SNS COLLEGE OF TECHNOLOGY

Coimbatore - 35

23BAT613 – Operations Management

UNIT-II Forecasting

Operations Scheduling

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Demand Forecasting

RECAP

Inventory Planning and Control

TODAY'S TOPIC:

Operations Scheduling
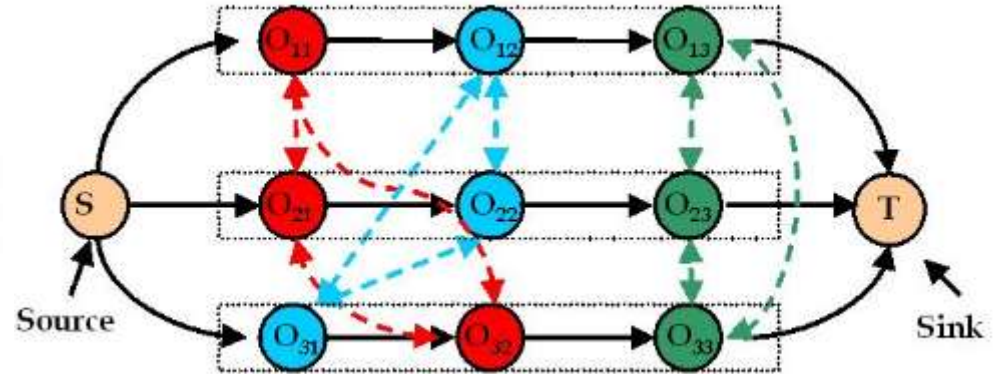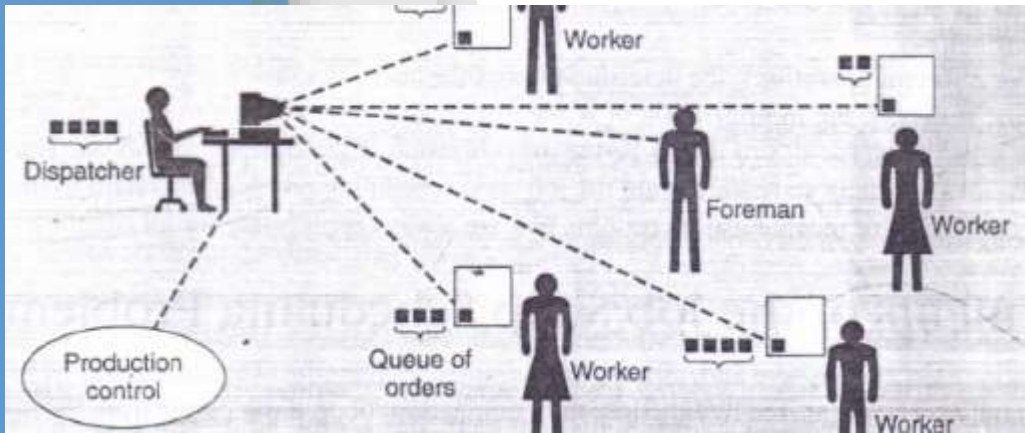
Operations Scheduling - Meaning

The primary goal of operations scheduling is to optimize the use of resources while meeting operational objectives such as minimizing costs, maximizing throughput, meeting deadlines, and ensuring customer satisfaction.

In simpler terms, operations scheduling is about answering questions like:

What tasks need to be done?

In what order should they be completed?

When should they start and finish?

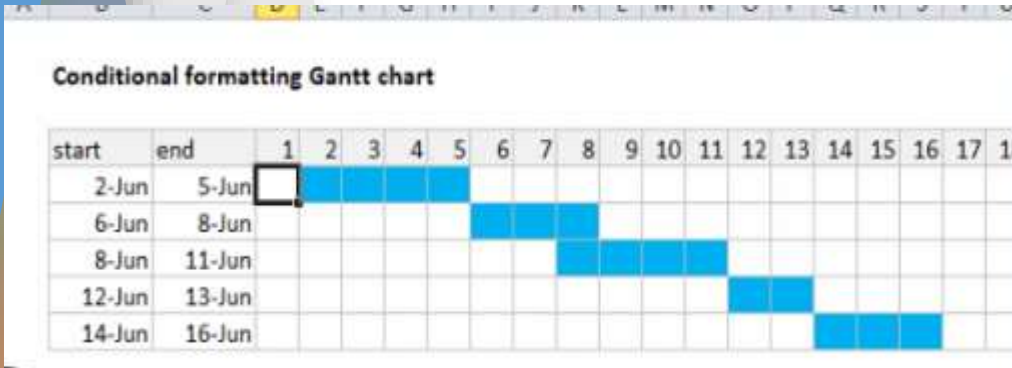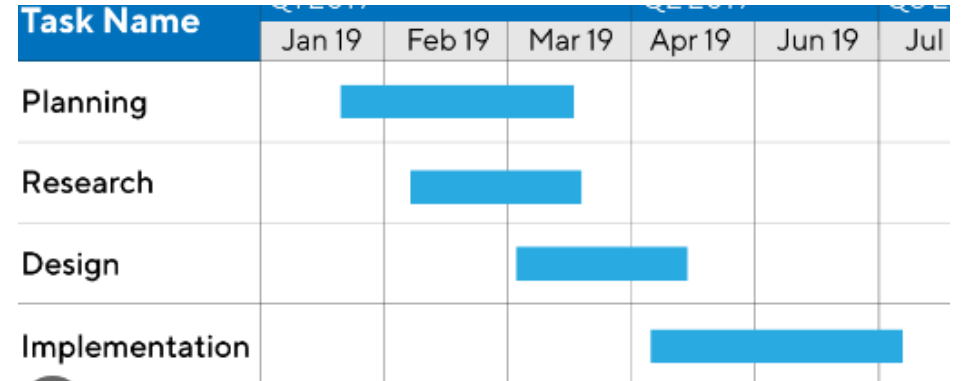What resources are needed for each task?

Operations Scheduling

Operations scheduling is the process of planning and organizing tasks, activities, resources, and timelines to ensure efficient and effective operation of a system or process. It involves determining the sequence and timing of activities to achieve specific objectives within given constraints such as time, cost, and resource availability.

Operations Scheduling -Types

- o **Task/Activities**
- o **Timeline**
- o **Bars**
- o **Dependencies**
- o **Milestones**

Task Name	Jan 19	Feb 19	Mar 19	Apr 19	Jun 19	Jul
Planning						
Research						
Design						
Implementation						

Conditional formatting Gantt chart

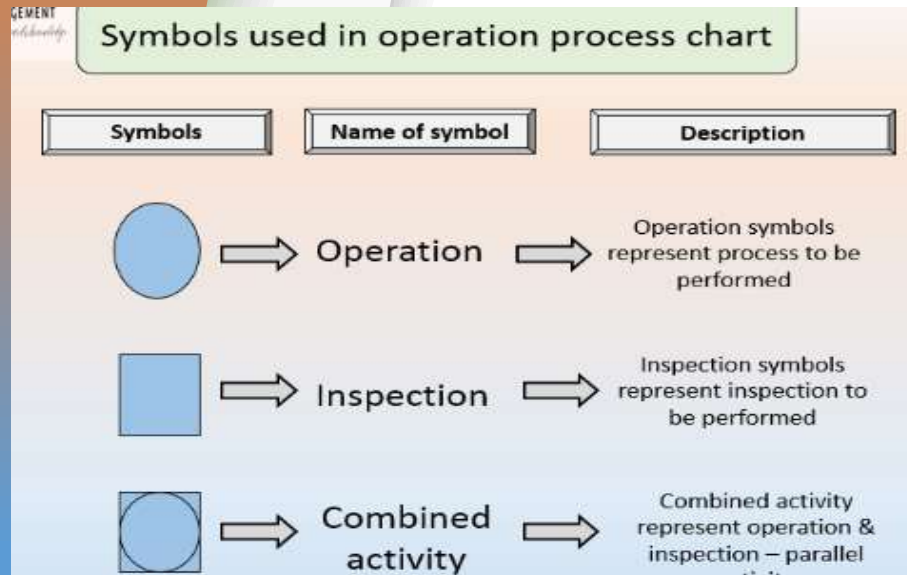| start	end	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	1
2-Jun	5-Jun																		
6-Jun	8-Jun																		
8-Jun	11-Jun																		
12-Jun	13-Jun																		
14-Jun	16-Jun																		

Operations Scheduling -Types

A PERT (Program Evaluation and Review Technique) chart is another tool used in project management, particularly for planning and scheduling complex projects
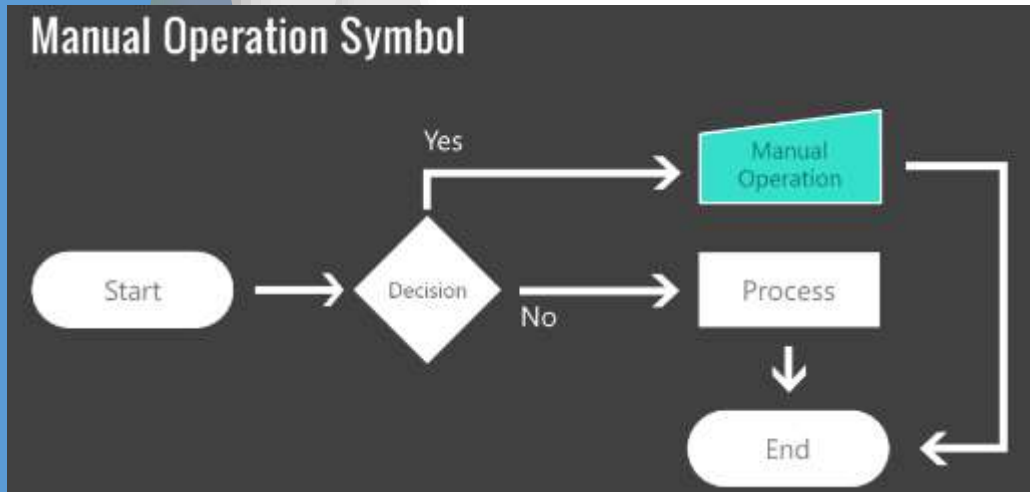
Process flow charts

Symbols used in operation process chart

Symbols	Name of symbol	Description
⬤	Operation	Operation symbols represent process to be performed
☐	Inspection	Inspection symbols represent inspection to be performed
⊚	Combined activity	Combined activity represent operation & inspection – parallel
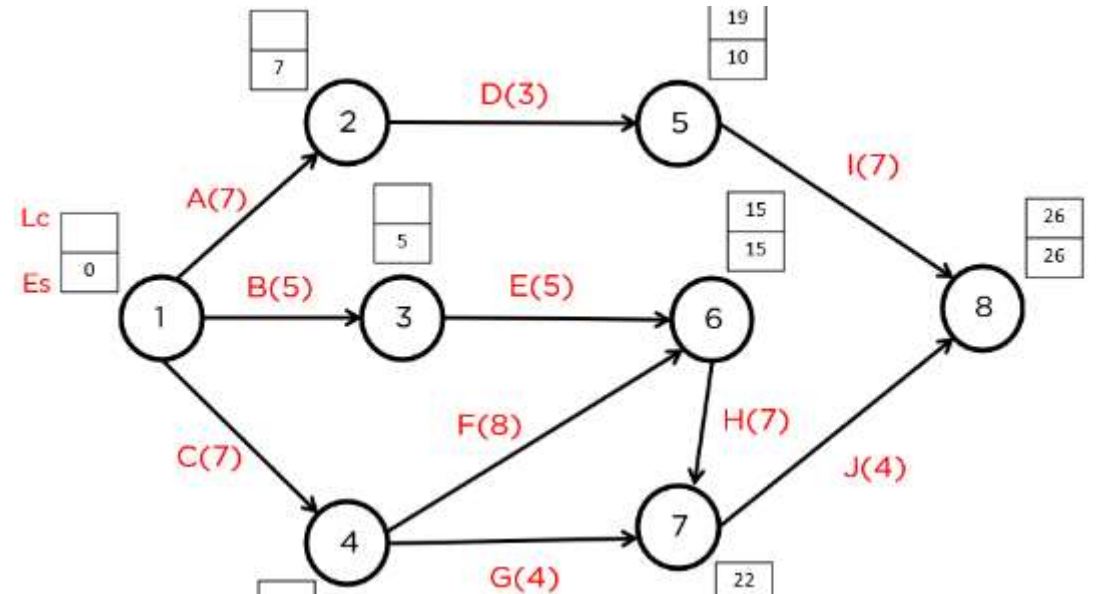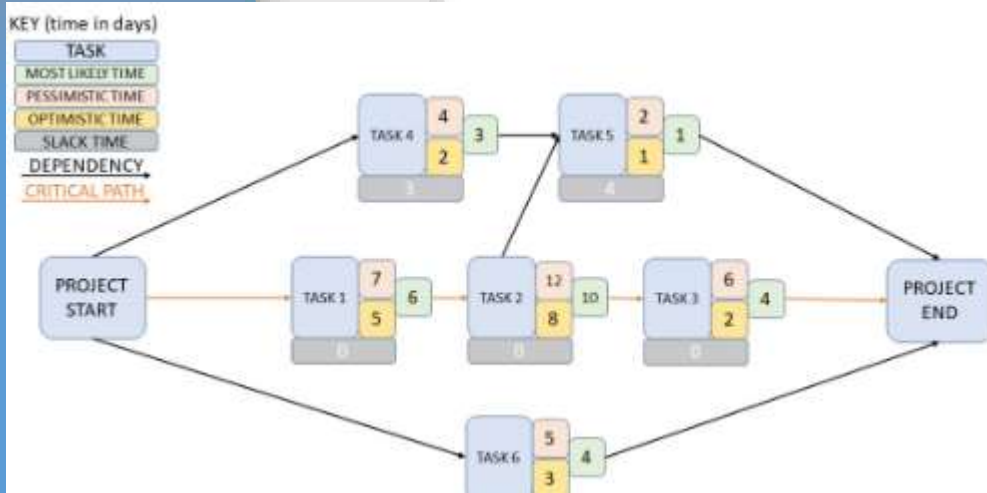
Meaning	Symbol	Description
Start or End	⬭	An elongated circle represents the start or end of a process.
Step/Flowline	➡	Represents direction of flow/process from one step to another.
Process/Operation	▭	Rectangle/square box shows instructions/actions/activity.
Decision	◆	Diamond box represents decision on particular activity.
Storage	△	Represents storage of material/parts.
Delay/Wait	◗	Indicate delay in operation/process/activity.
Document	▱	Represents supportive documents required.

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Manual Operation Symbol

Start → Decision

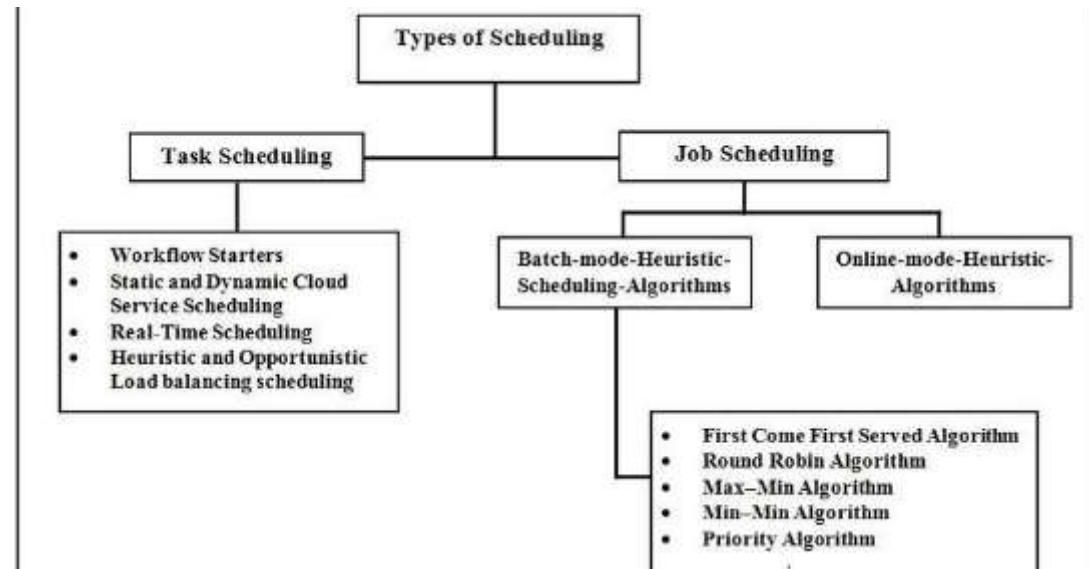Yes → Manual Operation

No → Process → End

Operations Scheduling -Types

Scheduling algorithms are used in various computing systems to allocate resources efficiently and manage tasks or processes

First Come, First Served (FCFS)
Shortest Job Next (SJN) / Shortest Job First (SJF)
Priority Scheduling
Round Robin (RR)
Multilevel Queue Scheduling

Operations Scheduling -Types

Flowcharts are graphical representations of a process, showing the steps involved and the order in which they occur. They are widely used in various fields such as software development, business processes, and engineering to illustrate workflows and decision-making processes.
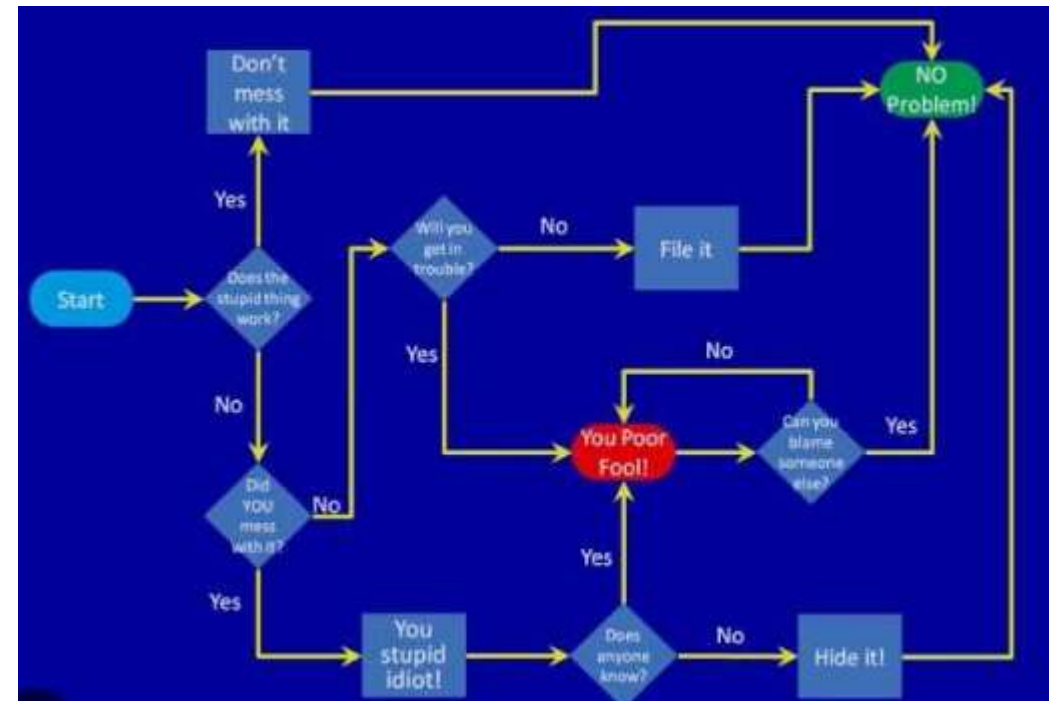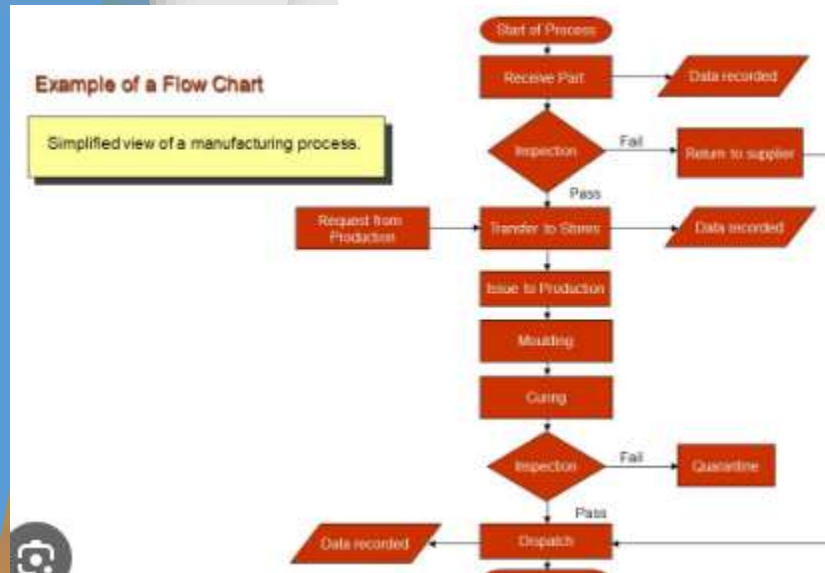
Assessment

For example, in manufacturing, operations scheduling involves determining the sequence of production tasks, allocating machinery and labor, and establishing production timelines to meet customer orders efficiently. In project management, scheduling involves creating timelines, allocating resources, and identifying dependencies between tasks to ensure the project is completed on time and within budget

Gantt Charts
PERT Charts
Flowcharts
Scheduling Algorithms

Which scheduling algorithm typically provides the shortest average waiting time for processes?

a) First Come, First Served (FCFS)

b) Shortest Job Next (SJN)

c) Round Robin (RR)

d) Shortest Remaining Time (SRT)

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Summary

Operations scheduling is the process of planning and organizing tasks, activities, resources, and timelines to ensure efficient and effective operation of a system or process. It involves determining the sequence and timing of activities to achieve specific objectives within given constraints such as time, cost, and resource availability.

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