

PERT / CPM

Project Name: Home service & security Automation R&D

1. Prepare Detailed WBS wise Time Schedule:

Table- 01

Task ID	Task Name	Predecessors	Duration	Date (Start date, Finish date)
A	Planning	none	7 Days	22/10/22 29/10/22
B	Design	A	30 Days	29/10/22 28/11/22
C	Measure Outcomes	A	7 Days	29/10/22 05/11/22
D	Evaluate Feedback	C	6 Days	05/11/22 11/11/22
E	Resource Management	B,D	45 Days	28/11/22 12/01/23
F	Budgeting	E	14 Days	12/01/23 26/01/23
G	Manufacture	B,F	120 Days	26/01/23 26/05/23
H	Integration	G	60 Days	26/05/23 25/07/23
I	System Analysis	H,G	7 Days	25/07/23 01/08/23
J	Testing	H	30 Days	25/07/23 24/08/23
K	System Installation	I	14 Days	01/08/23 15/08/23
L	Risk Analysis	J,K	7 Days	24/08/23 31/08/23

M	Marketing	F	21 Days	26/01/23 16/02/23
			Total = 368 days	

2. Create Tasks Dependencies Table:

Table - 02

<i>Task</i>	<i>Start Date</i>	<i>Finish Date</i>	<i>Duration</i>
<i>Planning</i>	<i>10/22/2022</i>	<i>10/29/2022</i>	<i>7</i>
		<i>2</i>	
<i>Design</i>	<i>10/29/2022</i>	<i>11/28/2022</i>	<i>30</i>
<i>Measure Outcomes</i>	<i>10/29/2022</i>	<i>11/5/2022</i>	<i>7</i>
<i>Evaluate Feedback</i>	<i>11/5/2022</i>	<i>11/11/2022</i>	<i>6</i>
<i>Resource Management</i>	<i>11/28/2022</i>	<i>1/12/2023</i>	<i>45</i>
<i>Budgeting</i>	<i>1/12/2023</i>	<i>1/26/2023</i>	<i>14</i>
<i>Manufacture</i>	<i>1/26/2023</i>	<i>5/26/2023</i>	<i>120</i>
<i>Integration</i>	<i>5/26/2023</i>	<i>7/25/2023</i>	<i>60</i>
<i>System Analysis</i>	<i>7/25/2023</i>	<i>8/1/2023</i>	<i>7</i>
<i>Testing</i>	<i>7/25/2023</i>	<i>8/24/2023</i>	<i>30</i>
<i>System Installation</i>	<i>8/1/2023</i>	<i>8/15/2023</i>	<i>14</i>
<i>Risk Analysis</i>	<i>8/24/2023</i>	<i>8/31/2023</i>	<i>7</i>
<i>Marketing</i>	<i>1/26/2023</i>	<i>2/16/2023</i>	<i>21</i>

Gantt Chart:

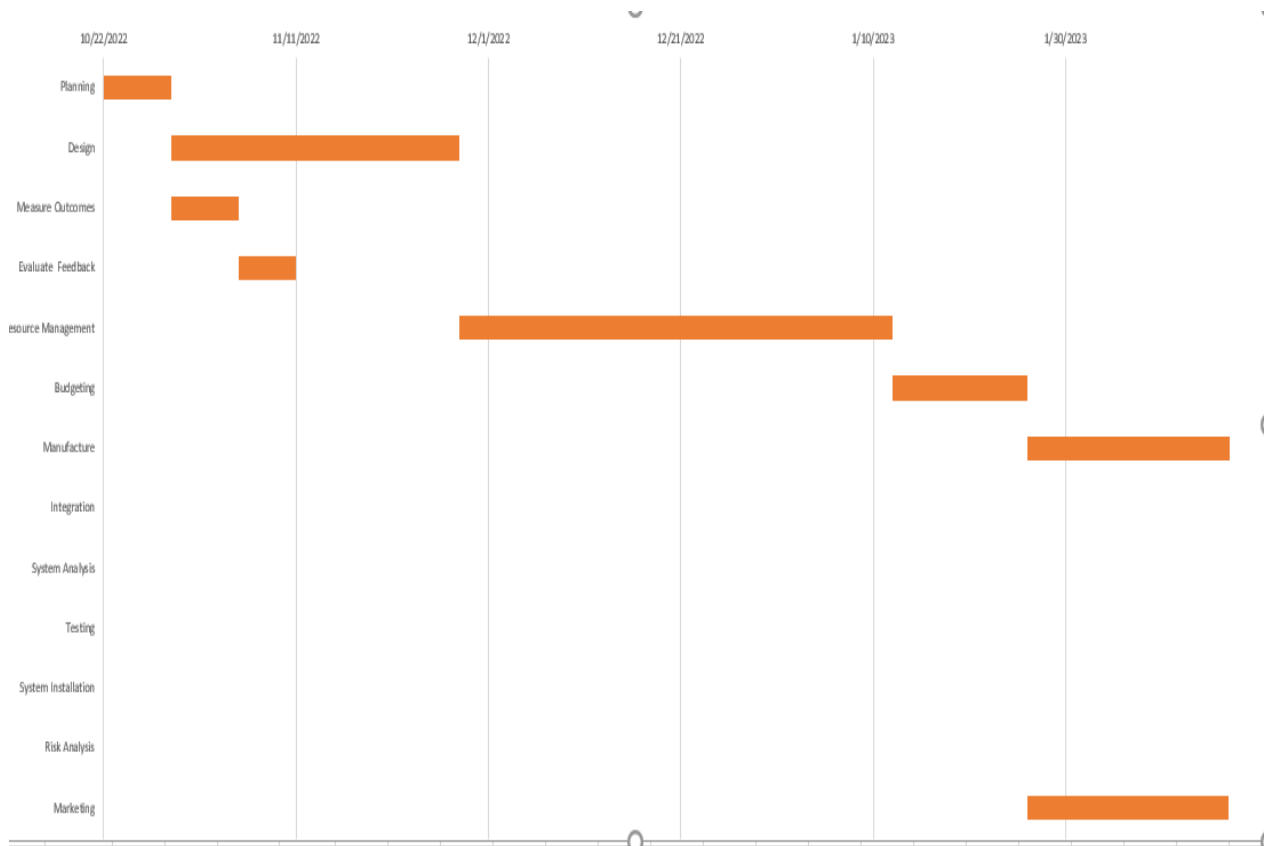


Figure: Gantt Chart from Table 02

3. Draw the Scheduling Network Diagram (PERT):

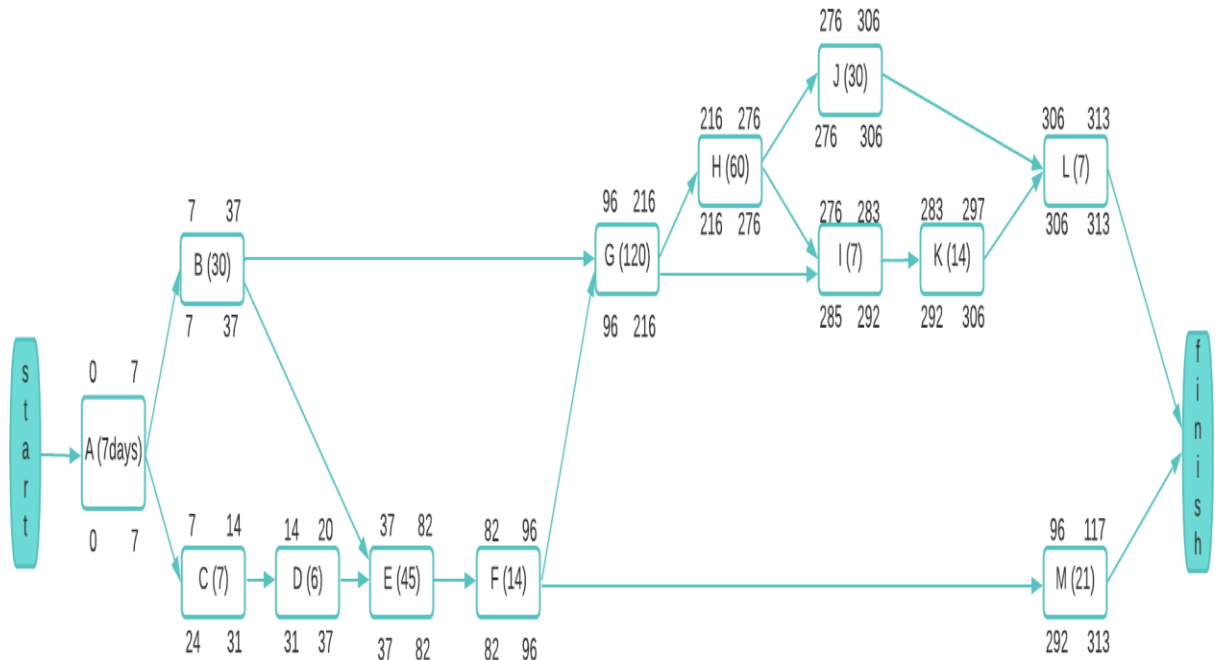


Figure: A Pert/CPM Network of Home service & security Automation R&D from Table 01

4. Calculate the Project's Critical Path from the multiple paths in the Network Diagram:

Critical Path:

- 1) start - A - B - G - H - J - L - finish
 - 2) start - A - B - E - F - G - H - J - L - finish
- Critical time:
- 1) For first critical path, critical time is 254 days
 - 2) & for 2nd critical path, critical time is 313 days