TOCI-II ASSIGNMENT

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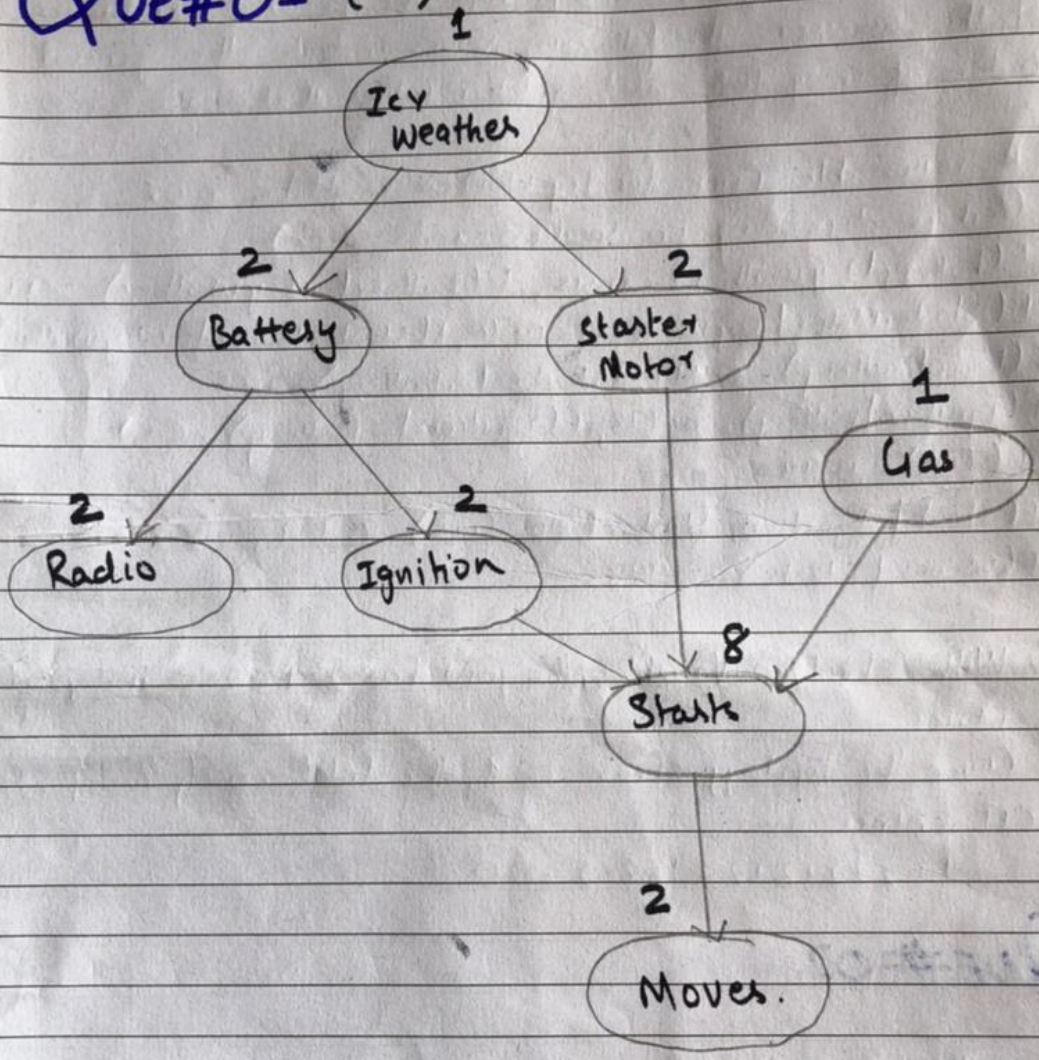
EP1850132

Date

QUE#01 (a)



* Icy Weather is not caused by any of the car related variables, So needs no Parents. It directly effects the battery and the starter Motor. Starter Motor is an additional Pre-condition for Starts. The new network can be shown above.

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(b) Reasonable probabilities may vary alot depending on the kind of car and perhaps the personal experience of the assessor. The following values indicate the general order of magnitude and relative values that make sense

- A reasonable prior for Icy weather might be 0.05 (Perhaps depending on location and season)
- P(battery | Icy weather) = 0.95, P(battery | ¬Icy weather) = 0.99.7
- P(StarterMotor | Icy weather) = 0.98, P(starterMotor | ¬ Icy weather) = 0.99
- P(Radio | Battery) = 0.999, P(Radio | ¬Battery) = 0.05
- P(Ignition | Battery) = 0.998, P(Ignition | ¬ Battery) = 0.0)
- P(Gas) = 0.995
- P(Starts | Ignition, Starter Motor, Gas) = 0.999, other entries = 0
- P(Moves | starts) = 0.998.

(c) With 8 boolean Variables, the joint has $2^8 - 1 = 255$ independent entries.

(d) Given the topology shown in 1, the total no. of independent CPT entries are:

$1 + 2 + 2 + 2 + 2 + 1 + 8 + 2 = 20$.

QUE#02.

ANS: It is impossible to combine the different approaches of Probablity. Boolean, discreate, and continous they all are different datatypes and cannot be combine in a single module. The reason can be that, the boolean and discreate results come Probablity wise and continous data majorly belongs to regression. So there is zero possibility of combining the diff approaches.

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QUES#03

(a) **RESIDUALS:** In other words residuals are called the difference between the actual value Points and estimated value Points which are also called errors
residuale can be calculated as.
Residuals = Actual Y - Estimated Y.

(b) In the above given example, It can be clearly seen that, we can easily draw the best fit line as all the Points are in linear direction and in this case, when actual values accurately fits on the best fit line then the Mean Squared training set error will be 1. In case there is error in b/w the actual and estimated values. then the value will lie between 0 to 0.9.

(c) The ans will be 1 because of the same reason in Part(b)

QUE#04

ANS: The Probablity of head is x and Probablity of tail is 1-x. When the value of x is well known, then the successive flips of the coin are independent to each other

In the second case, When the value of x is unknown to each other, then the Probablity of the successive flips is reliant on the outcome obtained from the last flip. In this case the flips are dependent. This is because for the better estimation of the Probablity, the information of the last flip will be helpful.

GCY