



Mansoura University
Faculty of Computers and Information
Department of Computer Science
Second Semester- 2024 -2025



Software Cost Estimation

Grade : 4 (SWE)

Week : 1

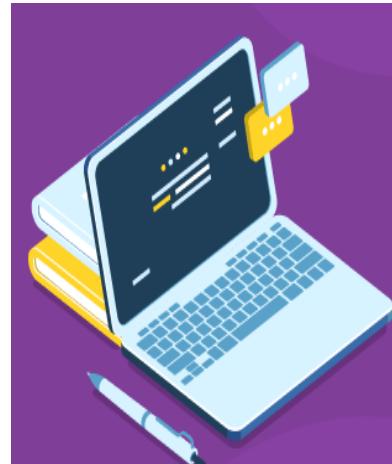
Eng. Asmaa Naguib

Software Cost Estimation



Agenda

- Project Planning
- Software pricing
- Project Scheduling

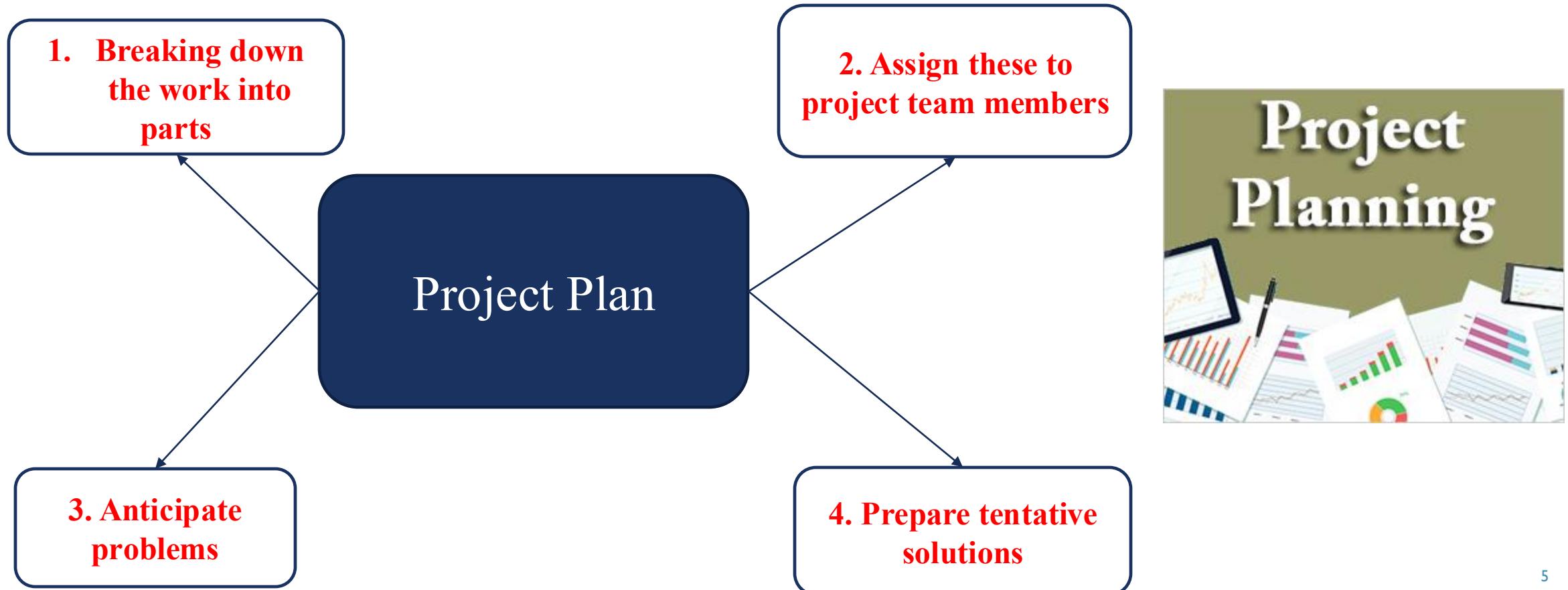


COCOMO Model in
Software
Engineering

Project Planning



Project planning



Planning Stages

■ **Proposal planning**

During this phase , Providing information that will be used in setting a price for the system to customers.

Project pricing involves estimating how much the software will cost to develop such as :

- staff costs
- Hardware costs
- Software costs



■ **Project Startup planning**

- This plan is the basis for project resource allocation.
- A startup plan is still needed for agile development to allow resources to be allocated to the project.

■ **Development planning**

- The project plan should be regularly amended.

Software Pricing

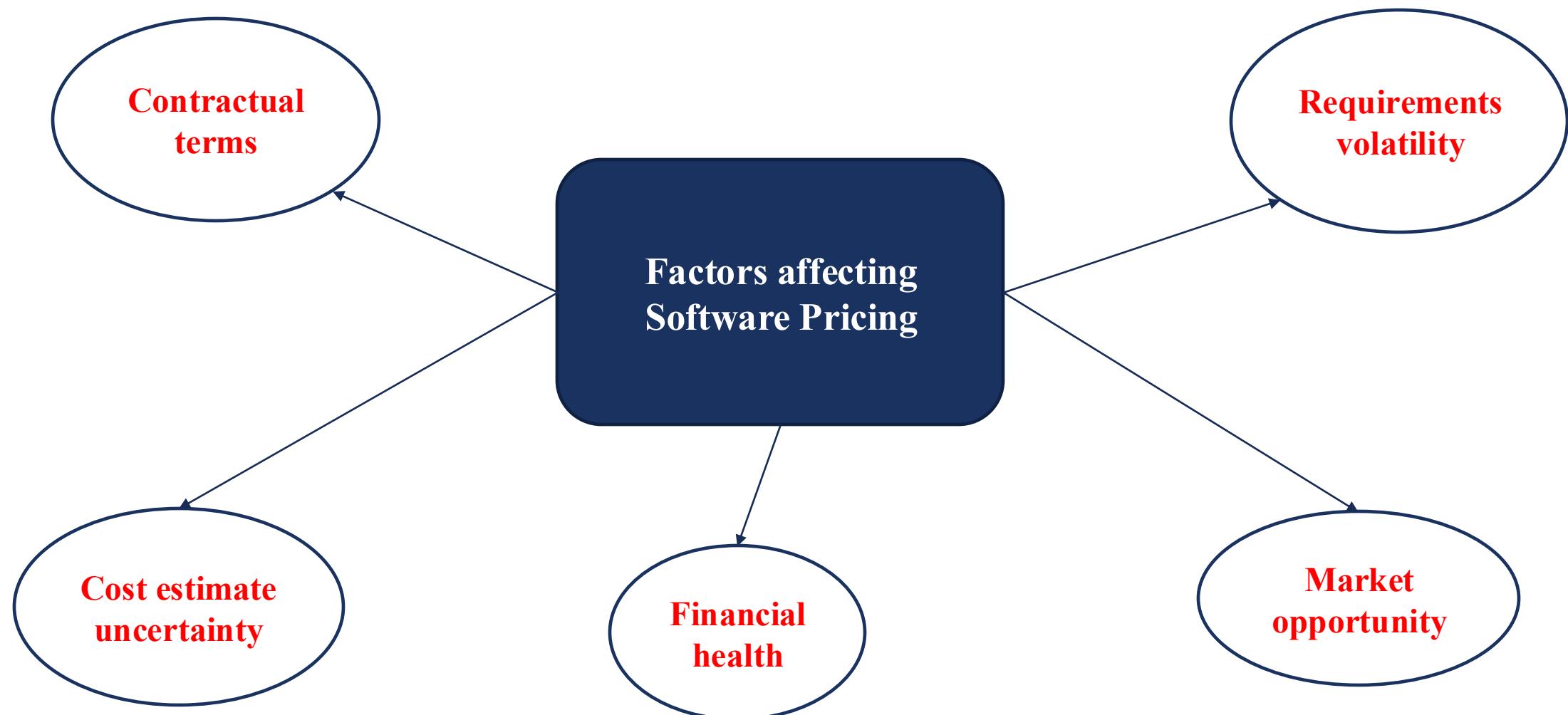


Software Pricing

- Estimates are made to discover the cost of **hardware , software ,travel , training** and **effort** to the developer, of producing a software system.
- Also, there are **organizational, economic, political** and **business** considerations influence the price charged.



Factors affecting Software Pricing



Pricing to win

- The software is **priced** according to what the software developer **believes** the buyer is willing to pay.
- If this is **less than** the development **costs**, the software functionality may be **reduced**.
- Additional costs may be added as the requirements change and these may be priced at a higher level to make up the shortfall in the original price.



Project Scheduling

Project Schedule Management



Project Scheduling

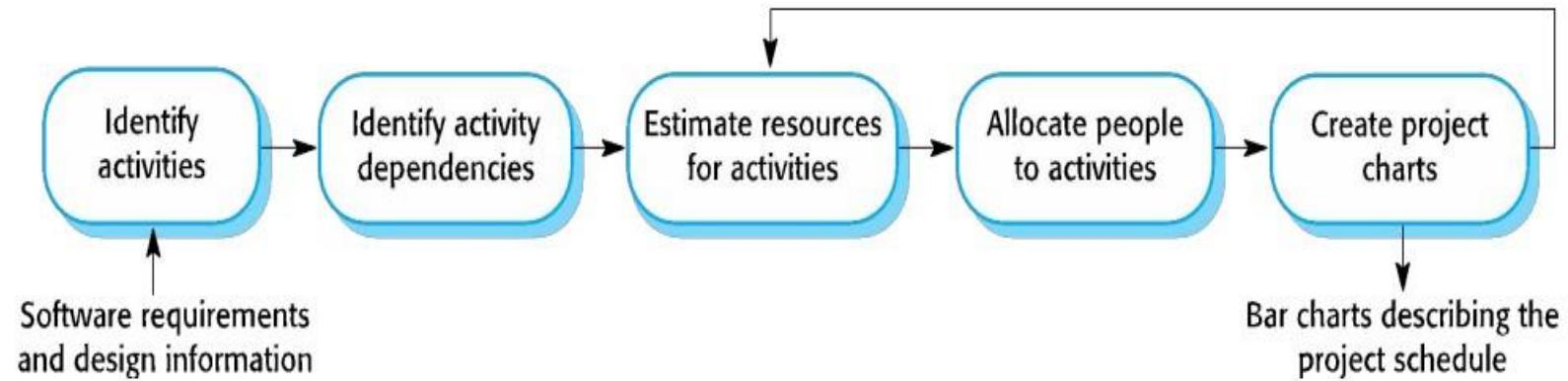
- **Project scheduling** is the process of deciding how the work in a project will be organized as **separate tasks**, and when and how these tasks will be executed.

The Things to be considered while estimating schedules:

- The **calendar** time needed to complete each task.
- The **effort** required and who will work on the tasks.
- The **resources** needed to complete each task.
- The required **travel budget**.
- Organize tasks concurrently to make optimal use of **workforce**.
- **Minimize** task **dependencies** to avoid delays.
- Define **Milestones** and **deliverables** to assess progress.



The project scheduling process



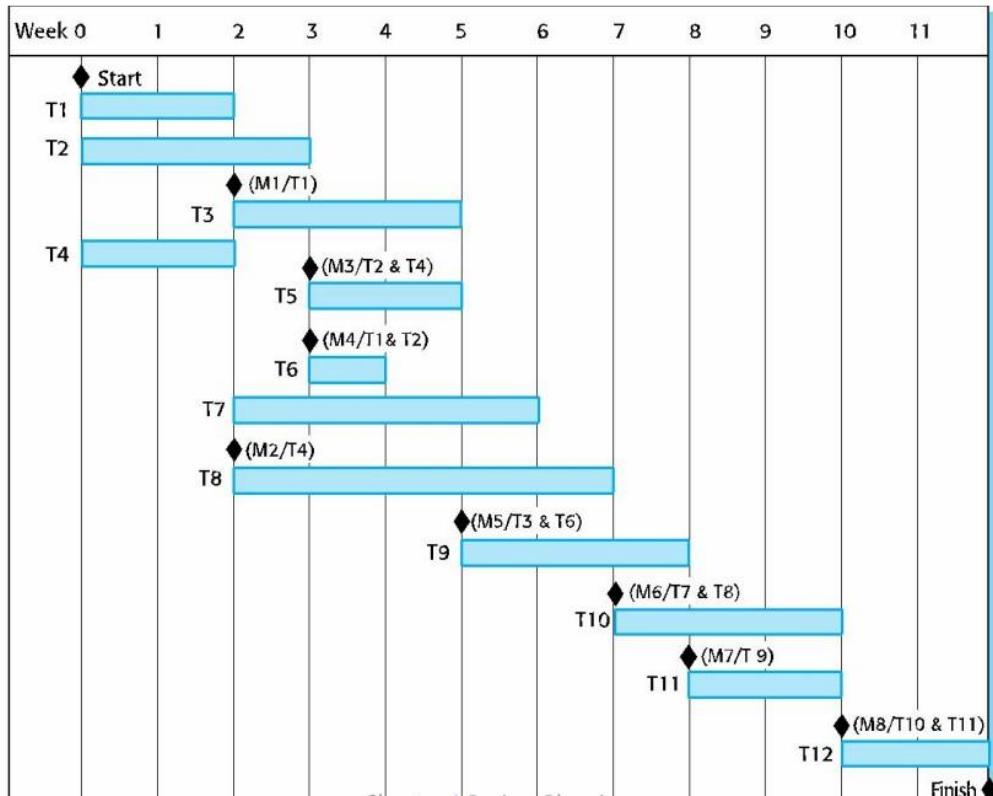
Schedule presentation

- The following Figure sets out a number of tasks, their durations, and their dependencies. Draw a bar chart showing the project schedule.

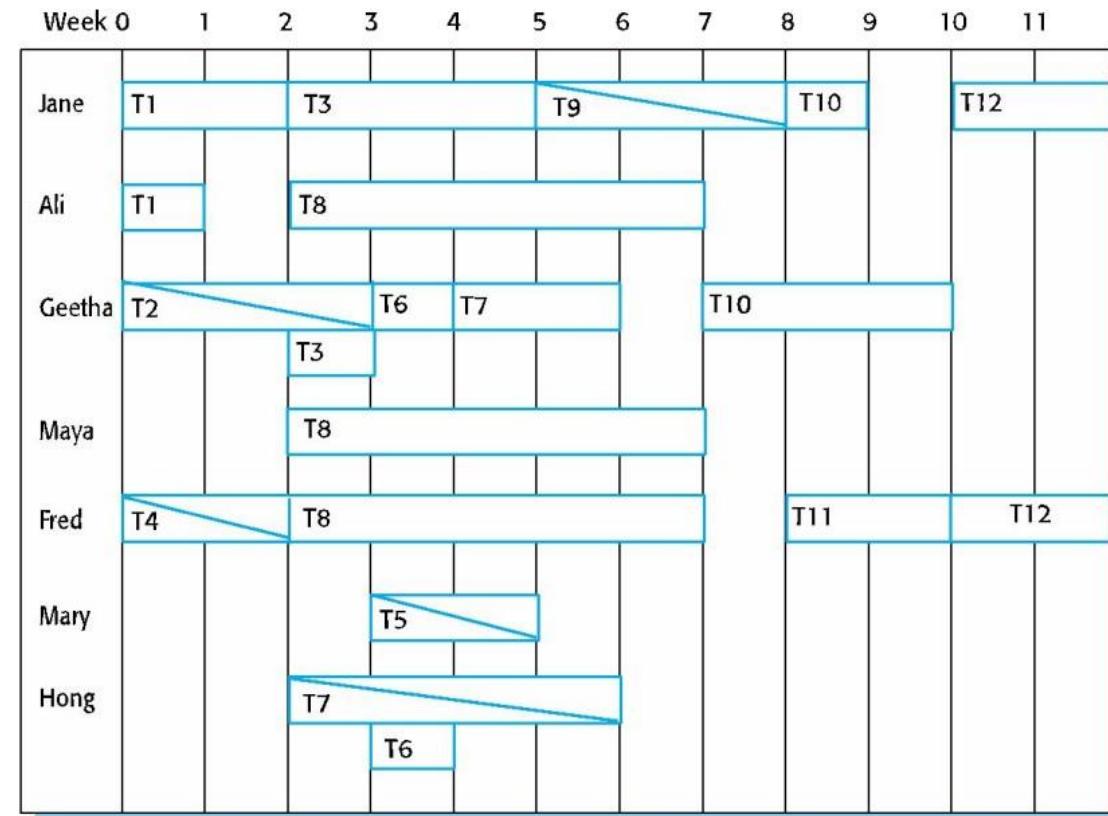
Task	Effort (person-days)	Duration (days)	Dependencies
T1	15	10	
T2	8	15	
T3	20	15	T1 (M1)
T4	5	10	
T5	5	10	T2, T4 (M3)
T6	10	5	T1, T2 (M4)
T7	25	20	T1 (M1)
T8	75	25	T4 (M2)
T9	10	15	T3, T6 (M5)
T10	20	15	T7, T8 (M6)
T11	10	10	T9 (M7)
T12	20	10	T10, T11 (M8)

Activity bar chart

Tasks Chart



Staff Allocation Chart



Draw a Chart

- The following Figure sets out a number of tasks, their durations, and their dependencies. Draw a bar chart showing the project schedule.
- The Figure shows the task durations for software project activities. Assume that a serious, unanticipated setback occurs, and instead of taking 10 days, task T5 takes 40 days. Draw up new bar charts showing how the project might be reorganized

Task	Duration	Dependencies
T1	10	
T2	15	T1
T3	10	T1, T2
T4	20	
T5	10	
T6	15	T3, T4
T7	20	T3
T8	35	T7
T9	15	T6
T10	5	T5, T9
T11	10	T9
T12	20	T10
T13	35	T3, T4
T14	10	T8, T9
T15	20	T12, T14
T16	10	T15

Quick Revision

1. **Describe the factors that affect software pricing. Define the “pricing to win” approach in software pricing.**
2. **Is it ethical for a company to quote a low price for a software contract knowing that the requirements are ambiguous and that they can charge a high price for subsequent changes requested by the customer?**
3. **Define project scheduling. What are the things to be considered while estimating schedules?**





Any Question ?

Next