Homework-4

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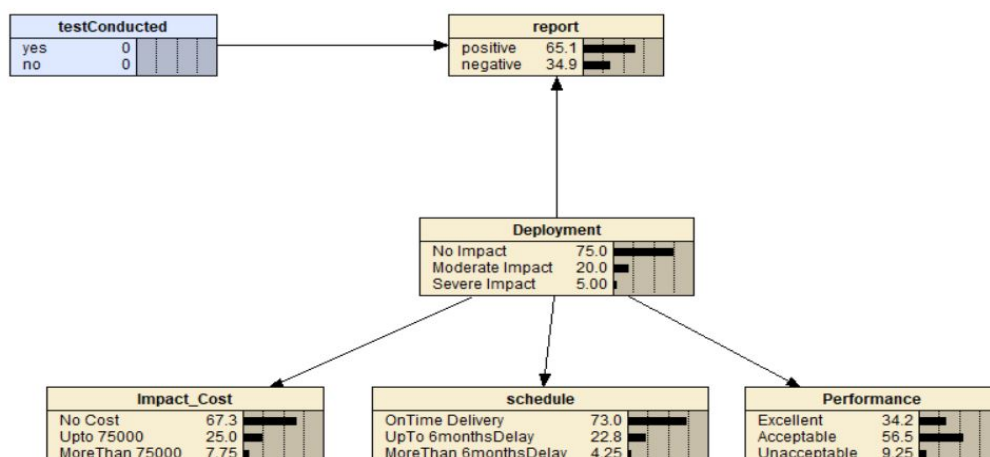G01065588

Problem:1

a) Construct a Bayesian network to model this problem.

NewTechDeployment

No Impact	75.0
Moderate Impact	20.0
Severe Impact	5.00

CostOfImpact

No	67.3
LessThan75000	25.0
MoreThan75000	7.75

Delivery

OnTime	73.0
LessThan6months	22.7
MoreThan6months	4.25

Performance

|	
Excellent	34.2
Acceptable	56.5
Unacceptable	9.25
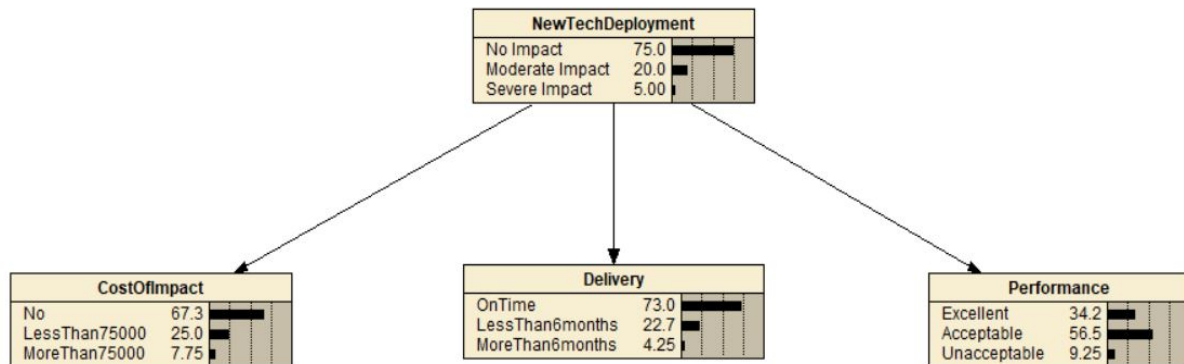
b) The program manager can let a small contract to an independent nonprofit firm to study the new technology. He believes if he runs the study, the report will make a positive recommendation with probability 90% if the new technology can be deployed successfully, with 60% probability if there are problems and issues that will have a moderate impact, and with 15% probability if there are problems and issues that will have severe impact. What is the posterior probability that the new technology will succeed, will have moderate problems, and will have severe problems if the study is conducted and the report comes out positive? If it comes out negative? Discuss your result

testConducted

yes	0
no	0

report

positive	65.1
negative	34.9

Deployment

No Impact	75.0
Moderate Impact	20.0
Severe Impact	5.00

Impact_Cost

No Cost	67.3
Upto 75000	25.0
MoreThan 75000	7.75

schedule

OnTime Delivery	73.0
UpTo 6monthsDelay	22.8
MoreThan 6monthsDelay	4.25

Performance

Excellent	34.2
Acceptable	56.5
Unacceptable	9.25

Problem 2:

Before making an unsecured loan to an individual a bank orders a report on the applicant's credit history. To justify making the loan, the bank must find the applicant's credit record to be satisfactory. Describe the bank's decision. What are the bank's objectives? What risk does the bank face? What role does the credit report play? Draw an influence diagram of this situation. (Hint: Your influence diagram should include chance nodes for a credit report and for eventual default.) Finally, be sure to specify everything (decisions, change events, objects) in your model clearly enough to pass the clarity test. (Note, this is problem 3.4 from Clemen Chp 3)
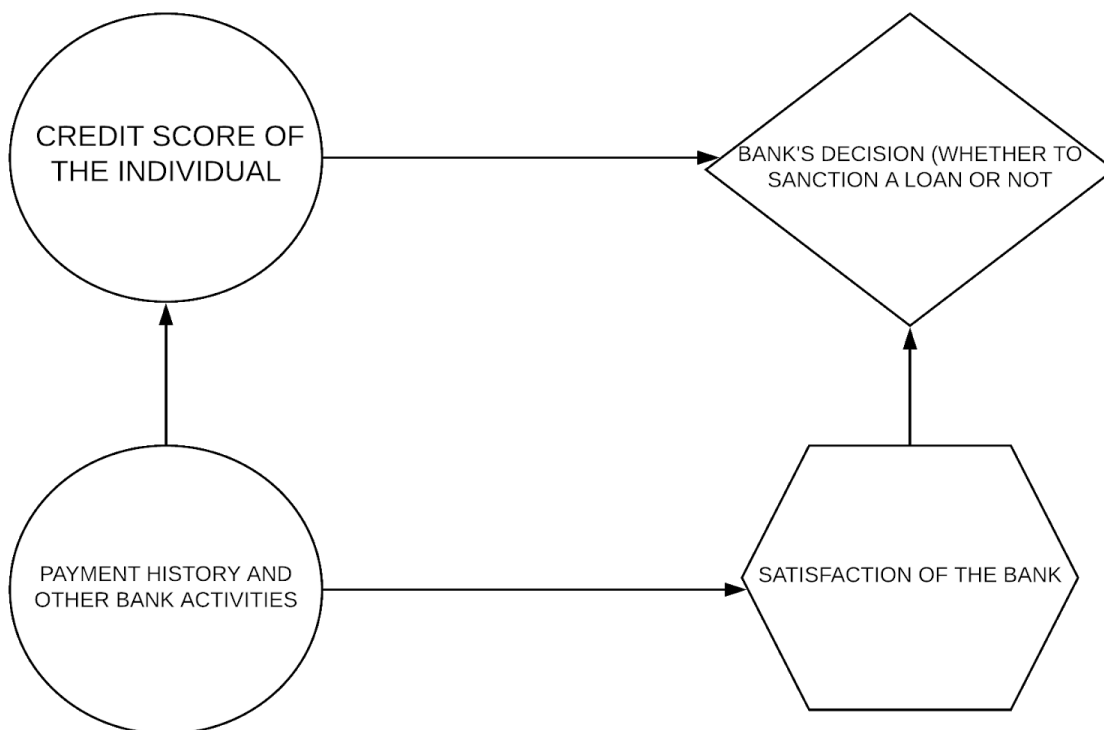
- The main aim of the bank is to provide secured loans to an individual. Every person has their own particular primary criteria (i.e, Credit score), using that bank checks the eligibility. Credit scores are assessed to everyone based on their background check like on-time interest payments, Clearing credit card debts and other activities.
- If the bank is satisfied with the scores of an individual, they can trust the person taking the loan without any extra securities.
- If the bank forgets to consider any major elements of the individual, there is a risk involved providing the loan without a proper background check.