**CIS 5675**

**Summer 2019**

**Project information**

Final project is based on the scenario presented in Case 9.3, “Nightingale Project -A”, pages 332-333, with these modifications: the project start date is: July 1, 2019 and the MedCon conference date is June 25, 2020. Make sure to incorporate the Technical Details presented in the Case Appendix, page 334.

The project has three parts. Answer the questions of each part in a word document. The word document, pdf file and the MS Project files, will be submitted as a zipped folder in Blackboard.

**Part 1**

Create a MS Project file named ‘Part1’. Enter the information about the Nightingale project.

1-When is the project estimated to be completed? How long will the project take? Will it meet the June 25 deadline?

* Estimated Finish of project is 05/25/2020

2- What is the critical path for the project?

3- Which activity has the greatest amount of slack?

4- Include a printout of the network diagram (set it up to fit into two pages). Name the file ‘Part1\_Network’.

**Part 2**

Make a copy of ‘Part1’ and name it ‘Part2’. In this part, you are going to assign resources to your project activities. Table below shows the number of teams available and their hourly rate.

|  |  |  |
| --- | --- | --- |
| **Resource** | **Teams Available** | **Hourly rate** |
| Design | 2 | $80/hr |
| Development | 2 | $60/hr |
| Assembly/test | 2 | $70/hr |
| Procurement | 1 | $40/hr |

The table in the next page represents resource assignments for each activity. After you assign resources, answer these questions:

1- Which if any resources are overallocated?

2- Close the file and create a copy named ‘Part2A’. Assume project is time constrained and try to resolve any overallocation problem by levelling within the slack. What happens? Discuss changes in resource needs and how that impacts the network sensitivity.

3- Create another copy of ‘Part2’ file and name it ‘Part2B’. Assume that the project is resource constrained. How long will the project take given the resources assigned? (No splitting allowed).

|  |  |
| --- | --- |
| **Activity Name** | **Resource Names** |
| Architectural decisions | Design [1 team] |
| Internal specifications | Design [1 team] |
| External specifications | Design [1 team] |
| Feature specifications | Design [2 teams] |
| Voice recognition | Development[2 teams] |
| Case | Development [1 team] |
| Screen | Development [1 team] |
| Speaker output jacks | Development [1 team] |
| Tape mechanism | Development [1 team] |
| Database | Development [1 team] |
| Microphone/soundcard | Development [1 team] |
| Pager | Development [1 team] |
| Barcode reader | Development [1 team] |
| Alarm clock | Development [1 team] |
| Computer I/O | Development [1 team] |
| Review design | Design[50% of 1 team time ] |
| Price components | Procurement [1 team] |
| Integration | Assembly/Test [1 team] |
| Document design | Design[50% of 1 team time] |
| Procure prototype components | Procurement [1 team] |
| Assemble prototypes | Assembly/Test [1 team] |
| Lab test prototypes | Assembly/Test [1 team] |
| Field test prototypes | Assembly/Test [1 team] |
| Adjust design | Design [50% of 1 team time] |
| Order stock parts | Procurement [50% of 1 team time] |
| Order custom parts | Procurement [50% of 1 team time] |
| Assemble first production unit | Assembly/Test [1 team] |
| Test unit | Assembly/Test [1 team] |
| Produce 30 units | Assembly/Test [2 teams] |
| Train sales representatives | Development [1 team] |

**Part 3**

After trying both resource-constrained and time-constrained scenarios, you decided to go with the time-constrained option to meet the deadline. Create a copy of ‘Part2’ and name it ‘Part3A’. Increase the number of available development teams to 4. Apply levelling within slack and save the file as a baseline.

1- Using ‘Part3A’ file, determine how much will the project cost. Include a monthly cash flow chart of the project with your answer (copy and paste in the word document).

2- Which is the most expensive activity?

3- Create a copy of ‘Part3A’ and name it ‘Part3B’. Assume today is 8/30/2019. Table below contains the tracking information for the project until now.

|  |  |  |  |
| --- | --- | --- | --- |
| **Task Name** | **Actual Start** | **Actual Finish** | **% Complete** |
| Architectural decisions | 7/1/19 | 7/15/19 | 100% |
| Feature specifications | 7/16/19 | 8/8/19 | 100% |
| Microphone/soundcard | 8/9/19 | 8/15/19 | 100% |
| Internal specifications | 8/9/19 |  | 85% |
| External specifications | 8/9/19 |  | 85% |
| Database | 8/9/19 |  | 30% |
| Computer I/O | 8/9/19 | 8/20/19 | 100% |
| Pager | 8/16/19 | 8/26/19 | 100% |
| Alarm clock | 8/16/19 | 8/30/19 | 100% |
| Barcode reader | 8/23/19 | 8/30/19 | 100% |

1. How is the project progressing in terms of cost and schedule? What are CV, SV, CPI and SPI?

* In terms of cost, the project is currently over the budgeted or baseline amount. This is because the Earned Value(EV) is less that the Actual Cost(AC).
* In terms of schedule, the project is currently behind the schedule.

CV = -$11,520.00

SV= -$7,0008.00

CPI= 0.84

SPI= 0.9

1. Which activities have gone well and which have not?

3-Whatdoes the PCIB indicates in terms of how much of the project has been accomplished so far?

After calculating PCIB, Based on planned budget, 30.87 % of the project has been accomplished.

4-What is the forecasted date of completion and cost at completion?

The forecasted date of completion is 06/24/2020

The forecasted cost at completion is $236,435.56

5- Report and interpret the TCPI for the project at this point in time.

According to TCPI of the project, the project must be 9% more efficient to stay on budget.