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Assignment 4

CEN 4010

1) Identify at least six possible risks that could arise in software projects. **(20 points)**
     a. Poor communication between the developers, stakeholders and the users may result in misunderstanding and incorrect goals.
     b. Wrong estimation or any unexpected expenses can lead to project failures.
     c. Frequent and or poorly managed changes in the requirements can lead to delays and increased costs.
     d. Neglecting the security during development can or may expose the software to cyber-attacks.
     e. Using new or untested technologies can cause unforeseen issues.
     f. Lack of qualified personnel or resources can cause project delays.

2) In what kind of situations might a business legitimately charge a lot more for a software system than the software cost estimate plus a healthy profit margin? **(20 points)**

   A business might legitimately charge significantly more for a software system than the cost estimate plus a healthy profit margin in several situations. For example, if the project requires unique expertise or specialized knowledge that few companies can provide, such as domain-specific solutions in healthcare or finance, the added value justifies a higher price. Similarly, when the project involves high levels of risk or uncertainty, like developing cutting-edge technology or integrating with complex legacy systems, the business may need to account for the challenges and potential failures. Urgent deadlines also create higher charges, as meeting tight timelines often requires reallocating resources, paying for overtime, or expediting testing processes. Extensive customization tailored to the client's specific needs, such as creating a unique enterprise solution, can be used to justify a premium cost due to the significant development effort involved. Additionally, if the software provides substantial value to the client, like increasing their revenue or reducing operational costs, businesses may use value-based pricing to align the price with the benefits delivered. Software that includes proprietary intellectual property, like exclusive algorithms or frameworks, can be priced higher to reflect the licensing or innovation value. In these scenarios, the added cost reflects the effort, risks, and value provided to the client.

3)

   - Fill the table according to the network diagram below. **(40 points)**

   - What is the critical path on this network diagram? **(20 points)**
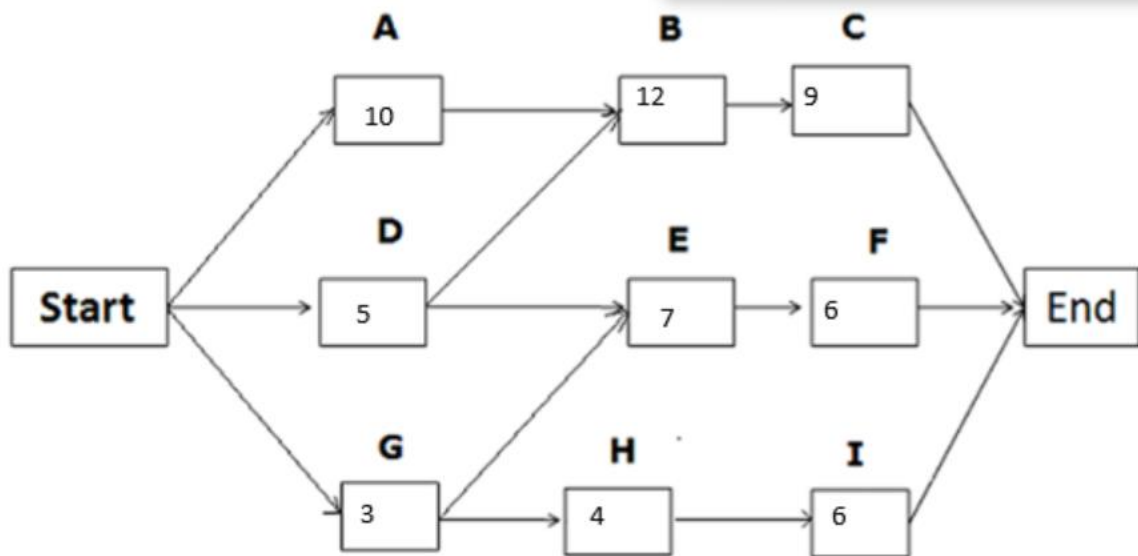
Activity	Duration	ES	EF	LS	LF	Slack
A	10	0	10	0	10	0
B	12	10	22	10	22	0
C	9	22	31	22	31	0
D	5	0	5	19	24	19
E	7	5	12	24	31	19
F	6	31	37	31	37	0
G	3	0	3	30	33	30
H	4	3	7	33	37	30
I	6	37	43	37	43	0

Critical Path: A → B → C → F → I

Total Project Duration: 43 units