Project 1

MIS 6360 - Agile Project Management

Group 4

Group Members: Evan Lott

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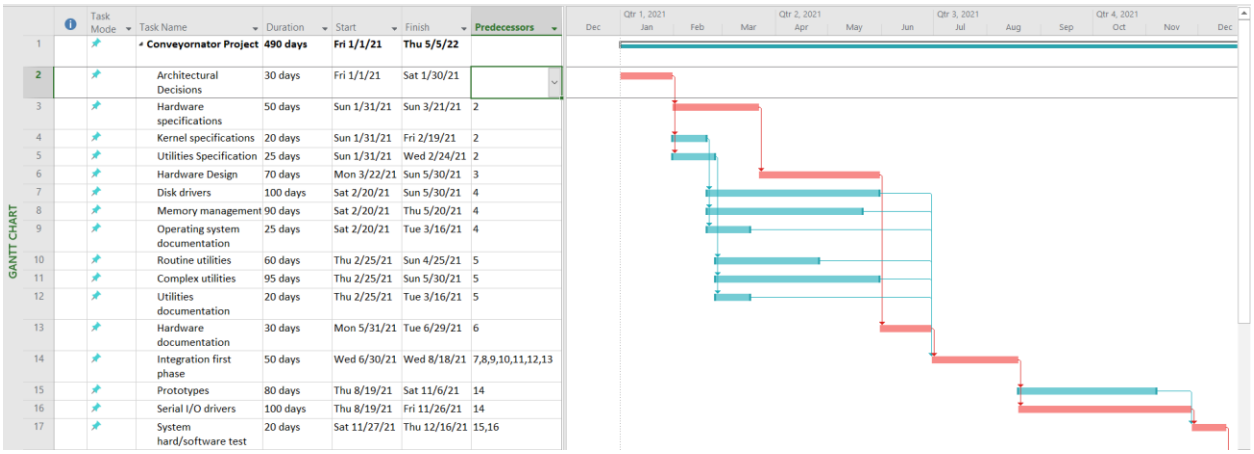
Q1) a. Create the project described in table 1 in Microsoft Project and paste a screenshot of the bar (Gantt) chart of the project highlighting the critical path below. Please make sure all tasks are clearly labeled with their corresponding task name. Your Gantt chart should also include a summary task. DO NOT INCLUDE THE RESOURCE ASSIGNMENTS LISTED IN THE THIRD COLUMN OF TABLE 1.

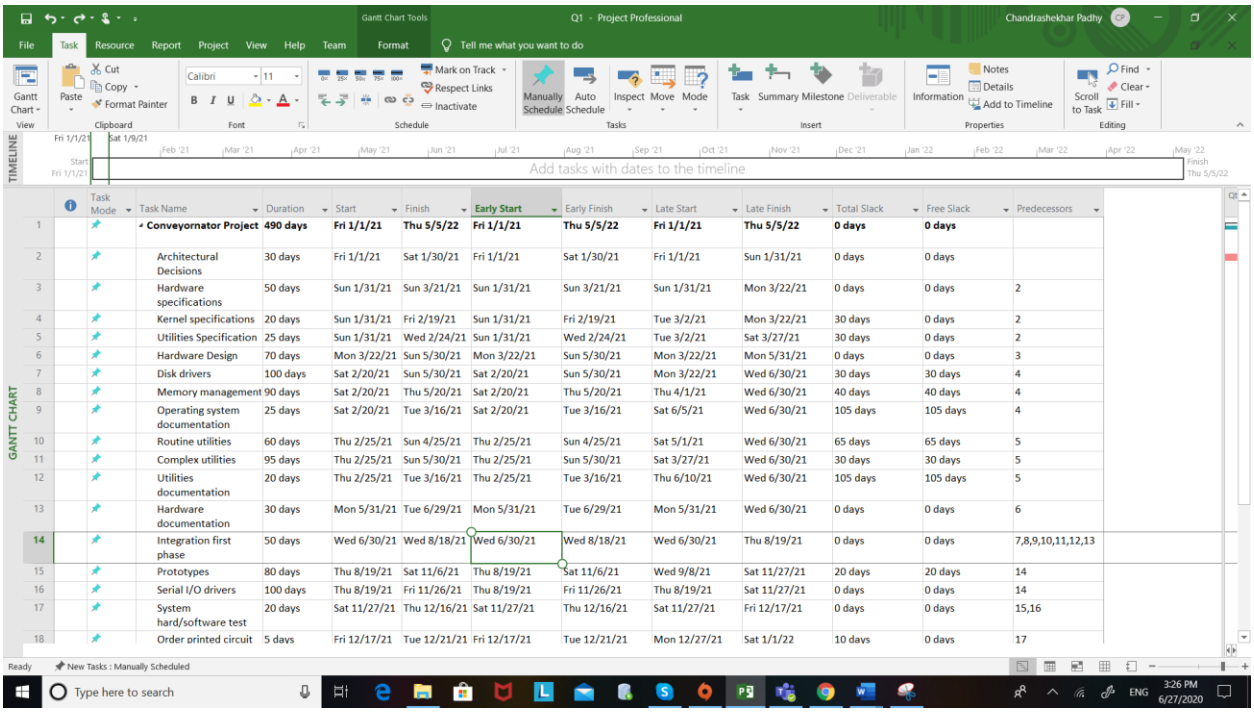
Ans:



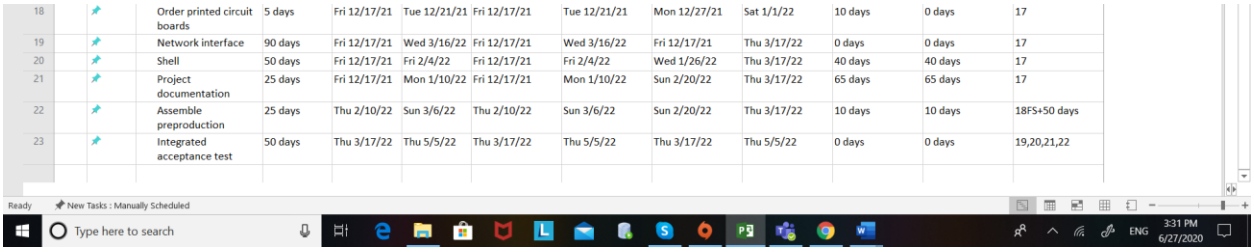
	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		**Conveyornator Project**	**490 days**	**Fri 1/1/21**	**Thu 5/5/22**	
2		Architectural Decisions	30 days	Fri 1/1/21	Sat 1/30/21	
3		Hardware specifications	50 days	Sun 1/31/21	Sun 3/21/21	2
4		Kernel specifications	20 days	Sun 1/31/21	Fri 2/19/21	2
5		Utilities Specification	25 days	Sun 1/31/21	Wed 2/24/21	2
6		Hardware Design	70 days	Mon 3/22/21	Sun 5/30/21	3
7		Disk drivers	100 days	Sat 2/20/21	Sun 5/30/21	4
8		Memory management	90 days	Sat 2/20/21	Thu 5/20/21	4
9		Operating system documentation	25 days	Sat 2/20/21	Tue 3/16/21	4
10		Routine utilities	60 days	Thu 2/25/21	Sun 4/25/21	5
11		Complex utilities	95 days	Thu 2/25/21	Sun 5/30/21	5
12		Utilities documentation	20 days	Thu 2/25/21	Tue 3/16/21	5
13		Hardware documentation	30 days	Mon 5/31/21	Tue 6/29/21	6
14		Integration first phase	50 days	Wed 6/30/21	Wed 8/18/21	7,8,9,10,11,12,13
15		Prototypes	80 days	Thu 8/19/21	Sat 11/6/21	14
16		Serial I/O drivers	100 days	Thu 8/19/21	Fri 11/26/21	14
17		System hard/software test	20 days	Sat 11/27/21	Thu 12/16/21	15,16
18		Order printed circuit boards	5 days	Fri 12/17/21	Tue 12/21/21	17
19		Network interface	90 days	Fri 12/17/21	Wed 3/16/22	17
20		Shell	50 days	Fri 12/17/21	Fri 2/4/22	17
21		Project documentation	25 days	Fri 12/17/21	Mon 1/10/22	17
22		Assemble preproduction	25 days	Thu 2/10/22	Sun 3/6/22	18FS+50 days
23		Integrated acceptance test	50 days	Thu 3/17/22	Thu 5/5/22	19,20,21,22

b. Include a screenshot out of ES, LS, EF, LF, total slack and free slack in table form. The screenshot provided should also include a summary task for the project.

Ans:



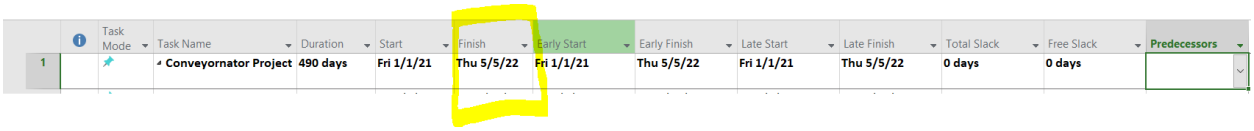
	Task Mode	Task Name	Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Total Slack	Free Slack	Predecessors
1		**Conveyornator Project**	**490 days**	**Fri 1/1/21**	**Thu 5/5/22**	**Fri 1/1/21**	**Thu 5/5/22**	**Fri 1/1/21**	**Thu 5/5/22**	**0 days**	**0 days**	
2		Architectural Decisions	30 days	Fri 1/1/21	Sat 1/30/21	Fri 1/1/21	Sat 1/30/21	Fri 1/1/21	Sun 1/31/21	0 days	0 days	
3		Hardware specifications	50 days	Sun 1/31/21	Sun 3/21/21	Sun 1/31/21	Sun 3/21/21	Sun 1/31/21	Mon 3/22/21	0 days	0 days	2
4		Kernel specifications	20 days	Sun 1/31/21	Fri 2/19/21	Sun 1/31/21	Fri 2/19/21	Tue 3/2/21	Mon 3/22/21	30 days	0 days	2
5		Utilities Specification	25 days	Sun 1/31/21	Wed 2/24/21	Sun 1/31/21	Wed 2/24/21	Tue 3/2/21	Sat 3/27/21	30 days	0 days	2
6		Hardware Design	70 days	Mon 3/22/21	Sun 5/30/21	Mon 3/22/21	Sun 5/30/21	Mon 3/22/21	Mon 5/31/21	0 days	0 days	3
7		Disk drivers	100 days	Sat 2/20/21	Sun 5/30/21	Sat 2/20/21	Sun 5/30/21	Mon 3/22/21	Wed 6/30/21	30 days	30 days	4
8		Memory management	90 days	Sat 2/20/21	Thu 5/20/21	Sat 2/20/21	Thu 5/20/21	Thu 4/1/21	Wed 6/30/21	40 days	40 days	4
9		Operating system documentation	25 days	Sat 2/20/21	Tue 3/16/21	Sat 2/20/21	Tue 3/16/21	Sat 6/5/21	Wed 6/30/21	105 days	105 days	4
10		Routine utilities	60 days	Thu 2/25/21	Sun 4/25/21	Thu 2/25/21	Sun 4/25/21	Sat 5/1/21	Wed 6/30/21	65 days	65 days	5
11		Complex utilities	95 days	Thu 2/25/21	Sun 5/30/21	Thu 2/25/21	Sun 5/30/21	Sat 3/27/21	Wed 6/30/21	30 days	30 days	5
12		Utilities documentation	20 days	Thu 2/25/21	Tue 3/16/21	Thu 2/25/21	Tue 3/16/21	Thu 6/10/21	Wed 6/30/21	105 days	105 days	5
13		Hardware documentation	30 days	Mon 5/31/21	Tue 6/29/21	Mon 5/31/21	Tue 6/29/21	Mon 5/31/21	Wed 6/30/21	0 days	0 days	6
14		Integration first phase	50 days	Wed 6/30/21	Wed 8/18/21	Wed 6/30/21	Wed 8/18/21	Wed 6/30/21	Thu 8/19/21	0 days	0 days	7,8,9,10,11,12,13
15		Prototypes	80 days	Thu 8/19/21	Sat 11/6/21	Thu 8/19/21	Sat 11/6/21	Wed 9/8/21	Sat 11/27/21	20 days	20 days	14
16		Serial I/O drivers	100 days	Thu 8/19/21	Fri 11/26/21	Thu 8/19/21	Fri 11/26/21	Thu 8/19/21	Sat 11/27/21	0 days	0 days	14
17		System hard/software test	20 days	Sat 11/27/21	Thu 12/16/21	Sat 11/27/21	Thu 12/16/21	Sat 11/27/21	Fri 12/17/21	0 days	0 days	15,16
18		Order printed circuit	5 days	Fri 12/17/21	Tue 12/21/21	Fri 12/17/21	Tue 12/21/21	Mon 12/27/21	Sat 1/1/22	10 days	0 days	17



	Task Mode	Task Name	Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Total Slack	Free Slack	Predecessors
18		Order printed circuit boards	5 days	Fri 12/17/21	Tue 12/21/21	Fri 12/17/21	Tue 12/21/21	Mon 12/27/21	Sat 1/1/22	10 days	0 days	17
19		Network interface	90 days	Fri 12/17/21	Wed 3/16/22	Fri 12/17/21	Wed 3/16/22	Fri 12/17/21	Thu 3/17/22	0 days	0 days	17
20		Shell	50 days	Fri 12/17/21	Fri 2/4/22	Fri 12/17/21	Fri 2/4/22	Wed 1/26/22	Thu 3/17/22	40 days	40 days	17
21		Project documentation	25 days	Fri 12/17/21	Mon 1/10/22	Fri 12/17/21	Mon 1/10/22	Sun 2/20/22	Thu 3/17/22	65 days	65 days	17
22		Assemble preproduction	25 days	Thu 2/10/22	Sun 3/6/22	Thu 2/10/22	Sun 3/6/22	Sun 2/20/22	Thu 3/17/22	10 days	10 days	18FS+50 days
23		Integrated acceptance test	50 days	Thu 3/17/22	Thu 5/5/22	Thu 3/17/22	Thu 5/5/22	Thu 3/17/22	Thu 5/5/22	0 days	0 days	19,20,21,22

c. What is the scheduled finish date?

Ans: The Scheduled finish date is **5/5/2022**.



	Task Mode	Task Name	Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Total Slack	Free Slack	Predecessors
1		**Conveyornator Project**	**490 days**	**Fri 1/1/21**	**Thu 5/5/22**	**Fri 1/1/21**	**Thu 5/5/22**	**Fri 1/1/21**	**Thu 5/5/22**	**0 days**	**0 days**	

d. How many days will the project take to complete?

Ans: The Project would take **490** days to complete

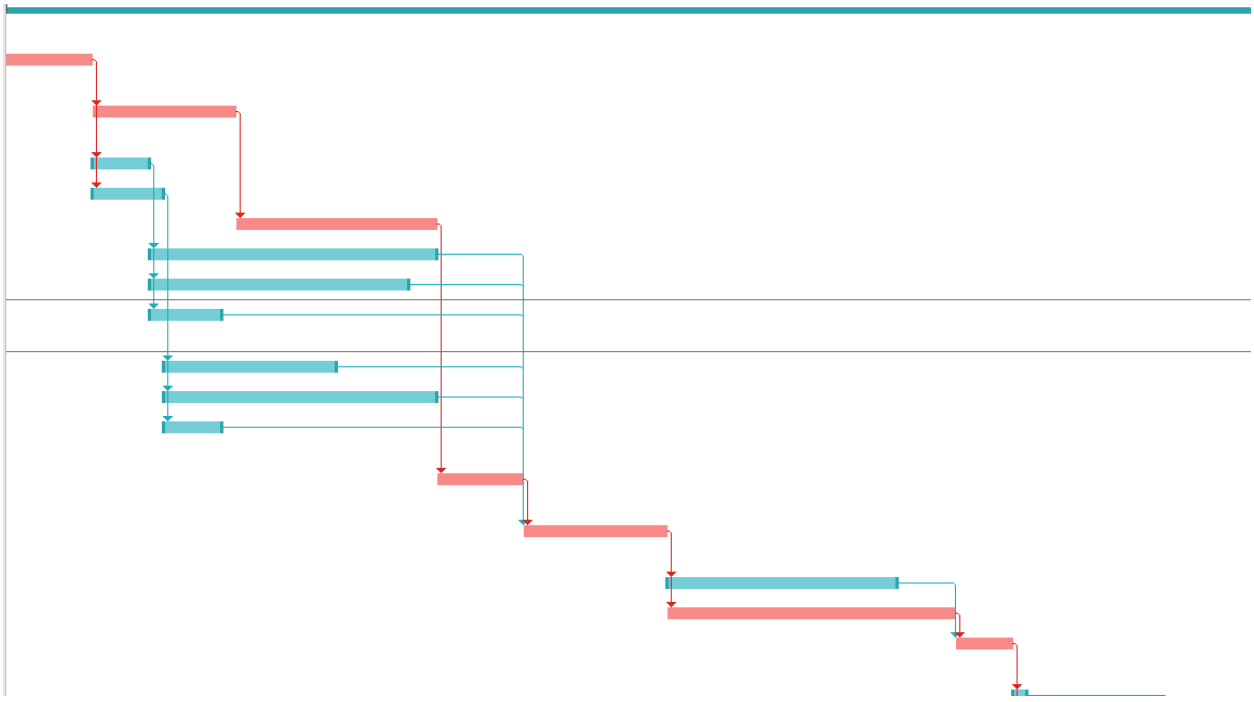
	Task Mode	Task Name	Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Total Slack	Free Slack	Predecessors
1		Conveyornator Project	490 days	Fri 1/1/21	Thu 5/5/22	Fri 1/1/21	Thu 5/5/22	Fri 1/1/21	Thu 5/5/22	0 days	0 days	

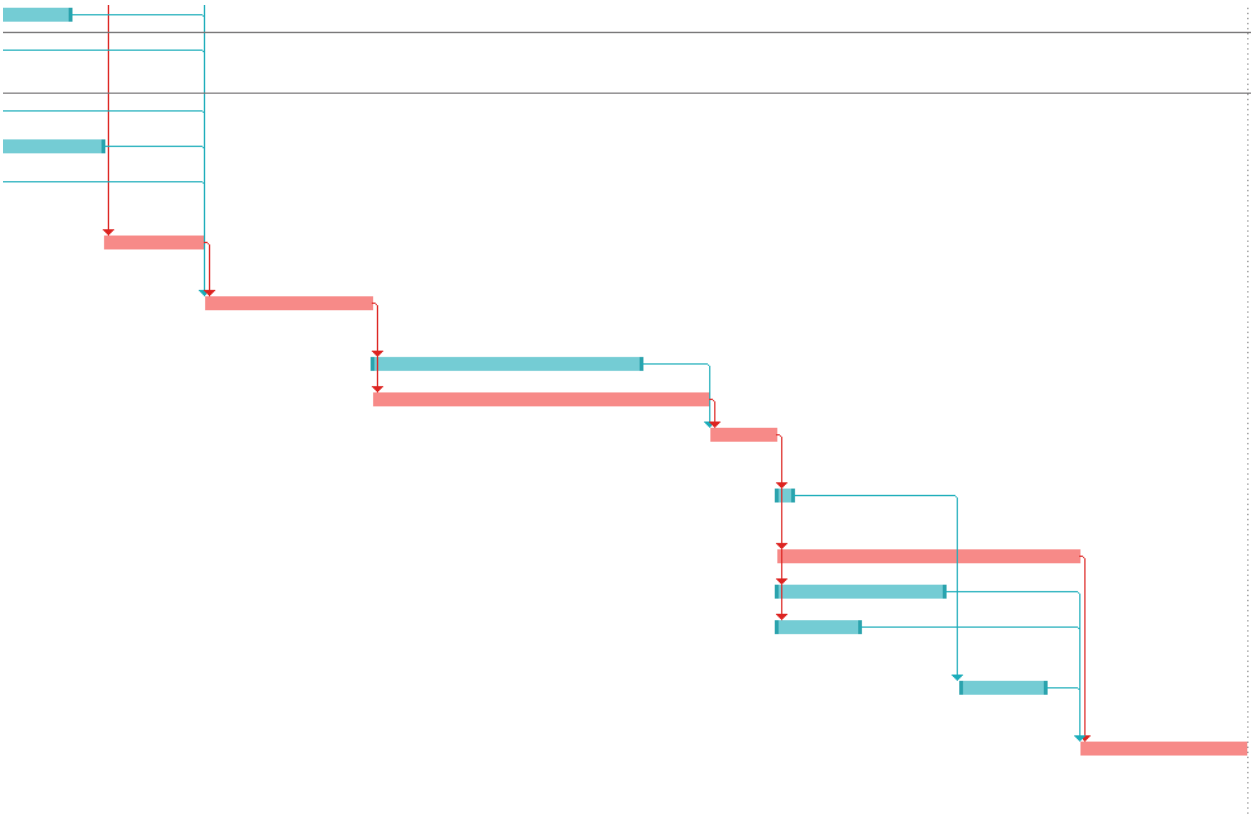
e. What percent of project activities are on the critical path

Ans: There are a total of 9 project activities on the critical path. The total percentage is calculated as follows:

9/22 = 40.909%

40.909% of the project activities are on the critical path.





f. What activity has the most total slack? What activity has the most free slack? Explain the difference between free slack and total slack.

Ans: The tasks **Utility Documentation** and **Operating System Documentation** have the most free slack of 105 days.
Free slack refers to how much time a task can be delayed before a subsequent task — or the entire project itself — is likewise delayed,
while Total Slack is the amount of time in a schedule that a task can be delayed before the entire project's completion date is delayed.

		Task Mode	Task Name	Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Total Slack	Free Slack	Predecessors
12			Utilities documentation	20 days	Thu 2/25/21	Tue 3/16/21	Thu 2/25/21	Tue 3/16/21	Thu 6/10/21	Wed 6/30/21	105 days	105 days	5
9			Operating system documentation	25 days	Sat 2/20/21	Tue 3/16/21	Sat 2/20/21	Tue 3/16/21	Sat 6/5/21	Wed 6/30/21	105 days	105 days	4

g. What is the total slack for the project as a whole? Use the summary task to help answer this question.

Ans: The total slack for the project is **0 days**.

		Task Mode	Task Name	Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Total Slack	Free Slack	Predecessors
1			**Conveyornator Project**	**490 days**	**Fri 1/1/21**	**Thu 5/5/22**	**Fri 1/1/21**	**Thu 5/5/22**	**Fri 1/1/21**	**Thu 5/5/22**	**0 days**	**0 days**	

h. Is it better to have a higher percentage of activities on the critical path or a lower percentage of activities on the critical path? Explain your answer.

Ans: It is better to have a lower percentage of activities on the critical path as we need to finish the project within the finish date mentioned.
Less the number of activities on the critical path, better the chances of reducing the project deadline.
We need to lower the count of critical activities on the critical path as moving project tasks out of the critical path would help lower the duration of the project.

i. Please find the Attached file

2)
a. After assigning resources, what is the total cost of the project?

Ans: The total cost of the project is **$1,481,600.00**

Task Mode	Task Name	Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Free Slack	Total Slack	Resource Names	Cost
	Conveyornator Project	490 days	Fri 1/1/21	Thu 5/5/22	Fri 1/1/21	Thu 5/5/22	Fri 1/1/21	Thu 5/5/22	0 days	0 days		$1,481,600.00

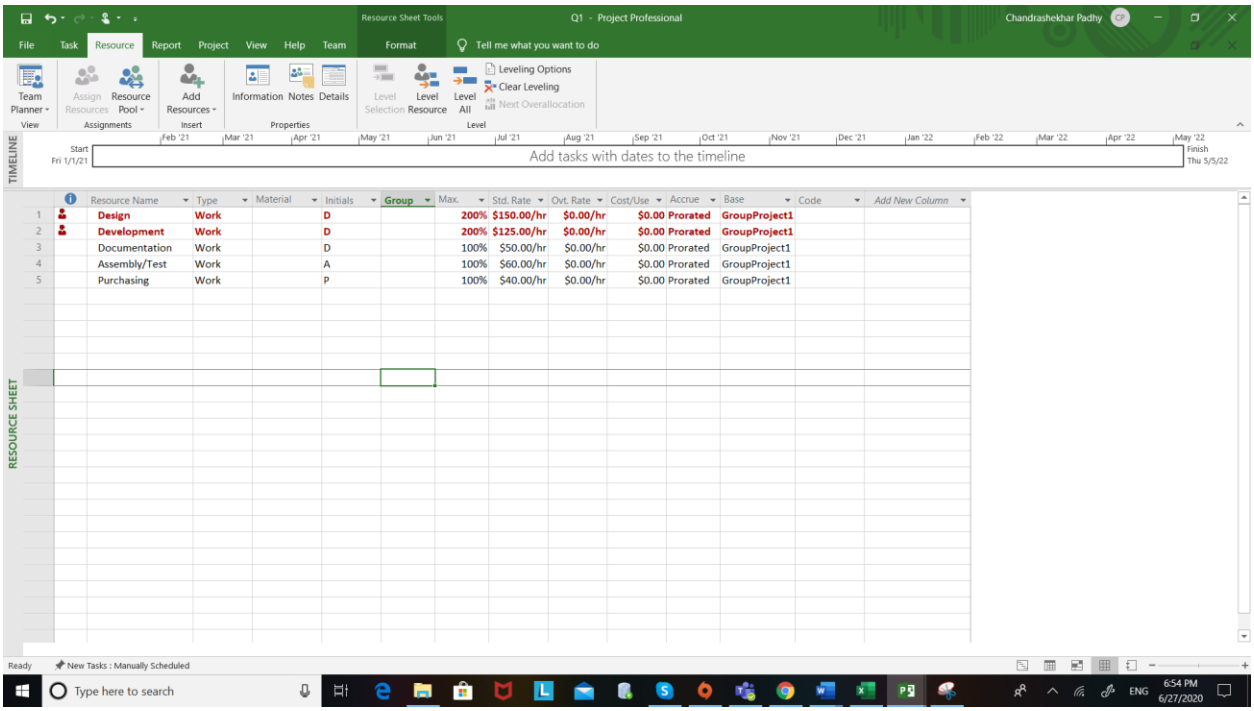
b. Which, if any, of the resources are over-allocated?

Ans: The **Design**, **Development** and **Documentation** Resources are over-allocated.

Resource Name	Type	Material	Initials	Group	Max.	Std. Rate	Ovt. Rate	Cost/Use	Accrue	Base	Code	Add New Column
Design	Work		D		200%	$150.00/hr	$0.00/hr	$0.00	Prorated	GroupProject1		
Development	Work		D		200%	$125.00/hr	$0.00/hr	$0.00	Prorated	GroupProject1		
Documentation	Work		D		100%	$50.00/hr	$0.00/hr	$0.00	Prorated	GroupProject1		
Assembly/Test	Work		A		100%	$60.00/hr	$0.00/hr	$0.00	Prorated	GroupProject1		
Purchasing	Work		P		100%	$40.00/hr	$0.00/hr	$0.00	Prorated	GroupProject1		

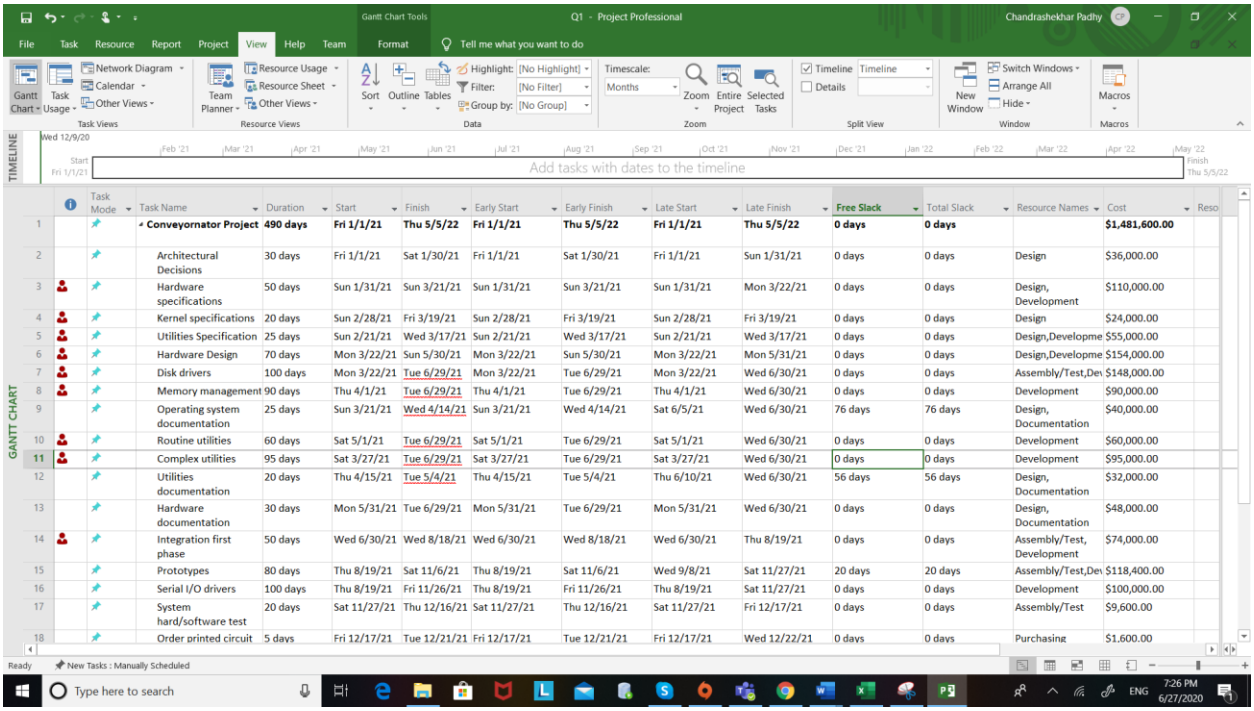
c. Try to resolve the over-allocation problems without extending the duration of the project using the resource leveling feature of MS Project. To level resources without extending the duration of the project, make sure the check boxes for "Level only within available slack" and "Level manually scheduled tasks" are both selected. Also, assume "Leveling can adjust individual assignments on task", "Leveling can create splits in remaining work", and "Level resources with the proposed booking type" are deselected. See Figure 3 for the correct leveling settings? Which, if any, of the over-allocated resources are no longer over-allocated? Which, if any, of the resources are still over-allocated?

Ans: The **Documentation** Resource is now not over-allocated after following the steps mentioned in question 2c.
Design and Development are still over-allocated.
Shared below is the screenshot of the remaining over-allocated resources.

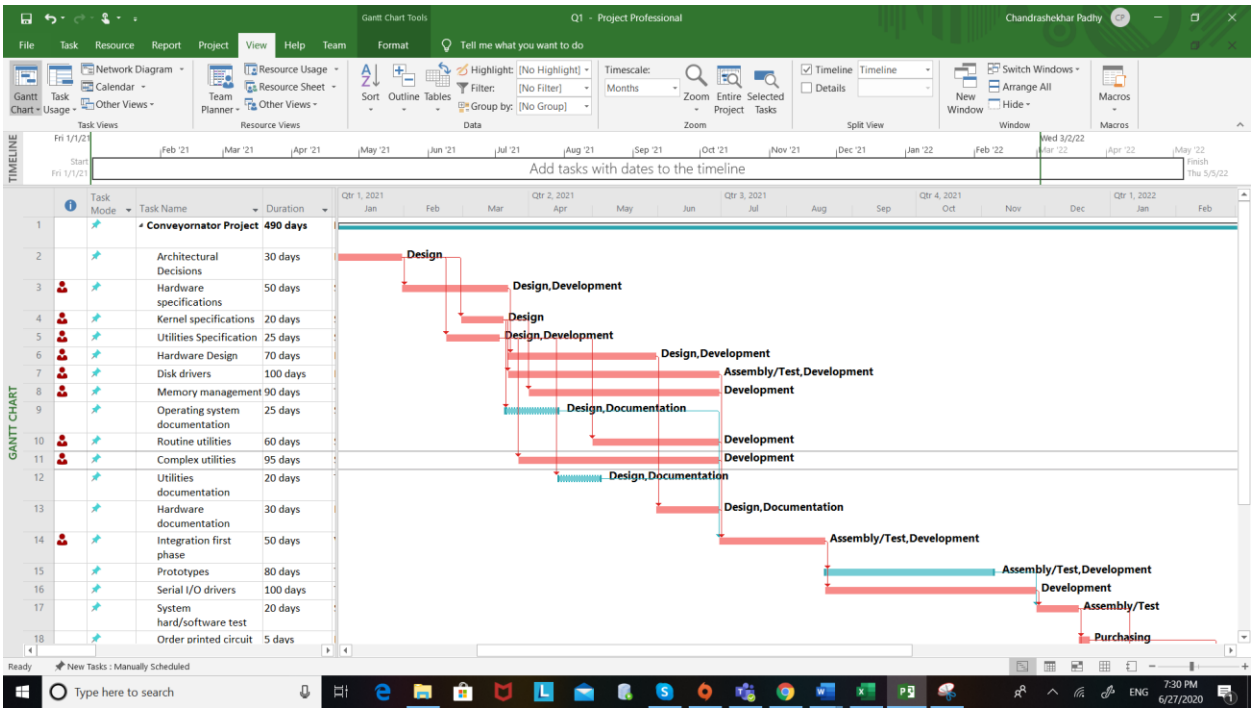


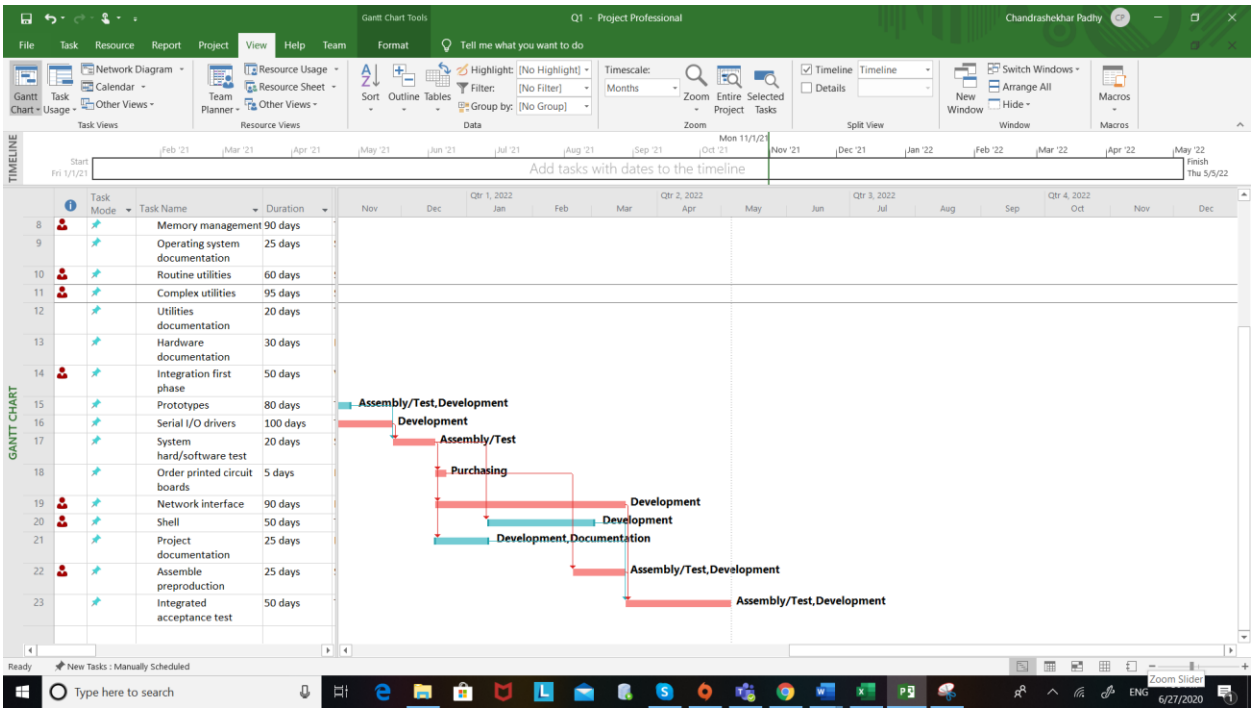
d. Include a Gantt chart and schedule table after leveling only within available slack. Please include a summary task and make sure all tasks are clearly labeled with their corresponding task name.

Ans:



19	Network interface	90 days	Fri 12/17/21	Wed 3/16/22	Fri 12/17/21	Wed 3/16/22	Fri 12/17/21	Thu 3/17/22	0 days	0 days	Development	$90,000.00
20	Shell	50 days	Tue 1/11/22	Tue 3/1/22	Tue 1/11/22	Tue 3/1/22	Wed 1/26/22	Thu 3/17/22	15 days	15 days	Development	$50,000.00
21	Project documentation	25 days	Fri 12/17/21	Mon 1/10/22	Fri 12/17/21	Mon 1/10/22	Sun 2/20/22	Thu 3/17/22	65 days	65 days	Development, Documentation	$35,000.00
22	Assemble preproduction	25 days	Sun 2/20/22	Wed 3/16/22	Sun 2/20/22	Wed 3/16/22	Sun 2/20/22	Thu 3/17/22	0 days	0 days	Assembly/Test, Development	$37,000.00
23	Integrated acceptance test	50 days	Thu 3/17/22	Thu 5/5/22	Thu 3/17/22	Thu 5/5/22	Thu 3/17/22	Thu 5/5/22	0 days	0 days	Assembly/Test, Development	$74,000.00



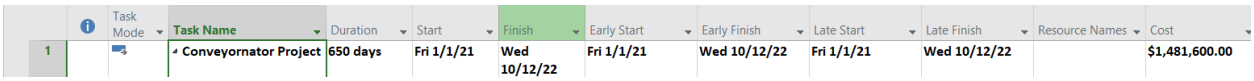


e. What is the impact of leveling within slack on the percent of project activities on the critical path?

Ans: The result is **17/22** tasks moving to the critical path as compared to the 9/22 before.
That results in 77.27% of activities on the critical path.

f. Assume you cannot add additional resources and the project is resource constrained. How many days will the project take after resolving all over-allocation problems? What is the scheduled finish date?

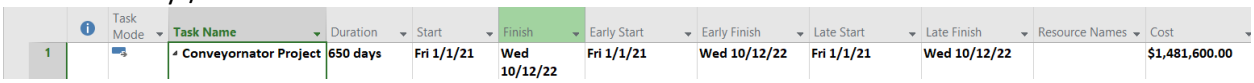
Ans: It would take a total of **650** days after resolving the over-allocation problem. The scheduled finish date is **10/12/2022**.



	Task Mode	Task Name	Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Resource Names	Cost
1		Conveyornator Project	650 days	Fri 1/1/21	Wed 10/12/22	Fri 1/1/21	Wed 10/12/22	Fri 1/1/21	Wed 10/12/22		$1,481,600.00

g. How does the schedule in 2f compare to the schedule in Question 1? Why did the number of days to complete the project in 2f increase?

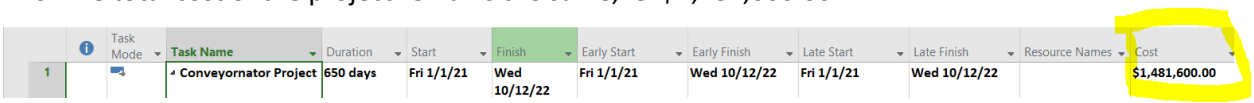
Ans: The duration increases as a result of activities moving on/off from the critical path.
Since the number of resources remained the same, the end date had to be moved and hence the number of days/duration increased.



	Task Mode	Task Name	Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Resource Names	Cost
1		Conveyornator Project	650 days	Fri 1/1/21	Wed 10/12/22	Fri 1/1/21	Wed 10/12/22	Fri 1/1/21	Wed 10/12/22		$1,481,600.00

h. What is the total cost of the project after resolving all over-allocation problems in step 2f? How does this cost compare with the cost in 2a?

Ans: The total cost of the project remains the same, ie. $1,481,600.00



	Task Mode	Task Name	Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Resource Names	Cost
1		Conveyornator Project	650 days	Fri 1/1/21	Wed 10/12/22	Fri 1/1/21	Wed 10/12/22	Fri 1/1/21	Wed 10/12/22		$1,481,600.00

i. Please find Attached the file for question 2 i.

Q3)

a. **The project sponsor is not pleased with the duration of the project after resolving all resource overallocation issues and has requested that you make changes to the project to shorten it so that the project takes less than 365 days to complete. You may make any change to the project you want, but you need to clearly describe the change along the impact of the change to the project budget and schedule. You may ignore and/or change any of the assumptions listed on the first page when making your changes.**

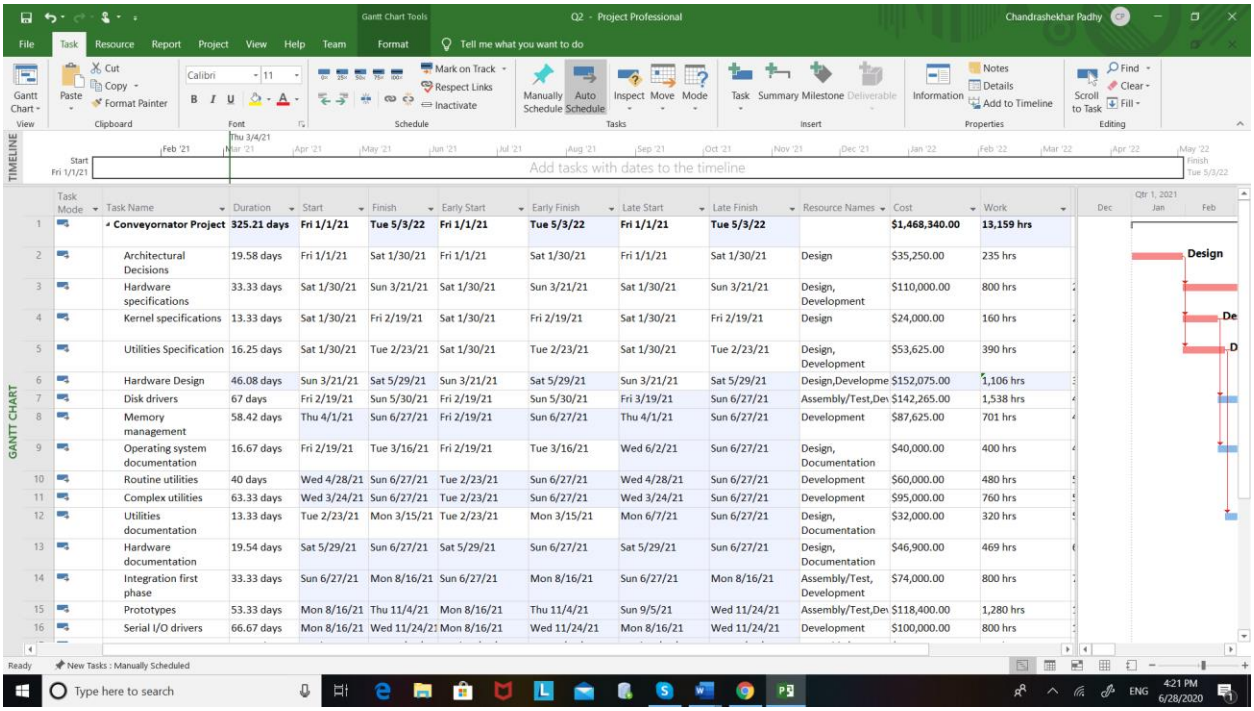
   Use the table below and list the changes you would make to shorten the project. Clearly describe each change, the impact the change has on the overall project schedule, and the impact the change has on project cost.

Ans:

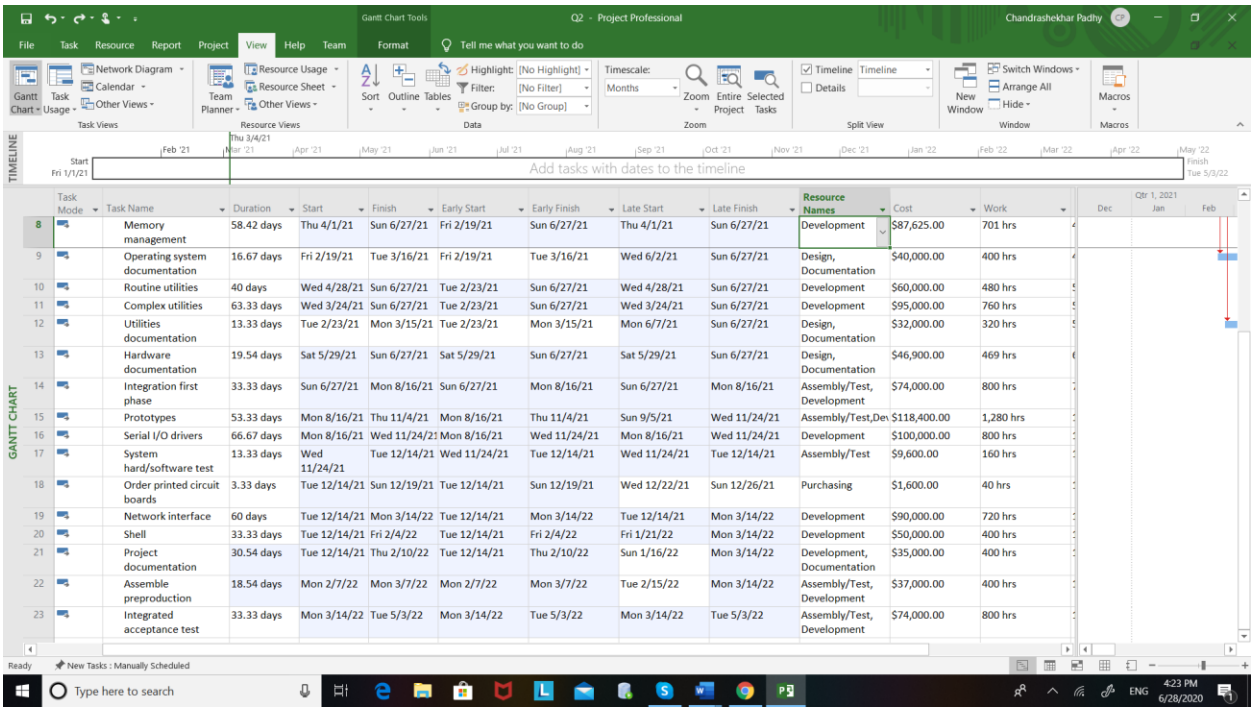
Some of the changes are :

1) Increased the duration of Hours to be worked to 12 instead of 8.
2) Increased the work capability of resources : Design – 300%, Development – 300%, Documentation – 150%, Assembly/Test – 150%, Purchasing – 150%
3) Changed the work unit in hrs, to reduce the cost and thus affect the number of days to be worked.
4) Removed Serial I/O task and buy existing driver suite

1) Increased the duration of Hours to be worked to 12 instead of 8.
- Brought about a significant change in the project completion date.
- The days changed to 325.21 days from the 650 when all the resources were levelled.
- Resulted in saving around (650-326) 324 days



	Task Mode	Task Name	Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Resource Names	Cost	Work
1		**Conveyornator Project**	**325.21 days**	**Fri 1/1/21**	**Tue 5/3/22**	**Fri 1/1/21**	**Tue 5/3/22**	**Fri 1/1/21**	**Tue 5/3/22**		**$1,468,340.00**	**13,159 hrs**
2		Architectural Decisions	19.58 days	Fri 1/1/21	Sat 1/30/21	Fri 1/1/21	Sat 1/30/21	Fri 1/1/21	Sat 1/30/21	Design	$35,250.00	235 hrs
3		Hardware specifications	33.33 days	Sat 1/30/21	Sun 3/21/21	Sat 1/30/21	Sun 3/21/21	Sat 1/30/21	Sun 3/21/21	Design, Development	$110,000.00	800 hrs
4		Kernel specifications	13.33 days	Sat 1/30/21	Fri 2/19/21	Sat 1/30/21	Fri 2/19/21	Sat 1/30/21	Fri 2/19/21	Design	$24,000.00	160 hrs
5		Utilities Specification	16.25 days	Sat 1/30/21	Tue 2/23/21	Sat 1/30/21	Tue 2/23/21	Sat 1/30/21	Tue 2/23/21	Design, Development	$53,625.00	390 hrs
6		Hardware Design	46.08 days	Sun 3/21/21	Sat 5/29/21	Sun 3/21/21	Sat 5/29/21	Sun 3/21/21	Sat 5/29/21	Design,Developme	$152,075.00	1,106 hrs
7		Disk drivers	67 days	Fri 2/19/21	Sun 5/30/21	Fri 2/19/21	Sun 5/30/21	Fri 3/19/21	Sun 6/27/21	Assembly/Test,De	$142,265.00	1,538 hrs
8		Memory management	58.42 days	Thu 4/1/21	Sun 6/27/21	Fri 2/19/21	Sun 6/27/21	Thu 4/1/21	Sun 6/27/21	Development	$87,625.00	701 hrs
9		Operating system documentation	16.67 days	Fri 2/19/21	Tue 3/16/21	Fri 2/19/21	Tue 3/16/21	Wed 6/2/21	Sun 6/27/21	Design, Documentation	$40,000.00	400 hrs
10		Routine utilities	40 days	Wed 4/28/21	Sun 6/27/21	Tue 2/23/21	Sun 6/27/21	Wed 4/28/21	Sun 6/27/21	Development	$60,000.00	480 hrs
11		Complex utilities	63.33 days	Wed 3/24/21	Sun 6/27/21	Tue 2/23/21	Sun 6/27/21	Wed 3/24/21	Sun 6/27/21	Development	$95,000.00	760 hrs
12		Utilities documentation	13.33 days	Tue 2/23/21	Mon 3/15/21	Tue 2/23/21	Mon 3/15/21	Mon 6/7/21	Sun 6/27/21	Design, Documentation	$32,000.00	320 hrs
13		Hardware documentation	19.54 days	Sat 5/29/21	Sun 6/27/21	Sat 5/29/21	Sun 6/27/21	Sat 5/29/21	Sun 6/27/21	Design, Documentation	$46,900.00	469 hrs
14		Integration first phase	33.33 days	Sun 6/27/21	Mon 8/16/21	Sun 6/27/21	Mon 8/16/21	Sun 6/27/21	Mon 8/16/21	Assembly/Test, Development	$74,000.00	800 hrs
15		Prototypes	53.33 days	Mon 8/16/21	Thu 11/4/21	Mon 8/16/21	Thu 11/4/21	Sun 9/5/21	Wed 11/24/21	Assembly/Test,De	$118,400.00	1,280 hrs
16		Serial I/O drivers	66.67 days	Mon 8/16/21	Wed 11/24/21	Mon 8/16/21	Wed 11/24/21	Mon 8/16/21	Wed 11/24/21	Development	$100,000.00	800 hrs



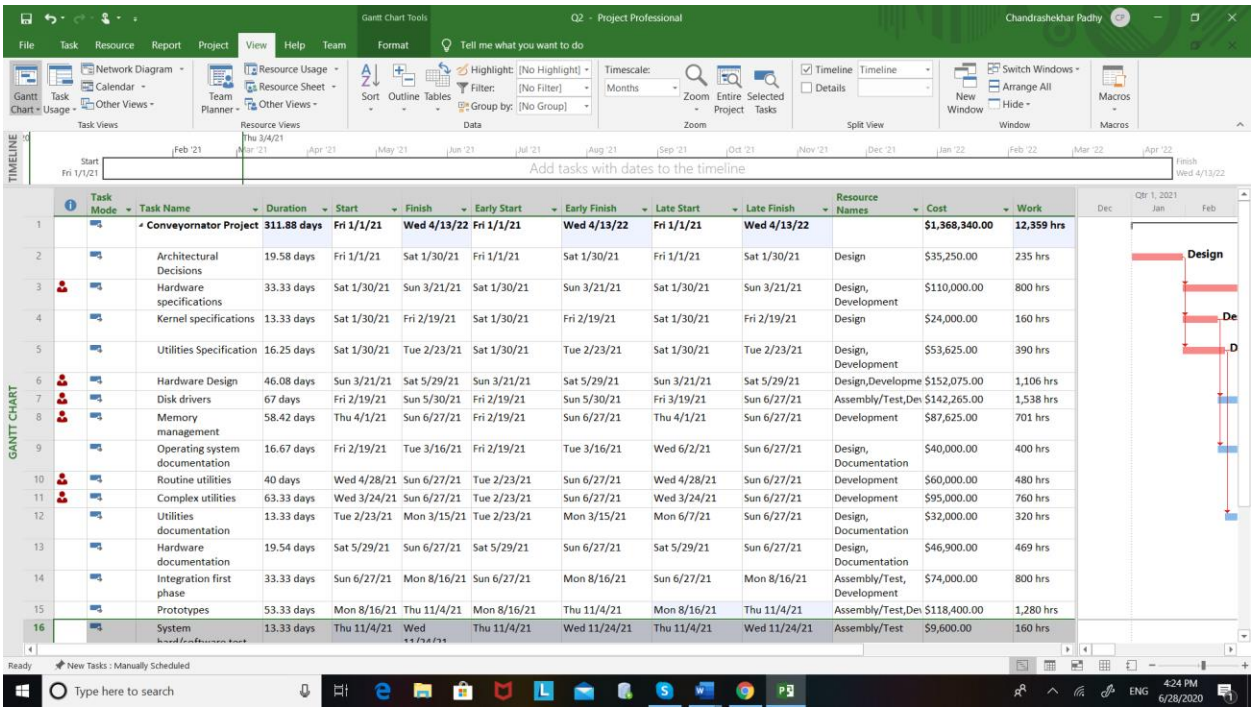
	Task Mode	Task Name	Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Resource Names	Cost	Work
8		Memory management	58.42 days	Thu 4/1/21	Sun 6/27/21	Fri 2/19/21	Sun 6/27/21	Thu 4/1/21	Sun 6/27/21	Development	$87,625.00	701 hrs
9		Operating system documentation	16.67 days	Fri 2/19/21	Tue 3/16/21	Fri 2/19/21	Tue 3/16/21	Wed 6/2/21	Sun 6/27/21	Design, Documentation	$40,000.00	400 hrs
10		Routine utilities	40 days	Wed 4/28/21	Sun 6/27/21	Tue 2/23/21	Sun 6/27/21	Wed 4/28/21	Sun 6/27/21	Development	$60,000.00	480 hrs
11		Complex utilities	63.33 days	Wed 3/24/21	Sun 6/27/21	Tue 2/23/21	Sun 6/27/21	Wed 3/24/21	Sun 6/27/21	Development	$95,000.00	760 hrs
12		Utilities documentation	13.33 days	Tue 2/23/21	Mon 3/15/21	Tue 2/23/21	Mon 3/15/21	Mon 6/7/21	Sun 6/27/21	Design, Documentation	$32,000.00	320 hrs
13		Hardware documentation	19.54 days	Sat 5/29/21	Sun 6/27/21	Sat 5/29/21	Sun 6/27/21	Sat 5/29/21	Sun 6/27/21	Design, Documentation	$46,900.00	469 hrs
14		Integration first phase	33.33 days	Sun 6/27/21	Mon 8/16/21	Sun 6/27/21	Mon 8/16/21	Sun 6/27/21	Mon 8/16/21	Assembly/Test, Development	$74,000.00	800 hrs
15		Prototypes	53.33 days	Mon 8/16/21	Thu 11/4/21	Mon 8/16/21	Thu 11/4/21	Sun 9/5/21	Wed 11/24/21	Assembly/Test,Dev	$118,400.00	1,280 hrs
16		Serial I/O drivers	66.67 days	Mon 8/16/21	Wed 11/24/21	Mon 8/16/21	Wed 11/24/21	Mon 8/16/21	Wed 11/24/21	Development	$100,000.00	800 hrs
17		System hard/software test	13.33 days	Wed 11/24/21	Tue 12/14/21	Wed 11/24/21	Tue 12/14/21	Wed 11/24/21	Tue 12/14/21	Assembly/Test	$9,600.00	160 hrs
18		Order printed circuit boards	3.33 days	Tue 12/14/21	Sun 12/19/21	Tue 12/14/21	Sun 12/19/21	Wed 12/22/21	Sun 12/26/21	Purchasing	$1,600.00	40 hrs
19		Network interface	60 days	Tue 12/14/21	Mon 3/14/22	Tue 12/14/21	Mon 3/14/22	Tue 12/14/21	Mon 3/14/22	Development	$90,000.00	720 hrs
20		Shell	33.33 days	Tue 12/14/21	Fri 2/4/22	Tue 12/14/21	Fri 2/4/22	Fri 1/21/22	Mon 3/14/22	Development	$50,000.00	400 hrs
21		Project documentation	30.54 days	Tue 12/14/21	Thu 2/10/22	Tue 12/14/21	Thu 2/10/22	Sun 1/16/22	Mon 3/14/22	Development, Documentation	$35,000.00	400 hrs
22		Assemble preproduction	18.54 days	Mon 2/7/22	Mon 3/7/22	Mon 2/7/22	Mon 3/7/22	Tue 2/15/22	Mon 3/14/22	Assembly/Test, Development	$37,000.00	400 hrs
23		Integrated acceptance test	33.33 days	Mon 3/14/22	Tue 5/3/22	Mon 3/14/22	Tue 5/3/22	Mon 3/14/22	Tue 5/3/22	Assembly/Test, Development	$74,000.00	800 hrs

2) Increased the work capability of resources : Design – 300%, Development – 200%, Documentation – 200%, Assembly/Test – 150%, Purchasing – 150%
- This resulted in a total saving of around ($1,481,600 – $1,470,265) $11,335
- Development was overallocated

3) Changed the work unit in hrs, to reduce the cost and thus affect the number of days to be worked.
- Manually Adjusted the unit rates to cope with the increase in hours of resources so that the cost does not go up.

4) Removed Serial I/O task and buy existing driver suite
- Reduced duration to 311.88 days from 325.5 days
- Reduced total cost by $1,01,925 ($1,470,265 - $1,368,340)
- Work hours become a total of 12,359 hrs.

	Task Mode	Task Name	Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Resource Names	Cost	Work
		Conveyornator Project	311.88 days	Fri 1/1/21	Wed 4/13/22	Fri 1/1/21	Wed 4/13/22	Fri 1/1/21	Wed 4/13/22		$1,368,340.00	12,359 hrs


Gantt Chart Tools
Q2 - Project Professional
Chandrashekhar Padhy
File Task Resource Report Project View Help Team Format
Tell me what you want to do
Gantt Chart
Task Usage
Network Diagram
Calendar
Other Views
Team Planner
Resource Usage
Resource Sheet
Other Views
Sort
Outline
Tables
Highlight: [No Highlight]
Filter: [No Filter]
Group by: [No Group]
Timescale: Months
Zoom
Entire Project
Selected Tasks
Timeline
Details
New Window
Switch Windows
Arrange All
Hide
Macros
Task Views
Resource Views
Data
Zoom
Split View
Window
Macros
TIMELINE
Start Fri 1/1/21
Add tasks with dates to the timeline
Finish Wed 4/13/22
GANTT CHART
Task Mode
Task Name
Duration
Start
Finish
Early Start
Early Finish
Late Start
Late Finish
Resource Names
Cost
Work
1 Conveyornator Project 311.88 days Fri 1/1/21 Wed 4/13/22 Fri 1/1/21 Wed 4/13/22 Fri 1/1/21 Wed 4/13/22 $1,368,340.00 12,359 hrs
2 Architectural Decisions 19.58 days Fri 1/1/21 Sat 1/30/21 Fri 1/1/21 Sat 1/30/21 Fri 1/1/21 Sat 1/30/21 Design $35,250.00 235 hrs
3 Hardware specifications 33.33 days Sat 1/30/21 Sun 3/21/21 Sat 1/30/21 Sun 3/21/21 Sat 1/30/21 Sun 3/21/21 Design, Development $110,000.00 800 hrs
4 Kernel specifications 13.33 days Sat 1/30/21 Fri 2/19/21 Sat 1/30/21 Fri 2/19/21 Sat 1/30/21 Fri 2/19/21 Design $24,000.00 160 hrs
5 Utilities Specification 16.25 days Sat 1/30/21 Tue 2/23/21 Sat 1/30/21 Tue 2/23/21 Sat 1/30/21 Tue 2/23/21 Design, Development $53,625.00 390 hrs
6 Hardware Design 46.08 days Sun 3/21/21 Sat 5/29/21 Sun 3/21/21 Sat 5/29/21 Sun 3/21/21 Sat 5/29/21 Design,Developme $152,075.00 1,106 hrs
7 Disk drivers 67 days Fri 2/19/21 Sun 5/30/21 Fri 2/19/21 Sun 5/30/21 Fri 3/19/21 Sun 6/27/21 Assembly/Test,De $142,265.00 1,538 hrs
8 Memory management 58.42 days Thu 4/1/21 Sun 6/27/21 Fri 2/19/21 Sun 6/27/21 Thu 4/1/21 Sun 6/27/21 Development $87,625.00 701 hrs
9 Operating system documentation 16.67 days Fri 2/19/21 Tue 3/16/21 Fri 2/19/21 Tue 3/16/21 Wed 6/2/21 Sun 6/27/21 Design, Documentation $40,000.00 400 hrs
10 Routine utilities 40 days Wed 4/28/21 Sun 6/27/21 Tue 2/23/21 Sun 6/27/21 Wed 4/28/21 Sun 6/27/21 Development $60,000.00 480 hrs
11 Complex utilities 63.33 days Wed 3/24/21 Sun 6/27/21 Tue 2/23/21 Sun 6/27/21 Wed 3/24/21 Sun 6/27/21 Development $95,000.00 760 hrs
12 Utilities documentation 13.33 days Tue 2/23/21 Mon 3/15/21 Tue 2/23/21 Mon 3/15/21 Mon 6/7/21 Sun 6/27/21 Design, Documentation $32,000.00 320 hrs
13 Hardware documentation 19.54 days Sat 5/29/21 Sun 6/27/21 Sat 5/29/21 Sun 6/27/21 Sat 5/29/21 Sun 6/27/21 Design, Documentation $46,900.00 469 hrs
14 Integration first phase 33.33 days Sun 6/27/21 Mon 8/16/21 Sun 6/27/21 Mon 8/16/21 Sun 6/27/21 Mon 8/16/21 Assembly/Test, Development $74,000.00 800 hrs
15 Prototypes 53.33 days Mon 8/16/21 Thu 11/4/21 Mon 8/16/21 Thu 11/4/21 Mon 8/16/21 Thu 11/4/21 Assembly/Test,De $118,400.00 1,280 hrs
16 System 13.33 days Thu 11/4/21 Wed Thu 11/4/21 Wed 11/24/21 Thu 11/4/21 Wed 11/24/21 Assembly/Test $9,600.00 160 hrs
Qtr 1, 2021
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Design
Ready
New Tasks : Manually Scheduled
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Table for Changes 1,2 and 3 combined in one.

Activity	Description	Proposed Change for Reducing Overall Project Duration(Changes 1, 2 and 3)	Impact the Change has on Project Duration (Number of days the overall project duration is decreased as a result of making the change)	Impact the change has on Project Cost (Does the project cost increase, decrease or stay the same as a result of making the change? Calculate and list the exact dollar amount associated with the change)
1	Architectural Decisions	Changed from 30 to 19.58 days	650-10.42 = 639.58 Decreased by 10.42 days	36,000 – 35,250 = 750
2	Hardware specifications	Changed from 50 to 33.33 days	Decreased the overall project by 16.67 days	None
3	Kernel specifications			
4	Utilities Specification			
5	Hardware Design	Changed from 70 to 46.67 days	Decreased the overall duration by 23.33 days	154,000-152,075=1925
6	Disk drivers	Changed from 100 to 67 days	Decreased the overall duration by 33 days	148000 – 142265 = $5735
7	Memory management			
8	Operating system documentation			
9	Routine utilities			
10	Complex utilities	Changed from 95 to 63.33 days	Decreased the overall duration by 31.67 days	Resource allocation kept the amount same
11	Utilities documentation			
12	Hardware documentation	Changed from 30 to 19.54 days	Decreased the overall duration by 10.46 days	48,000-46,900 = 1100
13	Integration first phase	Changed from 50 to 33.33 days	Decreased the overall project by 16.67 days	None
14	Prototypes	Changed from 80 to 53.33 days	Decreased the overall project by 26.67 days	118400 total cost
15	Serial I/O drivers			
16	System hard/software test	Changed from 20 to 13.33 days	Decreased the overall project by 6.7 days	None
17	Order printed circuit boards	Changed from 5 to 3.33 days	Decreased the overall project by 1.67 days	None
18	Network interface			
19	Shell			
20	Project documentation			
21	Assemble preproduction	Changed from 25 to 18.54 days	Decreased the overall project by 6.46 days	None

22	Integrated acceptance test	Changed from 50 to 33.33 days	Decreased the overall project by 16.67 days	None

Table for Change No. 4 – Changes 1,2,3 included and similar to the previous table.
Duration : 311.88
Total cost : $1,368,340
Work Hours : 12,359 hrs

Activity	Description	Proposed Change for Reducing Overall Project Duration(Change 4)	Impact the Change has on Project Duration (Number of days the overall project duration is decreased as a result of making the change)	Impact the change has on Project Cost (Does the project cost increase, decrease or stay the same as a result of making the change? Calculate and list the exact dollar amount associated with the change)
1	Architectural Decisions	Remains Same		
2	Hardware specifications			
3	Kernel specifications			
4	Utilities Specification			
5	Hardware Design			
6	Disk drivers			
7	Memory management			
8	Operating system documentation			
9	Routine utilities			
10	Complex utilities			
11	Utilities documentation			
12	Hardware documentation			
13	Integration first phase			
14	Prototypes			
15	Serial I/O drivers	Removed	Removed	Removed
16	System hard/software test			
17	Order printed circuit boards			
18	Network interface			
19	Shell			
20	Project documentation			
21	Assemble preproduction			
22	Integrated acceptance test			

b. What is the finish date of your revised project?

Ans: The revised date is **4/13/2022**.

c. What is the cost of your revised project? How does this cost compare to the cost in question 2?

Ans: The cost of the revised project is $1,368,340.00 which is ($1,481,600.00 – $1,368,340.00) **$1,13,260** less than the amount in question 2.

d. Please find attached the required file for question 3d.