

# Assignment 3 - EE 4130

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## Question 1

You are a systems engineer working for Apple, in the division that manufactures the touch sensitive screens for their iPhone smart phones. Your purchasing department has informed you that due to a shortage of a key ingredient used to make the touch screens, the next order of screens may be delayed as much as 4 months from its due date. You have estimated that this delay would cost Apple \$300,000 in lost revenue.

Write a proper risk statement that captures this risk, in the format that was shown in lecture # 10. Also, choose one of the 4 risk handling approaches, and explain why you would use that approach to lessen the potential impact of this risk.

### Answer

Given that there is a of a shortage of a key ingredient used to make the touch screens, there is a possibility that the next order of screens may be delayed as much as 4 months from its due date and may cost Apple \$300,000 in lost revenue.

I would choose the mitigation approach. The reason why I would choose avoidance over acceptance, avoidance, or transfer is

1. Acceptance: this does nothing to help alleviate the risk. If there is a delay then it will definitely cost the company money.
2. Avoidance: changing the requirements or altering the design may end up costing the company even more money due to the extra time that must be spent redesigning the screen and other affected components.
3. Transfer: where would the risk be transferred to? Again, this does nothing to help the situation.

So, by choosing a proper mitigation approach perhaps the delay and/or cost can be reduced. For example, maybe there is another supplier of the key ingredient that can supply Apple. Or, maybe we can use Apple's considerable resources (monetary, social, or political influence) to become the company that is "first in line" to receive the ingredient once it becomes available which *may* reduce the delay.

## Question 2

In the activity diagram below in Figure 1, identify the critical path from the starting point (A) to the completion point (K), and explain how you came to your answer/solution. Task durations are in hours.

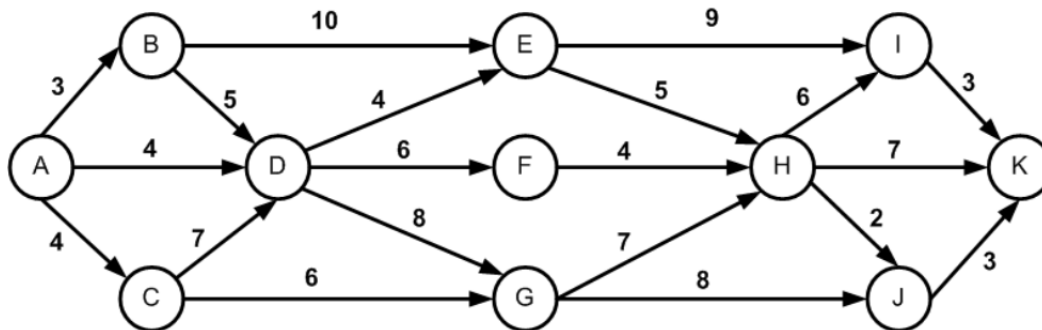


Fig. 1: Graph of task durations

### Answer

The solution to this problem (finding the *longest* path) can be found by summing the cost of each task along all of the possible paths. The longest path corresponds to the critical path for a project and in this instance is

$$A \Rightarrow C \Rightarrow D \Rightarrow G \Rightarrow H \Rightarrow K.$$

The critical path for the project ( $A \Rightarrow C \Rightarrow D \Rightarrow G \Rightarrow H \Rightarrow K$ ) has a total cost of  $(4 + 7 + 8 + 7 + 7)$  **33 hours**.