IF YOU CAN'T EXPLAIN IT SIMPLY, YOU DON'T UNDERSTAND IT WELL ENOUGH.

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Book 2 Reading 1
Fundamentals of Probability

Independent and Mutually exclusive events

Task1: Give an example of sample space, event space, event and outcome. (Use same set of case study for all terms)
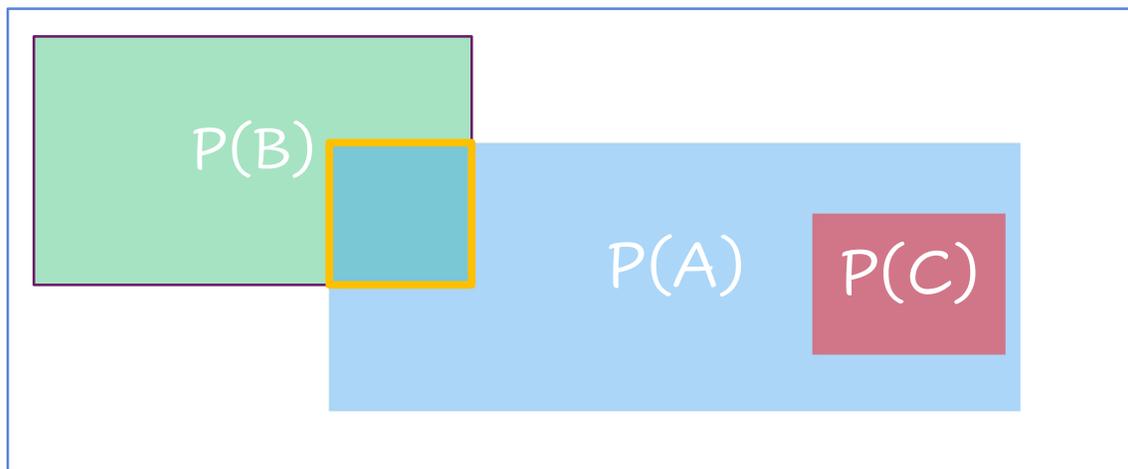
Sample space:-

Event space: -

Event: -

Outcome:-

Task2: Write down the type of events independent or mutually exclusive depicted by following venn diagram.

P(B)

P(A)   P(C)

Blue box indicates –

Yellow box indicates –

Mutually exclusive probabilities –

Task 3: From the above figure give real life example (simple or industry based) which can be put in above venn diagram. (illustration should include green, blue, red and yellow box)
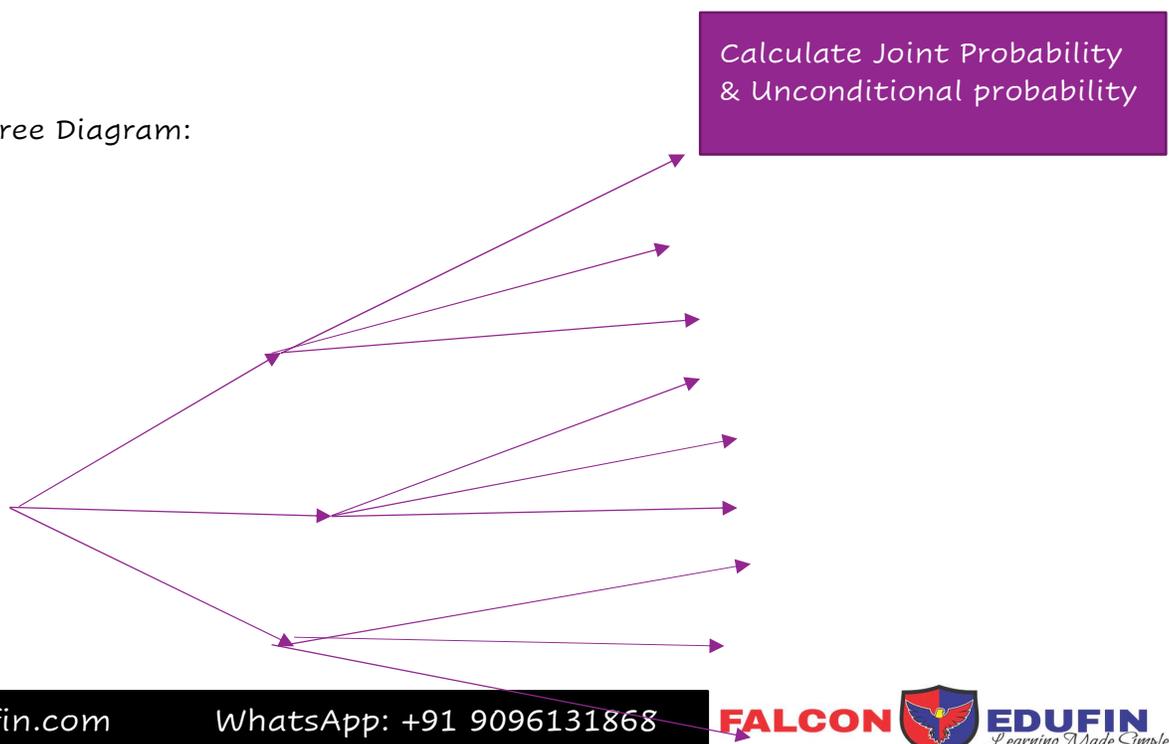
Ans-

Conditional probability and Unconditional probability

Task 4: write down full example of conditional probability and fill following tree diagram. (Do not use examples given in book or class).

Example:-

Calculate Joint Probability & Unconditional probability

Fill Tree Diagram:

Task 5: Lets assume P(A) is the probability of company defaulting in first year. If company survives then probability of company defaulting in second year is P(B). If company survives second year, probability of CEO will be replaced by new CEO is P(C). P(A) = 0.15, P(B) = 0.10 and P(C) = 0.50.

Question1: Calculate the probability of company defaulting in second year given company survives in first year.

Question2: Calculate the probability of company defaulting in second year and surviving in first year.

Question3: Probability of CEO will be changed at the end of second year.

Addition Rule

Task 6: The implementation of Basel III (Standards for Banking Regulation Part of your FRM Part II Studies) has been deferred by 1 year to 1 Jan 2023. These guidelines are applicable for specific set of banks. Ministry of Corporate Affairs MCA India is planning new set of regulations for Banks dealing with companies regulations (not linked with Basel) expected to be implemented by 1 Jan 2023. If Basel III is implemented as per the deadline, RBI will take down current regulations for the banks which are covered by Basel III regulations.

P(Basel III Implementation) = P(A) = 0.60

P(MCA Regulation Implementation) = P(B) = 0.20

P(RBI Guidelines imposed as it is) = P(C)

Calculate the following probabilities.

P(A or B) =

P(A or C) =

P(B or C) =

P(B or C) but not both =

Draw Venn diagram for above case study: -