Case Study Assignment #2

SYSC4106 – Software Economy and Project Management

Lecturer: Dr. Ahmed Raoof **Winter 2022**

INSTRUCTIONS: This is a graded assignment. Hence, all academic integrity rules and procedures apply.

- For case study assignments, you should work groups of two people.
- You can ask for TA's assistance during their office hours.

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1. **(50 Marks)** For the following activities (Time are in days):

Activity	Dependency	Duration	ES	EF	LS	LF	Float
A	NONE	10					
B	A	5					
C	B	15					
D	A	3					
E	A	8					
F	E	20					
G	D	6					
H	C,F,G	10					

   a. Complete the table. Use "End of day" for ES, EF, LS, and LF, which means the earliest start time for activity A is end of day "zero".

   b. Draw the activity network.

   c. What is the critical path and the project duration.

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2. **(50 Marks)** For the following activities (Times are in weeks – Calculations must be to TWO decimal points):

Activity	Predecessor	Optimistic	Normal	Pessimistic	t_e	S_1	S_2
A	NONE	6	7	9			
B	NONE	4	5	7			
C	NONE	7	9	15			
D	A	6	7	7			
E	B	4	7	8			
F	B	12	16	17			
G	C	8	12	20			
H	C	8	9	18			
I	D, E	10	16	18			
J	F, G	8	14	20			
K	H	9	9	14			

a. Calculate the expected time (t_e) for each activity.

b. Draw the activity network.

c. What is the critical path and the expected duration of the project?

d. Assume that the values in the table were made at 95% level.

1. Using the table, find the standard deviation, S_1, for each activity.
2. Update the activity network with the S_1, then find the probability that the critical path will completed in 38 weeks or less.

e. Repeat (d) with 99% level for S_2.

f. Briefly explain the differences between the two results from (d-1) and (e-1) above.