ARTIFICIAL INTELLIGENCE

LAB ASSIGNMENT – 14

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Q) Explain bayes rule and family tree?

Bayes rule:

It means if one event will occur then another will also occur one by one will occurred.

Bayes rule is also a conditional probability

Bayes rule is derived as from the product rule

P(A&B)=P(A/B)*P(B)-------------(1)

P(B&A)=P(B/A)*P(B)-------------(2)

P(B/A)=P(A/B)*P(B)/P(A)

It means event B will occur and event A already occurred.

Example:

Suppose we have the probability

Mike has a cold as 0.25

Mike was observed sneezing when he had cold in the past as 0.9

Mike was observed sneezing when he did not have cold as 0.2 Find the

probability of mike having a cold given that he sneezes?

Answer:

H=cold; E=sneeze

P(H)=0.25; P(E)=0.9; P(E/~H)=0.2 P(H/E)=?

We know that

P(H/E)=P(E/H)*P(H)/P(E/H)*P(H)+P(E/~H)*P(~H)

= P(E/H)*P(H)+P(E/~H)*P(~H)

=0.9*0.25+0.2*0.75

=0.9*0.25+1.40

=0.375
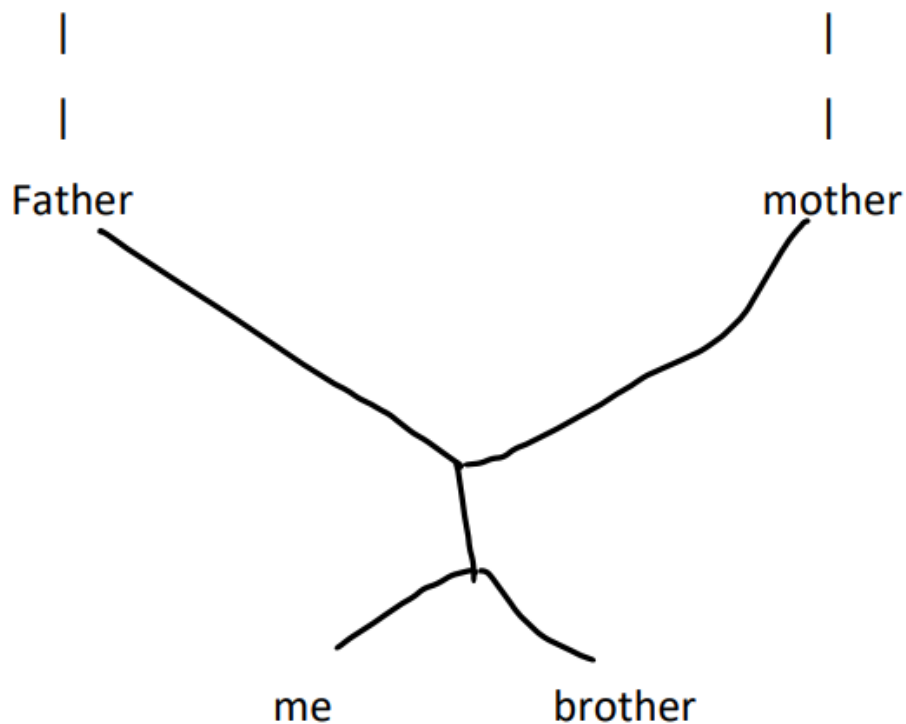
P(H/E)=P(E/H)P(H)/P(E)

=0.9*0.25/0.375

=0.6

FAMILY TREE:

A family tree is a visual representation of a person's lineage, tracing relationships to common ancestors.

For example taking our family:

Grand father/grand mother   grand father/grand mother

Father   mother

me   brother

like that free tree will be going on it is a real best example of family tree.