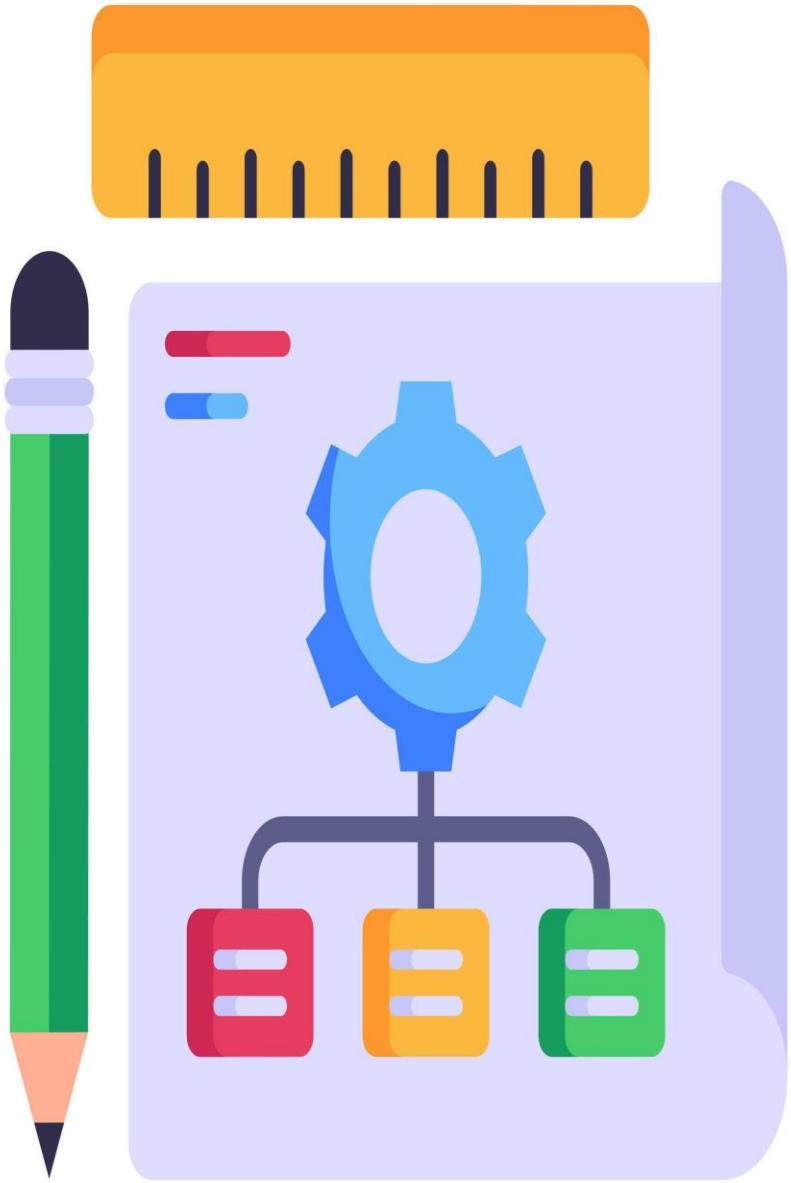
SCHEDULING OF SOFTWARE

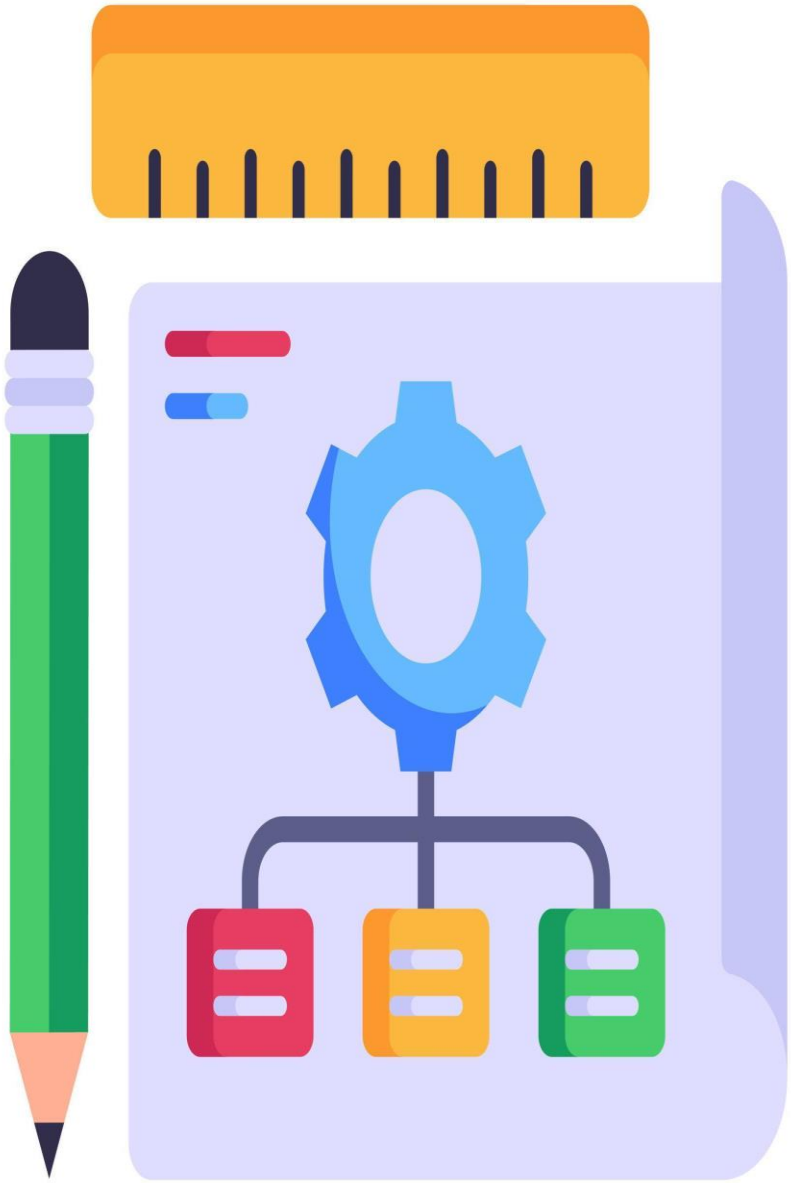
GANTT CHARTS



GANTT CHARTS

Gantt chart is a "CPM" (Critical Path Method) tools to:

- manage the tasks involved in big and complex projects
- let project managers organise time, people, equipment and money
- ensure the right people and equipment are in the right place and the right time
- allow managers to monitor the progress of a project

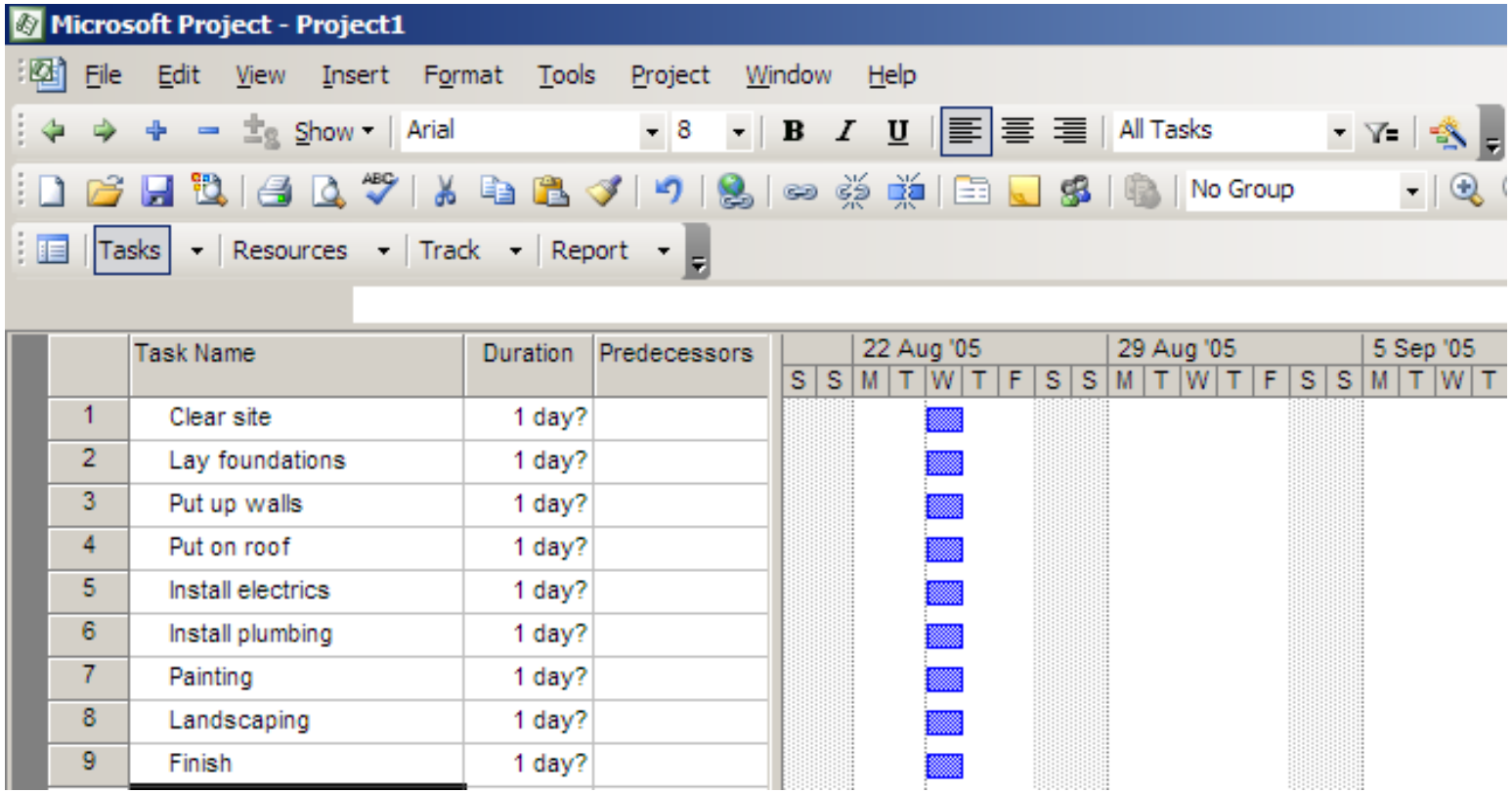


HOW TO CREATE ONE?

- Gantt chart is a timeline with tasks that can be connected to each other
- duration of an activity depicts by the horizontal bar size
- Can be created using Excel or Microsoft Project

MAKING A GANTT CHART: STEP 1

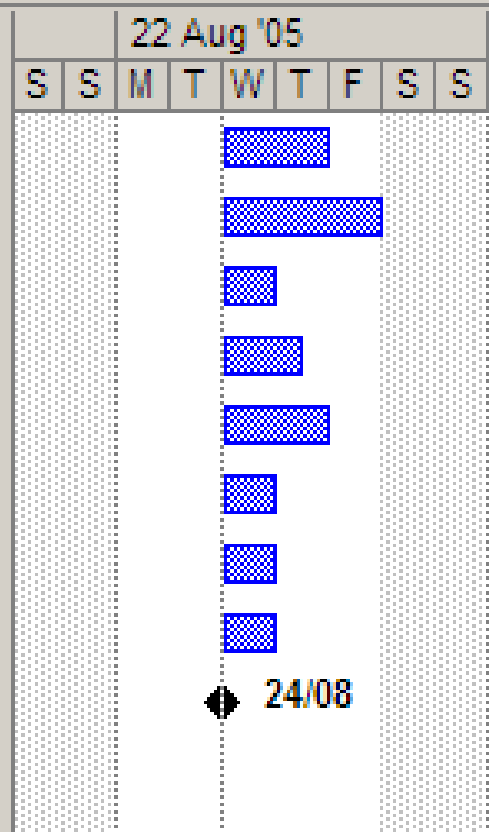
List all tasks



MAKING A GANTT CHART: STEP 2

Add the duration for every task

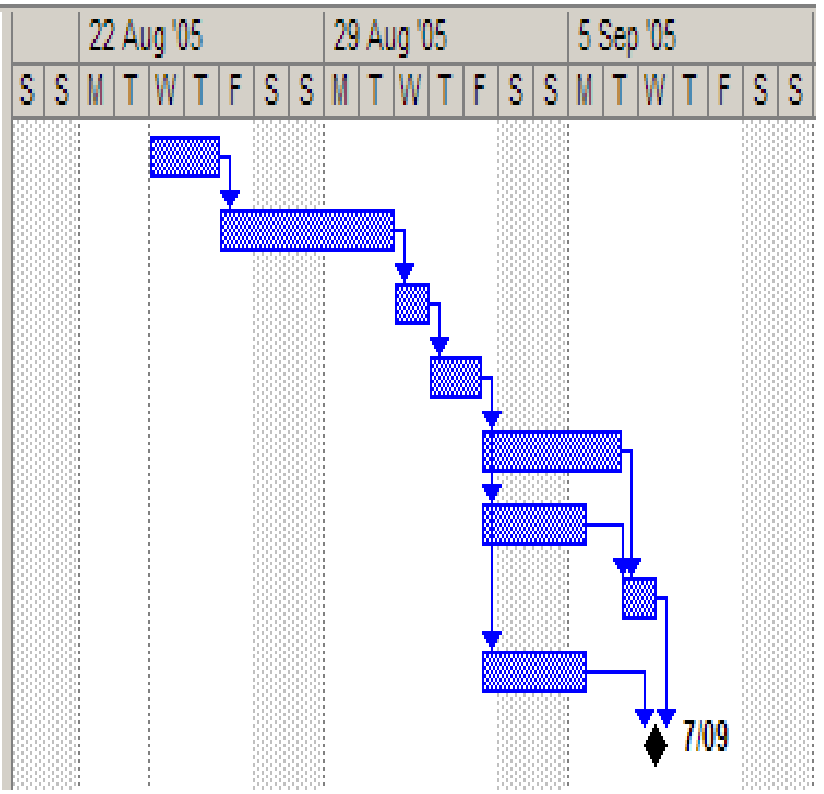
	Task Name	Duration	Predecessors
1	Clear site	2 days	
2	Lay foundations	3 days	
3	Put up walls	1 day	
4	Put on roof	1.5 days	
5	Install electrics	2 days	
6	Install plumbing	1 day	
7	Painting	1 day	
8	Landscaping	1 day	
9	Finish	0 days	



MAKING A GANTT CHART: STEP 3

Add dependencies for every task (if any)

	Task Name	Duration	Predecessors
1	Clear site	2 days	
2	Lay foundations	3 days	1
3	Put up walls	1 day	2
4	Put on roof	1.5 days	3
5	Install electrics	2 days	4
6	Install plumbing	1 day	4
7	Painting	1 day	5,6
8	Landscaping	1 day	4
9	Finish	0 days	8,7



MAKING A GANTT CHART: STEP 3

Add dependencies for every task (if any)

In this example,

- task 2 cannot start before task 1 ends.
- Task 3 is **dependent** on task 2.
- Task 7 is dependent on two other tasks
- Electrics, plumbing and landscaping are **concurrent**

tasks and can occur simultaneously. All 3 can start after task 4 ends.

- Task 9 has zero duration, and is a **milestone**

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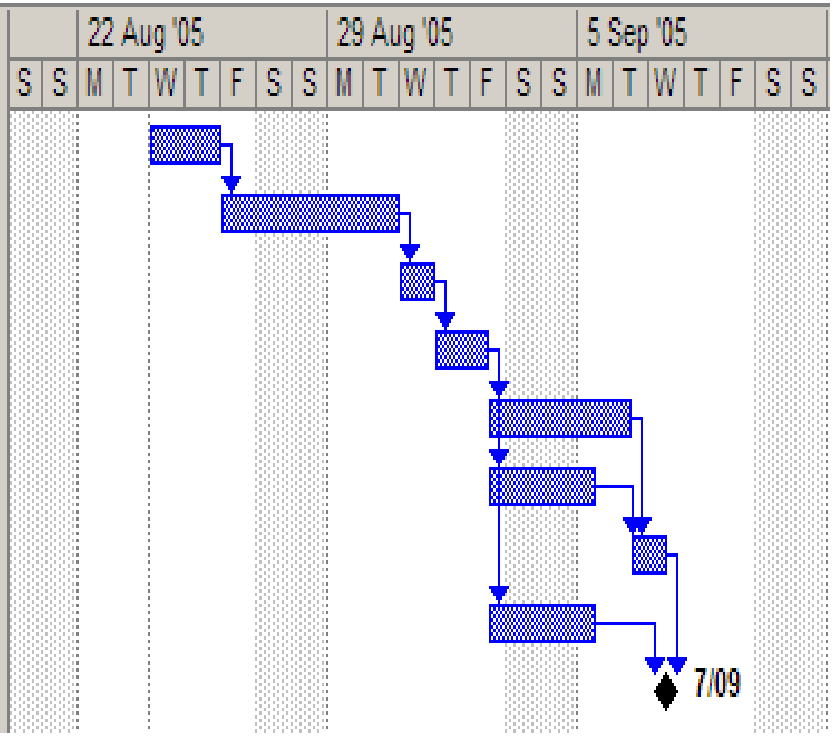
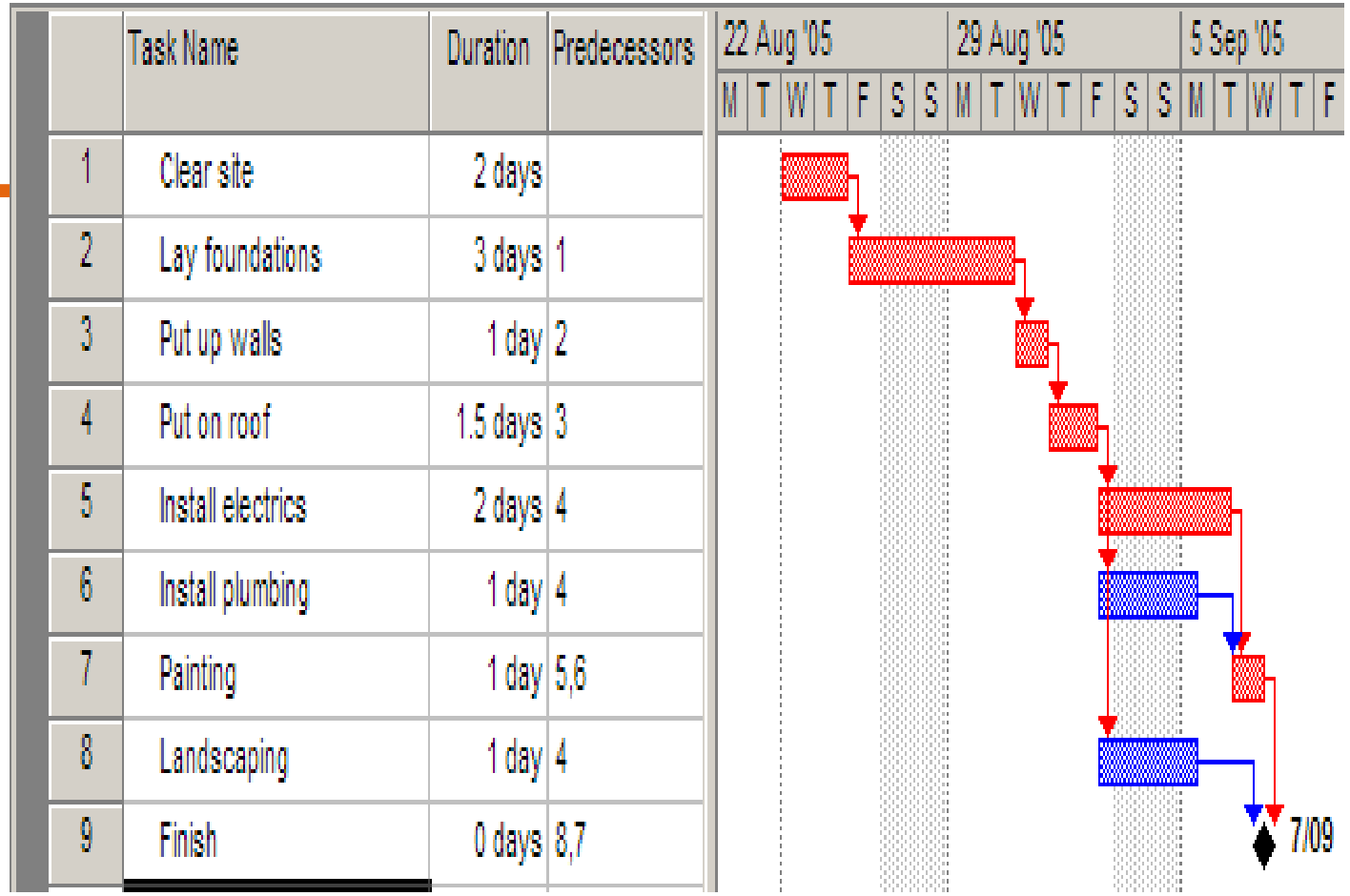


MAKING A GANTT CHART: STEP 4

- Identify critical path using task duration
- Shown in red in diagram
- The critical path contains a list of linked
- tasks that directly affects the project finish
- date.
- If any task on the critical path is late, the
- whole project is late



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MAKING A GANTT CHART: STEP 4

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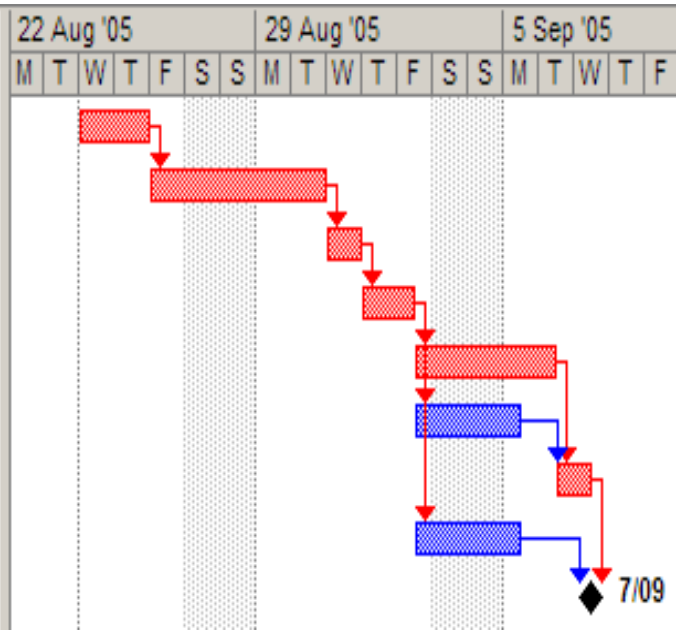

- MS Project can identify the critical path
- The length of the critical path is the sum of the lengths of all critical tasks
- (the red tasks 1,2,3,4,5,7) which is 2+3+1+1.5+2+1 = 10.5 days.
- In other words, the minimum amount of time required to get all tasks completed is 10.5 days
- The other tasks (6,8) can each run over-time before affecting the end date of the project

ACTIVITY

Develop a Gantt chart and find critical path for the given scenario

Activity	Expected Duration	Predecessors
A	2 days	—
B	3 days	A
C	4 days	A
D	4 days	B, C
E	5 days	B
F	6 days	D
G	4 days	C, E, F

WIDE BAND DELPHI TECHNIQUE PRACTICE QUESTION

PRACTICE QUESTION

Below are the estimation forms from a Wideband Delphi estimation meeting. There are 5 tasks (A-E) and 3 members (M1, M2, M3). The numbers in the tables indicate days (note: not delta) that a member thinks will take to complete a task. Given this data, do the following:

	Member name: M1			Member name: M2			Member name: M3		
Task	Round1	Round2	Round3	Round1	Round2	Round3	Round1	Round2	Round3
A	3	3	3	4	4	4	7	7	7
B	3	3	4	6	5	5	8	3	3
C	6	6	6	2	5	5	7	6	5
D	3	3	3	3	3	3	2	2	3
E	5	2	2	1	1	2	2	2	2

- Show how the meeting progressed by drawing the result graph.
- Demonstrate how the result sheet estimation form mentioning the best, worst and average cases can be created using the given data.