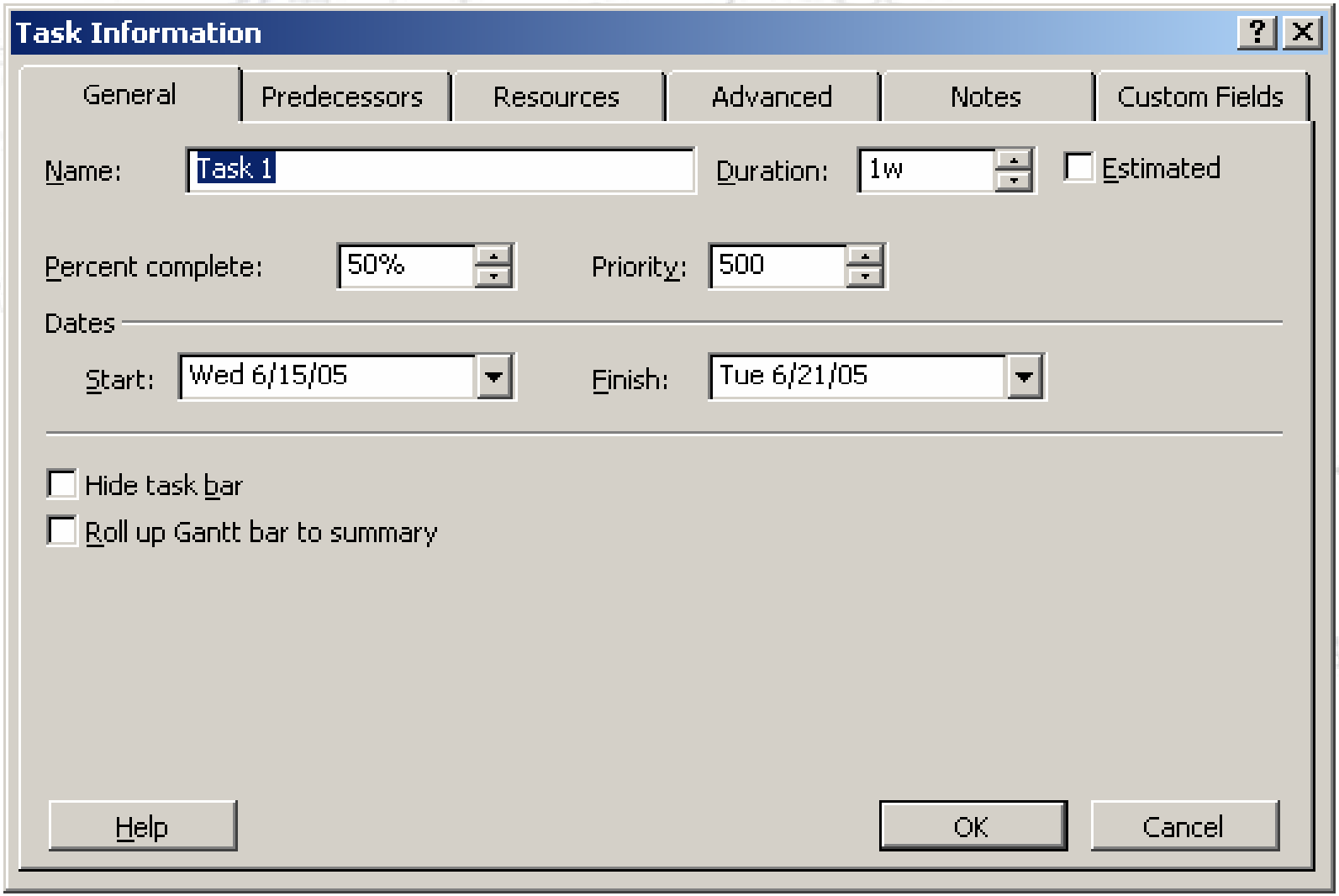
Exercise 2

- Entering tasks

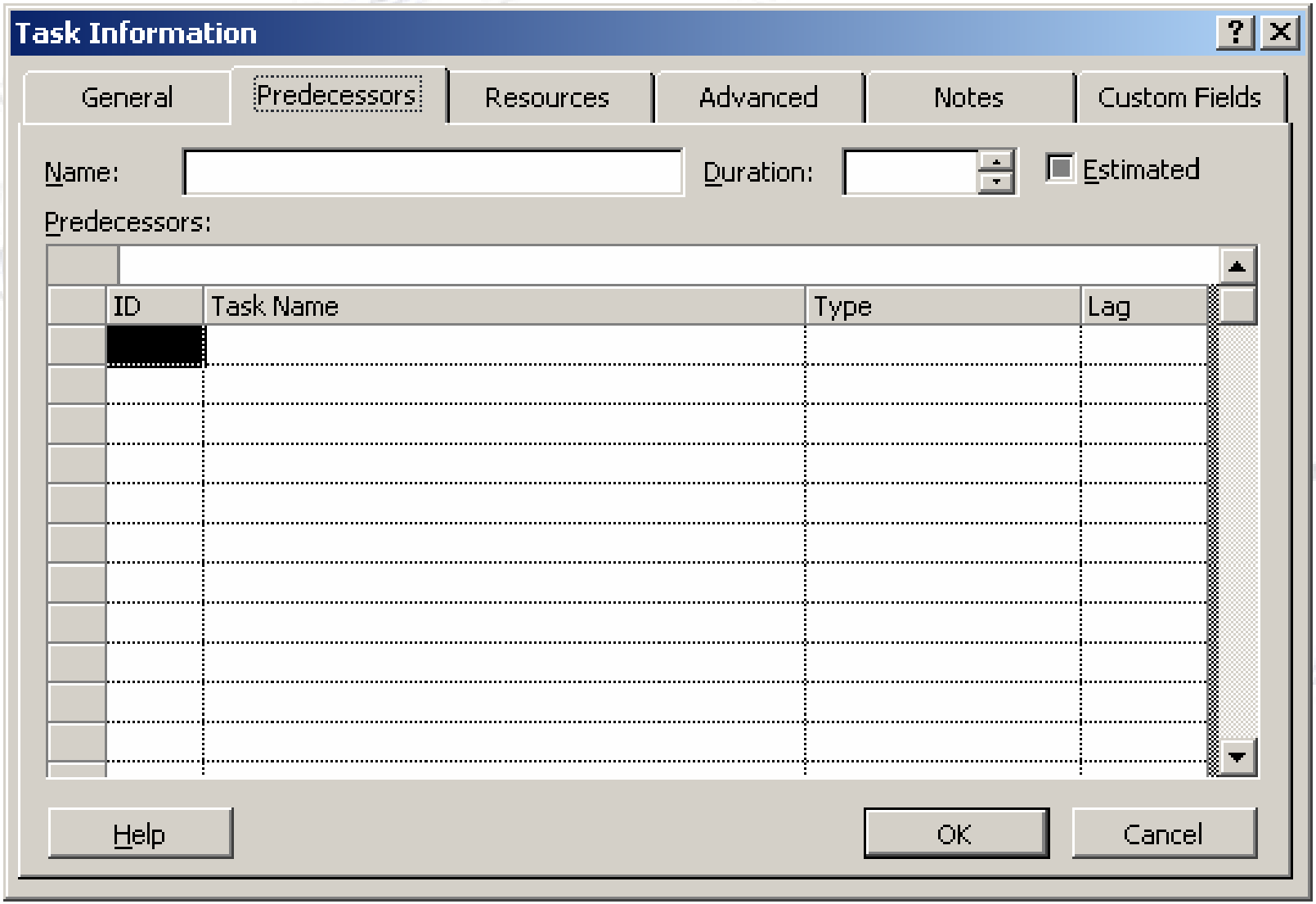
Task Information

- Task Information Form
- Milestone tasks
- Durations
- Constraints
- Dependencies (predecessors)

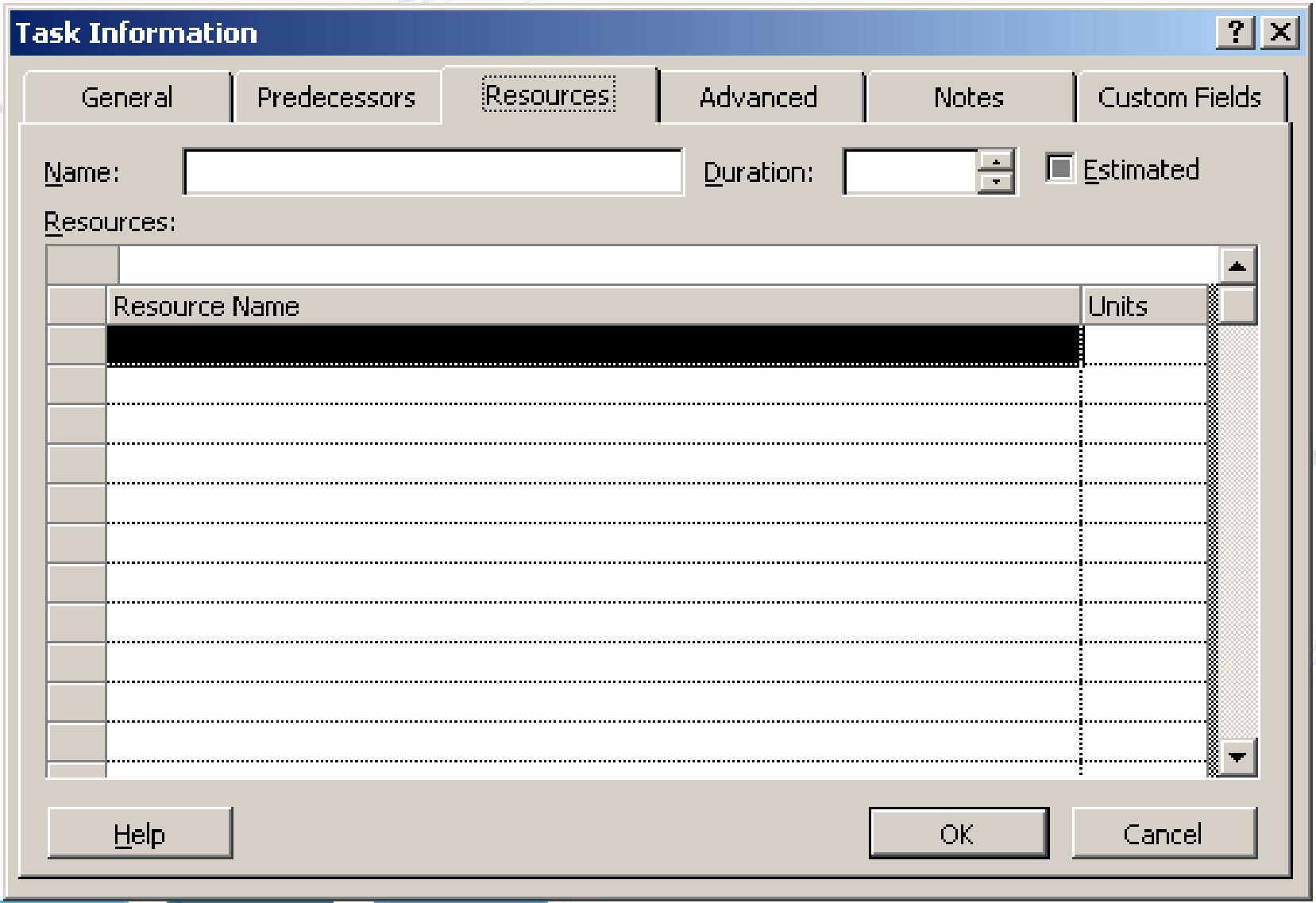
Task Information Form



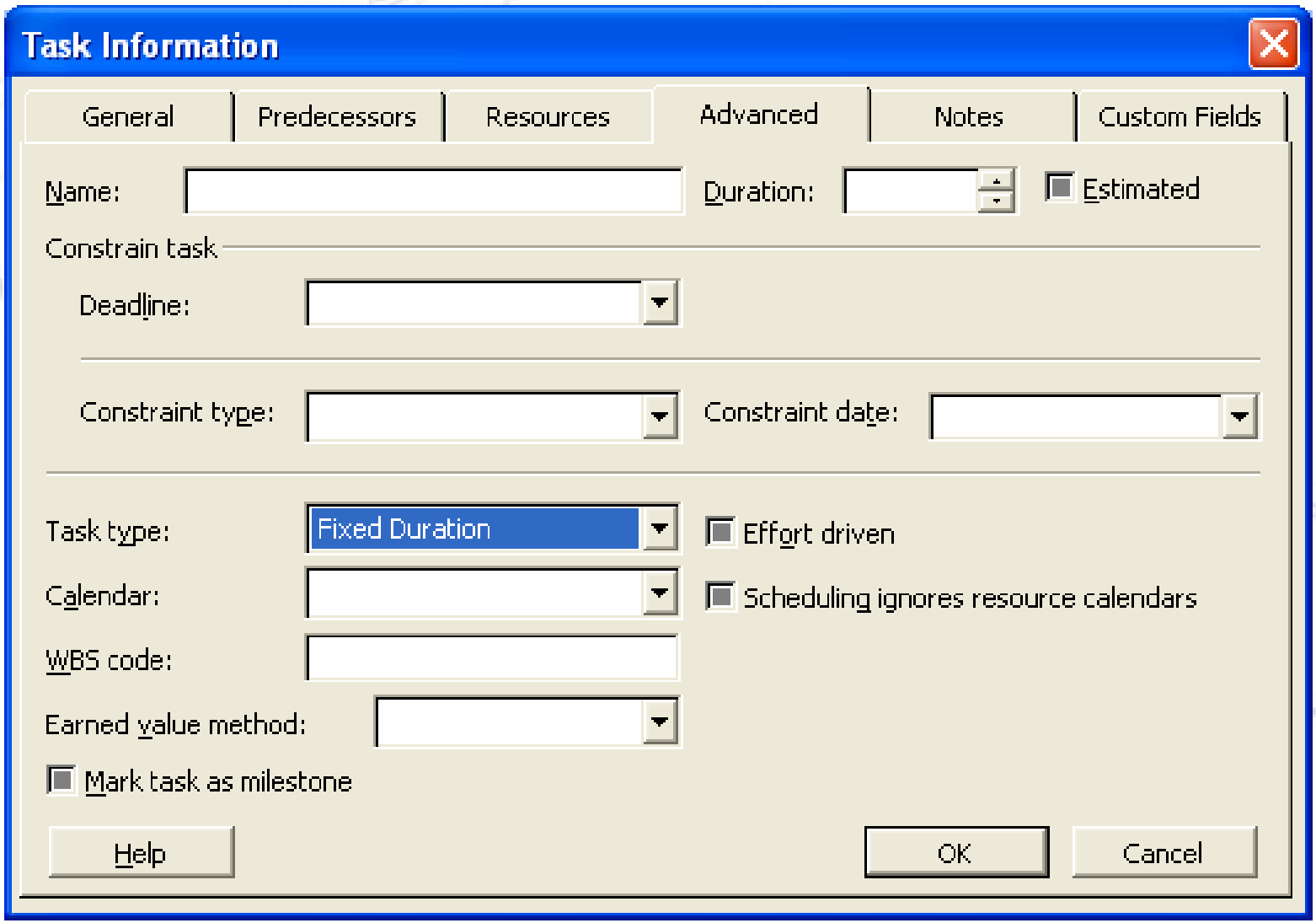
Task Information Form



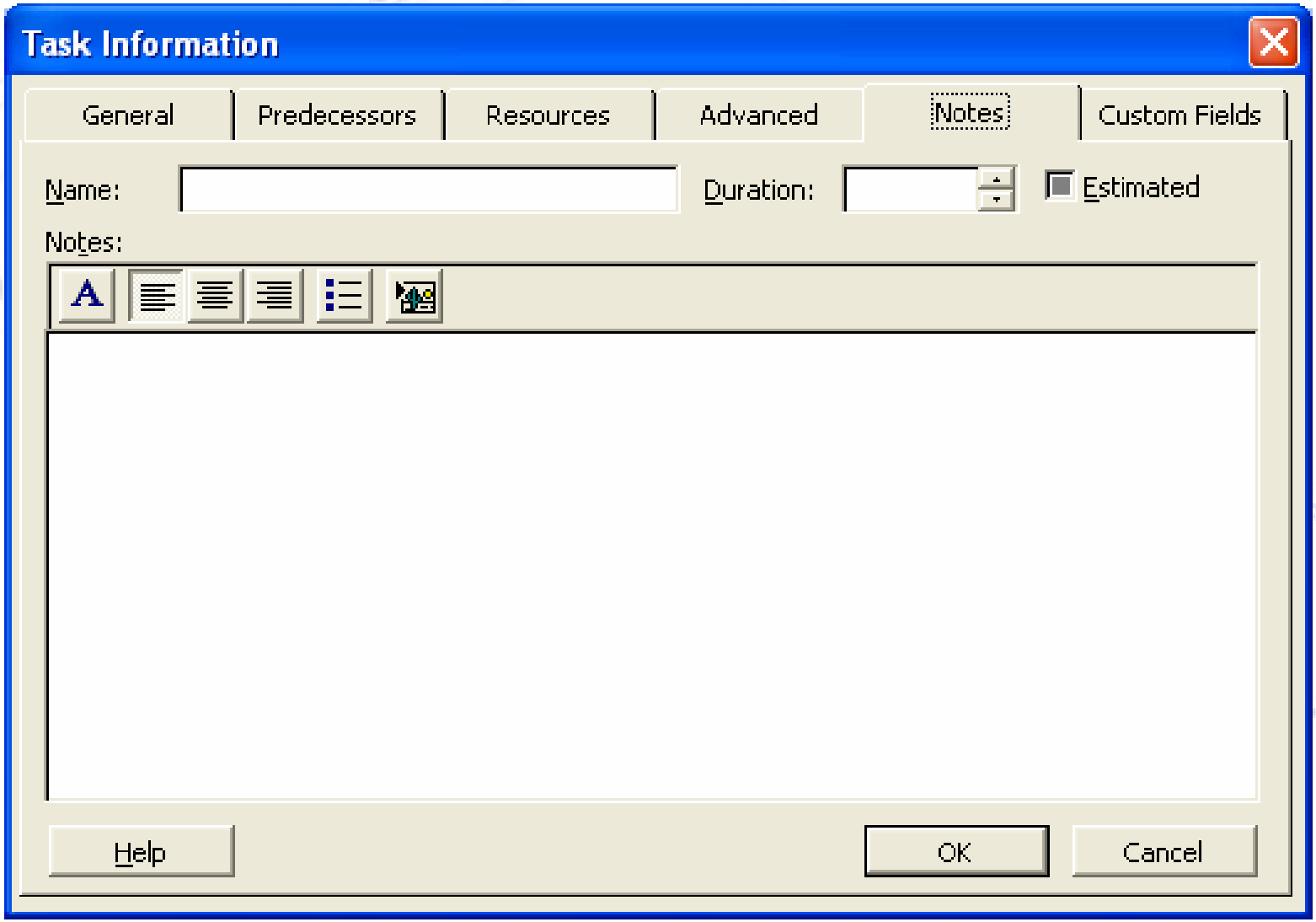
Task Information Form



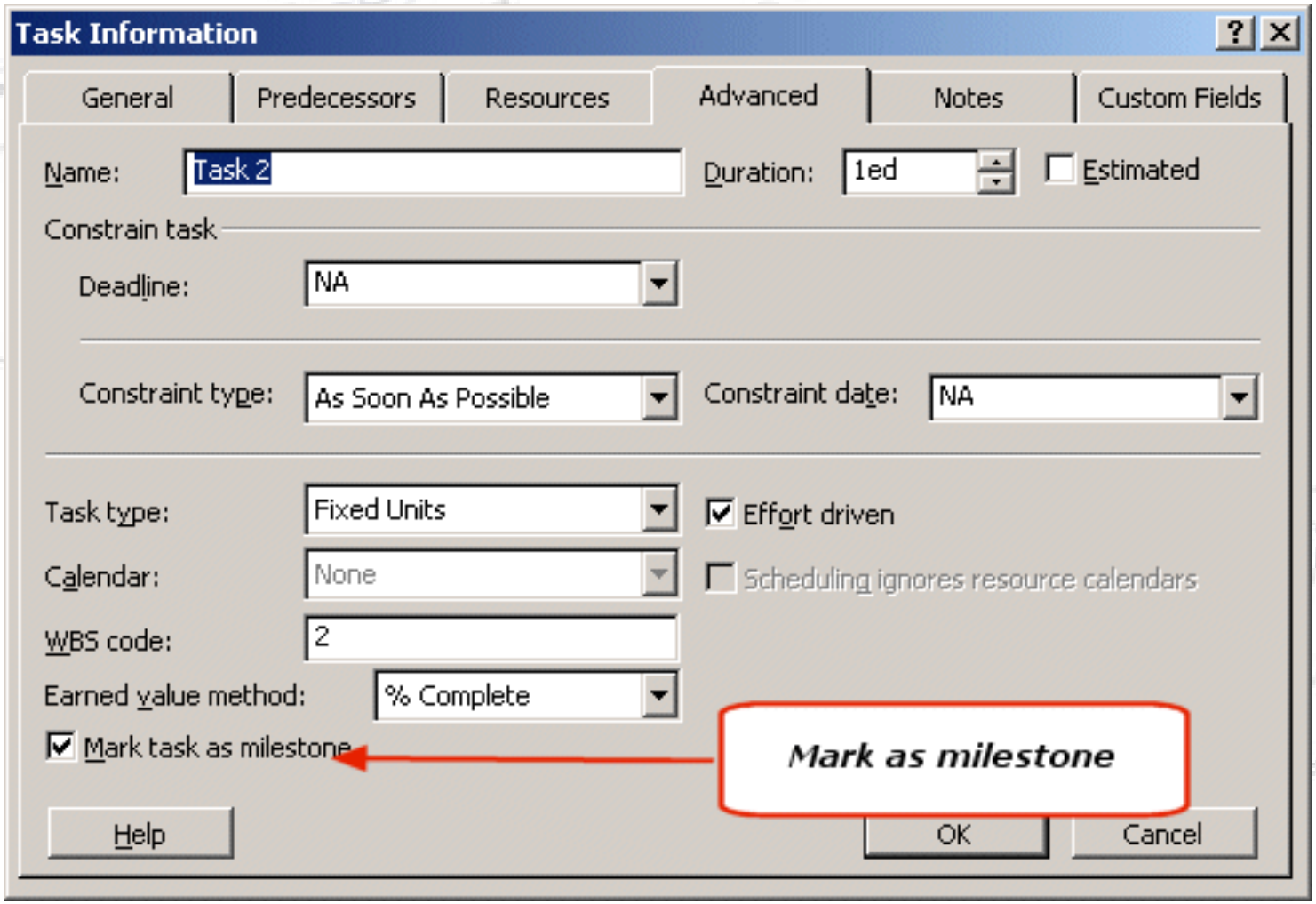
Task Information Form



Task Information



Milestones


Task Information
General
Predecessors
Resources
Advanced
Notes
Custom Fields
Name: Task 2
Duration: 1ed
Estimated
Constrain task
Deadline: NA
Constraint type: As Soon As Possible
Constraint date: NA
Task type: Fixed Units
Effort driven
Calendar: None
Scheduling ignores resource calendars
WBS code: 2
Earned value method: % Complete
Mark task as milestone
Mark as milestone
Help
OK
Cancel

Task Duration

- When entering task durations, enter the amount of time expected to complete the task
- Duration abbreviations
  - M = Minutes
  - H = Hours
  - D = Days
  - W = Weeks
  - M = Months

Task Constraints

- Field dependencies
- Constraint types
  - As late as possible
  - As soon as possible
  - Finish no earlier than
  - Finish no later than
  - Must finish on
  - Must start on
  - Start no earlier than
  - Start no later than

Task Dependencies

- Predecessors
  - Finish to Start (FS default)
  - Start to Finish (SF)
  - Start to Start (SS)
  - Finish to Finish (FF rarely used)

Exercise 3

- Setting constraints, durations and predecessors

Resources

- Resource types
- Entering resources
- Assigning resources to a task
- Understanding “work”

Resource Types

- Work (people)
- Material (expenditures)
- Rates (hourly rate or cost of hardware)

Entering Resources

- Best done after tasks are entered and linked
- Assign names and work effort for each individual
- Duration is the length of time the task will take to complete, entered in days
- Work is the amount of effort needed to complete the task, entered in hours

Exercise 4

- Entering Resources

Tracking

- Base lining the project
- Entering actual information

Base lining the Project

- Purpose of base lining
- How to do it
  - Tools, Tracking, Save Baseline
  - Remember to baseline the ENTIRE project!

Entering Actuals

- Task sheet view
- Enter actual start date
  - Break links as needed
- Enter actual duration
- Enter actual time commitments
- Set task completion at 100%
- Sequence is VERY important

Exercise 5

- Base lining
- Entering Actuals

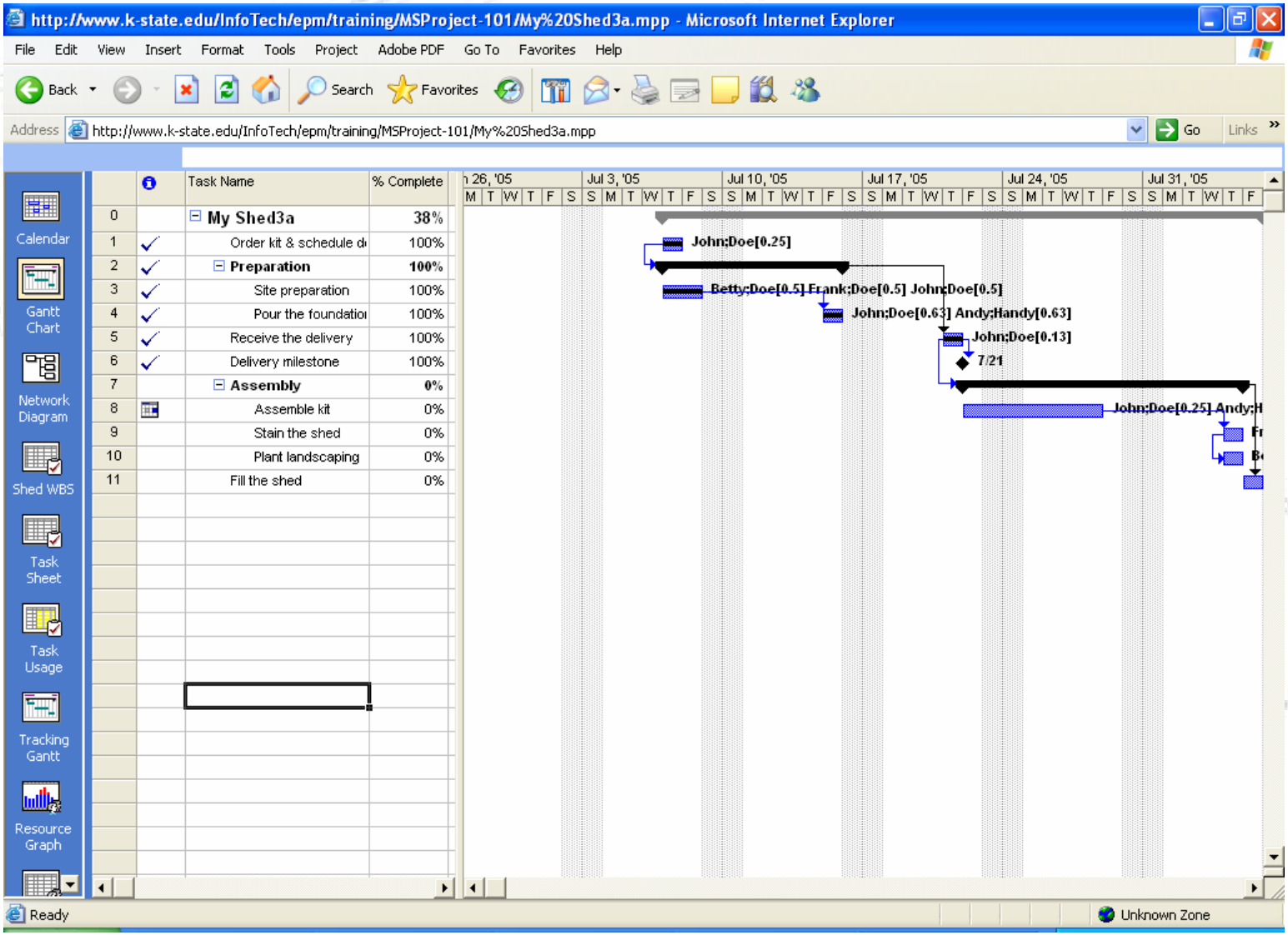
Views, Tables & Filters

- Views
  - Task Views
  - Gantt Chart
  - Tracking Gantt Chart
  - Custom Views
- Tables
- Filters and Groups

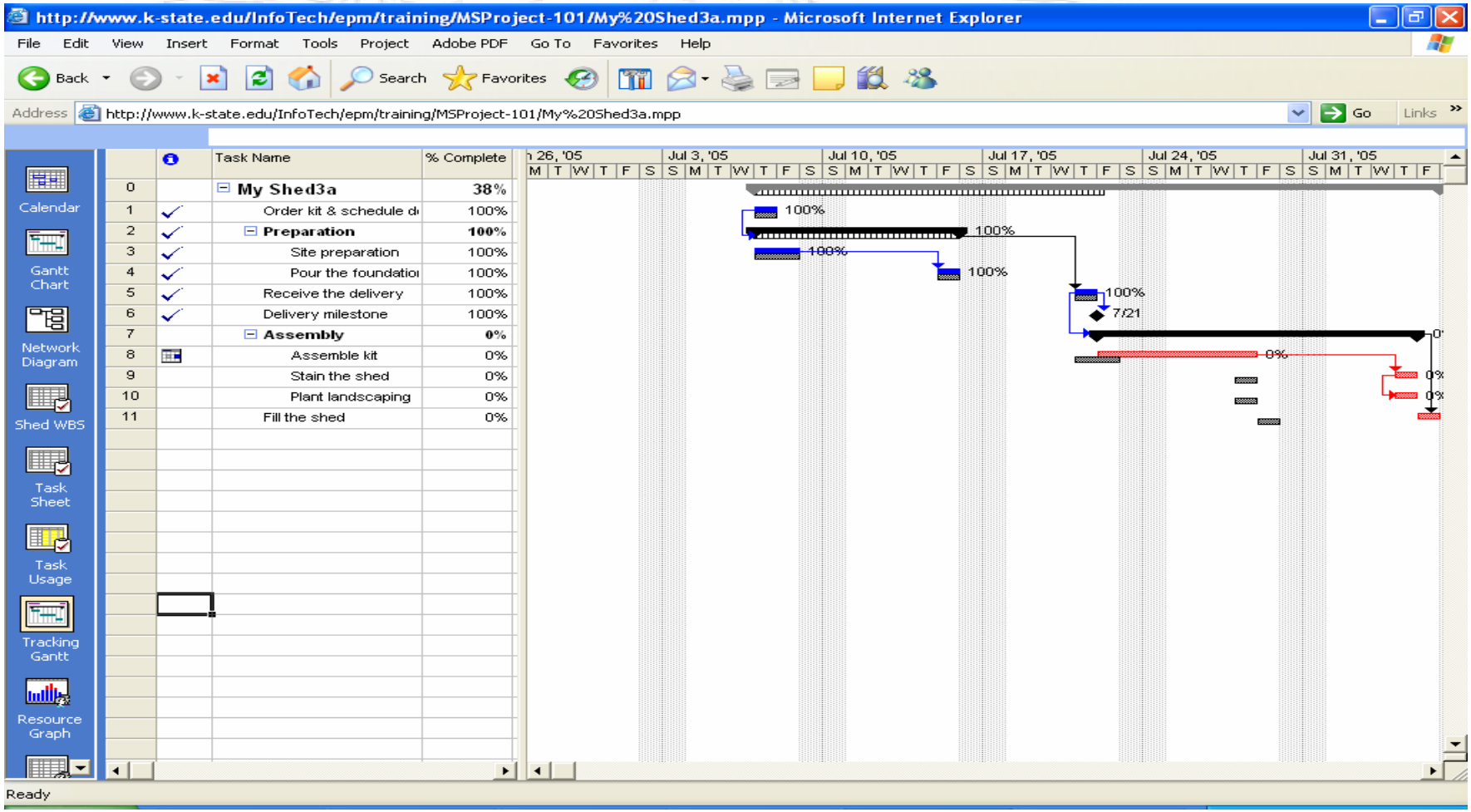
Task Sheet

- Task Sheet
- Used for reporting
- Basis for most custom forms

Gantt Chart View



Tracking Gantt



Custom Views

- Views are made up of
  - Tables
  - Filters
  - Groupings
- It is highly recommended that you copy the view AND any tables, filters and groups that are used to achieve that view.

Tables

- A table is the actual spreadsheet presentation of the rows and columns
- It stores which fields you see and how the columns are ordered

Filters & Groups

- Filters - a way to select a subset of tasks to be shown in a view.
- Groups - a way to organize rows based on field content.
- Filters and groups can be used together to order the data or they can be used independently.
- Filters and groups can be created using one or more conditions

Exercise 6

- Views

Effort-Driven

- Only comes into play after the initial resource assignments have been made
- Work stays constant
- When resources (manpower) are assigned or removed from a task, Microsoft Project will extend or shorten the duration of the task to accommodate change in resources
- This is the default option for new tasks

Over-allocation

- Situation when more hours of a resource are allocated than are available
- Identifying Over-allocated Resources
  - Special leveling indicator 
  - Resource Usage View – over-allocated resources are **red**
- Over-allocation can be resolved by leveling project

Leveling

- Resolving resource conflicts or over-allocations by delaying or splitting certain tasks.
- During leveling, assignments are rescheduled according to the resource availability profiles, assigned units, and resource calendars, as well as the task's duration and constraints.
- It is instigated either automatically or (more commonly) by the command level now.
- Tools | Level Resources . . . (hour by hour)