

# Q1) Online Ticket Management System.

## i) Activities:

Task ID	Activity	Duration	Predecessor
A	Req. & Planning	2	-
B	System UI & des.	2	A
C	Backend + DB	6	B
D	Frontend Implement.	5	B
E	Integration, test.	3	C, D

Step 1: Forward Pass : Find EB & EF.

First activity  $\rightarrow$  ES = 0

EF = ES + Duration.

For activities with multiple predecessors

ES = max of EF of predecessors.

Activity	Duration	Predcesser	ES	EF
A	2	-	0	2
B	2	A	2	4
C	6	B	4	10
D	5	B	4	9
E	3	C, D	max(4, 10) = 10	13

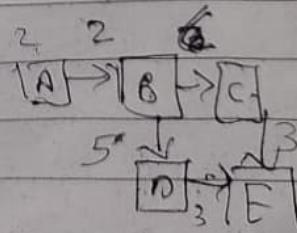
The critical path is longest time path through the network - the one that gives total project duration = (13 days).

Path Duration

A - B - C - E       $2+2+6+3 = 13$

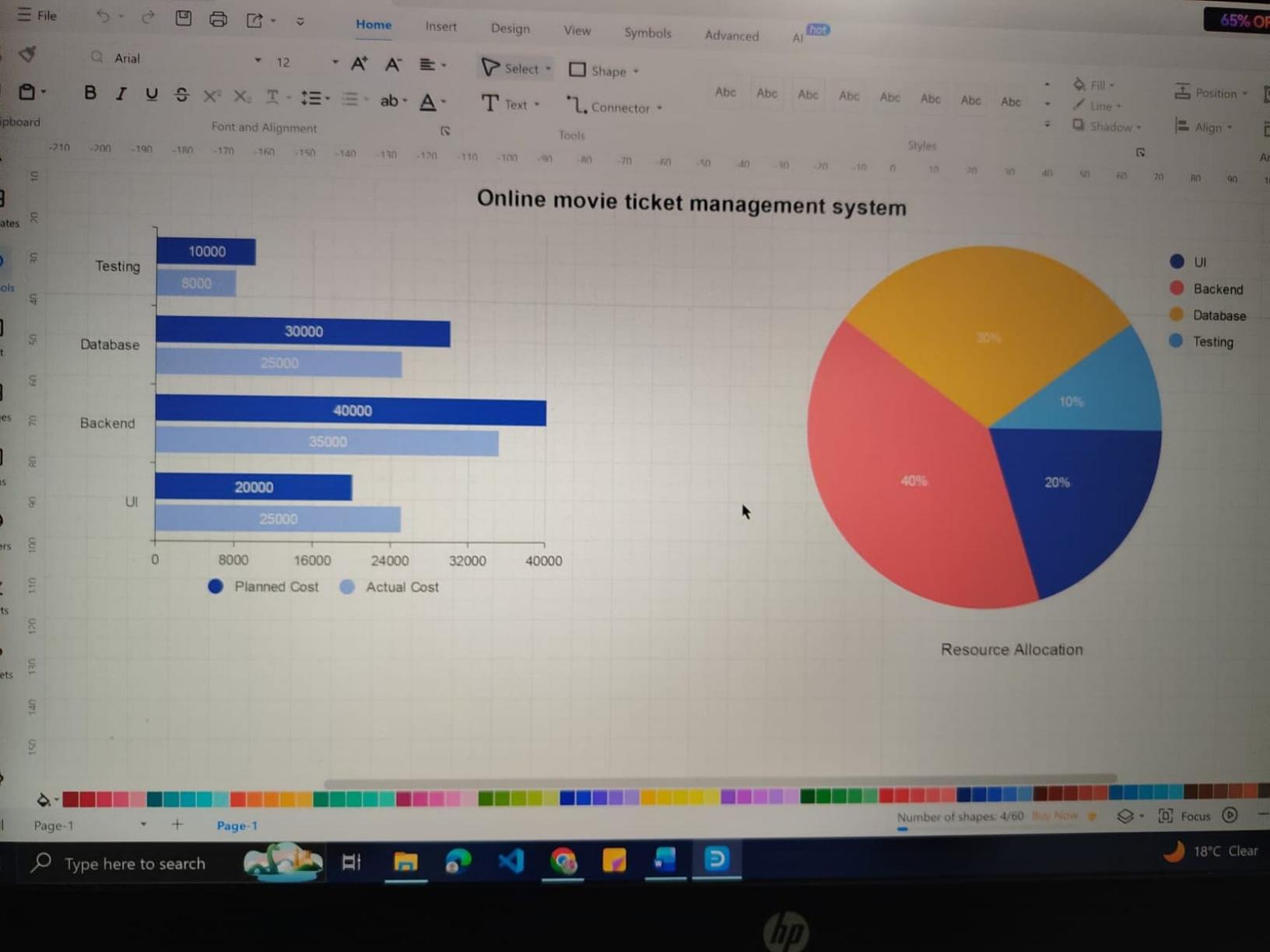
A - B - D - F       $2+2+5+3 = 12$

longest path = A - B - D - F  
taking 12 days.



Step 2: Assume cost, budget & resources (for chart)

Activity	Planned ₹ Cost	Actual ₹ Cost	Planned Resource	Actual Resource.
A	10,000	9,000	2	2
B	15,000	16,000	3	5
C	30,000	32,000	4	3
D	25,000	22,000	3	5
E	20,000	26,000	4	2
Total	1,00,000	1,05,000	16	17



MC = 80,000,00

9,000,000

CPT = 10125 ✓ 1 Under Budget

SPT = 0.9 ➡ Behind Schedule.

## 19) Project Summary:

1. Project Name: Online Home Delivery Mart System
2. Objective: Manage orders, delivery tracking, customer records, payment ~~and~~ delivery agents.
3. Duration: 10 weeks
4. Total Budget: ₹ 10,00,000
5. Overall Progress: 60% completed.

100%  
10%

## 2) Allocated Resources:

Resource	Quantity	Role
1. Developers	3	Backend + Frontend
2. UI/UX Designer	1	screens + GUI
3. Database Admin	1	DB Design
4. Delivery Domain Expert	1	Req. Analysis
5. QA Tester	1	Testing
	7	

## 3) Project Completion Cost & Budget

Activity	Budgeted Cost	Actual Cost
1. Development	₹ 600,000	₹ 500,000
2. Database Setup	₹ 200,000	₹ 150,000
3. Testing	₹ 100,000	₹ 70,000
4. Deployment	₹ 100,000	Pending

Total Budget : ₹ 1,00,000

Actual Spent : ₹ 720,000

Balance : ₹ 280,000

## 4) Allocated Tasks:

Activity	Status
1. Reg. & Plan	Completed
2. UI Design	Completed
3. Backend	In Progress
4. Database	Completed
5. Testing	Pending
6. Deployment	

# CPM :

Activity	Description	Duration	Predecessor
A	Req. Gathering	1	-
B	UI Design	2	A
C	Backend Dev	3	B
D	Database	2	B
E	Integration	1	C, D
F	Delivery Module	2	C
G	Testing	2	E, F
H	Deployment	1	G

Forward Pass .

Activity	Duration	Predecessor	ES	EF
A	1	-	0	1
B	2	A	1	3
C	3	B	3	6
D	2	B	3	5
E	1	C, D	$\max(6, 5)$ = 6	7
F	2	E	6	8
G	2	E, F	$\max(7, 8)$ = 8	10
H	1	G	8	11

Critical Path:

$A \rightarrow B \rightarrow C \rightarrow F \rightarrow G \rightarrow H \Rightarrow 11 \text{ weeks}$ .

