Assignment 1

Decision tree

Suppose you are a project manager of a power plant project and there is a penalty in your contract with the main client for every day you deliver the project late. You need to decide which sub-contractor is appropriate for your projects critical path activities. But while selecting a sub-contractor, you should take into consideration the costs and delivery dates.

• Sub-contractor1 bids $250,000. You estimate that there is a 30% possibility of completing 60 days late. As per your contract with the client, you must pay a delay penalty of $5,000 per calendar day for every day you deliver late.

• Sub-contractor2 bids $320,000. You estimate that there is a 10% possibility of completing 20 days late. As per your contract with the client, you must pay a delay penalty of $5,000 per calendar day for every day you deliver late.

You need to determine which sub-contractor is appropriate for your projects critical path activities. Both sub-contractors promise successful delivery and high-quality work.

Cost Benefit Analysis

The table below gives the estimated cash flow for three projects.

Year	Project 1	Project 2	Project 3
0	-1,75,000	-1,50,000	-2,00,000
1	20,000	10,000	-30,000
2	20,000	30,000	25,000
3	50,000	50,000	60,000
4	80,000	-20,000	80,000
5	80,000	90,000	20,000
6	90,000	60,000	20,000

Answer the following questions for each project

a) Calculate the Net profit

b) Calculate Payback period

c) Calculate Return on investment

d) Calculate NPVs by assuming a discount rate of 10%.

e) Compute the IRR of project 1.

Function Point

Given the project data below:

project	*inputs*	*outputs*	*entity accesses*	*system users*	*program-ming languag e*	*developer days*
1	*210*	*420*	*40*	*10*	*x*	*30*
2	*469*	*1406*	*125*	*20*	*x*	*85*
3	*513*	*1283*	*76*	*18*	*y*	*108*
4	*660*	*2310*	*88*	*200*	*y*	*161*
5	*183*	*367*	*35*	*10*	*z*	*22*
6	*244*	*975*	*65*	*25*	*z*	*42*
7	*1600*	*3200*	*237*	*25*	*y*	*308*
8	*582*	*874*	*111*	*5*	*z*	*62*
X	*180*	*350*	*40*	*20*	*y*	
Y	*484*	*1190*	*69*	*35*	*y*	

Note X and Y are new projects for which estimates of effort are needed.

a) What items are size drivers?
b) What items are productivity drivers?
c) What are the productivity rates for programming languages x, y and z?