Quiz

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**Question 1**(25 points)

*Saved*

Assume the following activities for a project along with their estimated durations and predecessors. Calculate activity durations and construct a network diagram based on the information in the table. Then answer the following questions. When specifying a path in your answer, refer to the path in terms of its activities, e.g. Path R-S-T-X-Z. Also, be sure to show intermediate work if you want partial credit.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Activity | Predecessor | Optimistic Estimated Duration | Most Likely Estimated Duration | Pessimistic Estimated Duration |
| A | None | 1 | 1 | 2 |
| B | A | 2 | 3 | 5 |
| C | A | 3 | 6 | 8 |
| D | B | 1 | 2 | 3 |
| E | B | 1 | 1 | 2 |
| F | C | 3 | 4 | 6 |
| G | E | 5 | 7 | 11 |
| H | D | 2 | 3 | 5 |
| I | G, H | 1 | 1 | 1 |
| J | F | 3 | 4 | 6 |
| K | I, J | 2 | 2 | 3 |

1. What is the critical path and its length?
2. In an effort to deliver the work more quickly, one thought is to shift resources from Task B to Task C. This will have the effect of increasing the time of Task B by 2 units and decreasing the time of Task C by 2 units. Is this a good idea? Why?
3. In an effort to deliver the work more quickly, another thought is to shift resources from Task H to Task C. This has the effect of increasing the time of Task H by 2 units and decreasing the time of Task C by 2 units. Is this a good idea? Why?

Question 1 options:

|  |
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1. Using the Most Likely Estimated duration the crital path calculated is A-C-F-J-K

Three paths found are :

A-B-D-H-I-K = 1+3+2+3+1+2 =12

A-C-F-J-K = 1+6+4+4+2 = 17

A-B-E-G-I-K = 1+3+1+7+1+2 = 15

Thus the one with the longest time which is A-C-F-J-K is considered Critical path.

Expected time = 0+4M+P /6

A=1.2

B=2.2

C=3.8

D=1.3

E=0.8

F=2.8

G=5

H=2.2

I=0.67

J=2.8

K=1.5

A-B-D-H-I-K = 1.2+2.2+1.3+2.2+0.67+1.5 = 9.07

A-C-F-J-K = 1.2+3.8+2.8+2.8+1.5 = 12.1

A-B-E-G-I-K = 1.2+2.2+0.8+5+0.6+1.5 = 11.3

Using Expected time the value for critical path A-C-F-J-K comes out to be 12.1.

2.

Increase time of B by 2 units and decreasing time of C by 2 units

A-B-D-H-I-K = 1.2+4.2+1.3+2.2+0.67+1.5 = 11.07

A-C-F-J-K = 1.2+1.8+2.8+2.8+1.5 = 10.1

A-B-E-G-I-K = 1.2+4.2+0.8+5+0.6+1.5 = 13.3

This impacts the Critical path and A-C-F-J-K is no longer a Critical path. The new Critical path is A-B-E-G-I-K with 13.3 days as completion time. This is not a good idea since the total Project completion time has increased from 12.1 to 13.3 and thus would impact the Project cost and resource utilization.

3.

Task H= +2

Task C= -2

A-B-D-H-I-K = 1.2+2.2+1.3+4.2+0.67+1.5 = 11.07

A-C-F-J-K = 1.2+1.8+2.8+2.8+1.5 = 10.1

A-B-E-G-I-K = 1.2+2.2+0.8+5+0.6+1.5 = 11.3

This impacts the original Critical path and the new critical path now is A-B-E-G-I-K with a completion time of 11.3 days. This seems to be a better idea since now the Project completion time has decresed from 12.1 to 11.3 days and would result in the early delivery of the Project, which in turn would save time and resources.Bottom of Form

BRIEFLY describe the 4 risk management strategies (avoidance, acceptance, etc) and then, in DETAIL, discuss what factors determine the appropriate risk strategy to use?

Four Risk management strategies are :

Avoid: The best way to save the Project is to avoid any threats or risks that might put the success of the Project in jeopardy. To avoid a risk it is Project Managers job to look into the risk and its impact to the Project and then isolating the risk. If the risk is pertaining to a certain task then accordingly change the course of action by either reducing the Project objectives relating to that task or extend the Project completion time. Also if the risk is a bigger threat then Project can be halted until the solution of the risk is found or eliminated completely.

Transfer : If the risk cannot be completely eliminated then the risk can be trasfered to another party involved or concered with the Project completion. Transference just means to give the responsibility of managing the risk to another part with his/her consent. The most common way for a financial risk is transferring risk to Insurance companies when it is known that some of the financial risks are bound to happen . Even though you have to pay a Primium bond amount to get insured, once you face a financial loss the Insurance company would step in and take care of some percentage of the losses.

Mitigate : Mitigation is the process of dealing with the risk using a cushion to decrease its impact on the Project. When a risk is bound to happen such as a car accident A: we can get the car insured to reduce the cost of damage and B: Use safety belts and proper installation of air bags in the car. So in the event an accident does happen we have mitigate the risk of severe injuries or death by use of the air bags and safety belts.

Accept : This risk strategy is adapted as the last method when none of the previous methods work or are feasible to conduct. This simply does not mean we give up in the event risk occurs, it means we will take care of the issue when the event occurs since none of the strategies were financially healthy or were deviating too much from the scope/objective of the Project resulting in increased financial costs and delay in the Project completion.

We need to analyse the Risk to implement the risk strategy We need to create a Risk impact table and make a list of the Possible Risks, their Probability of occurance and Impact on the Project.

Based on these three columns then we decide the Management process and the Method/Strategy we are adopting.

To determine the strategy we need to find the Nature of the Risk : See if the risk is positive or negative and which areas it would typically impact . Also we need to find out where is this risk born out of and does it effect the project through out its lifecycle or just once.

Impact : This would tell us how can it challenge the project and in what ways can it try to curb the project progress. We need to know how much of a setback this risk could incur on the project .

Project Contraint : Can the risk be handled within whats already allocated to the Project in terms of finances , skillset of people involved, etc. If yes then well and good but if the risk cannot be handled within the Project constraints can additional resources be made available on time when the risk occurs. Will we be financially able to take care of the risk.

Tolerance of Risk : Can the Project be able to tolerate this risk among the others. Would the stakeholders and Project sponsors be able to handle the risk . Is the threat only for one stakeholders and not for others . Are the people involved serious towards mitigating or handling the risk properly.

Describe the estimation technique called the Delphi Technique. What are the strengths and weaknesses of this approach?

Delphi Technique : is the process of rounding up experts on the subject issue or matter to come to a common consensus. This is done in order to find the right method or a common view on the matter. This method is used when there is no known answer to a question or the right decision. Surveys are conducted by sending out the questionnare pamphlets to the group of experts and thier identities are kept confidential and anonymus with each other. The group facilitator then sums up all the comments and point of view recieved and then sends out this finalized pamphlet to the participants. It is upto the facilitator to decided if anothe round is needed or not depending upon if a decision or answer was achieved in the first round itself.

Strength :

- This process is time efficient as the participants just have to fill a questionare.

- Since it keeps the participants anonymous, there is no risk of the dominant participants to pressurize or influence the other participants. GIves space to one another.

- The responses are mutually exclusive to each other hence we know the answers are the honest opinions.

- The feedbacks are sent individually hence providing the participants to reconsider thier opinions in the company of thier own and not being influenced by the others.

Weakness :

- There is no method or guidelines pertaining to the questionnaire being sent.

- It is upto the participants how committed they are in answering each of the question and we cannot control the type or thoroughness of the answer that we want.

- There is no discussion among participants to analyze thier views on the subject.

- It is not necessary that even after four rounds of survey the facilitators arrives at a common consenses or true answer.

Explain the proper calculation, inclusion, and use of contingencies. Note: this is asking you for everything about the "life cycle" of contingencies from estimating to using. Be sure your answer is thorough.

Contingency is the occurance of an event however without the certainty of its occurance.

Contingency planning involves the preparation of if and when the event may occur. It can be considered a Plan B incase the Plan A doesnt work in terms of Project progress. It needs to be evolved using the current Project time estimate, Cost estimate and Risk management process.

Process Decision Program Charts is used to plan the contingency plan.

Contingency Reserve is the financial reserve for the Contingency plan need to be implemented. This can be calculated by = Cost overruns / Total cost

Life cycle of the Contingency plan includes the development of cost , resources, impact and preventive measures. Testing is also an important part of contingency plan.

Let us suppose the project is working under normal operation and then a power outage or network outage occurs occurs, thus in this would result in degraded mode of operation thus we go into Recovery Phase where we work from an alternate location and start resuming the services one by one to restore back to normal operations.

The objective of a contingency plan is to provide a common reference point for all the parties involved and provides a method to return to the normal operations as quickly as possible by reducing the impact on the project.