



# SNS COLLEGE OF TECHNOLOGY

Coimbatore - 35



23BAT615 – Artificial Intelligence for Managers

Unit III – Unboxing AI & Its Applications



Presented by

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Design Thinker

Redesigning Common Mind & Business Towards Excellence

1<sup>st</sup> Indian  
Institution  
to Implement  
& Patent  
Design  
Thinking  
FrameWork

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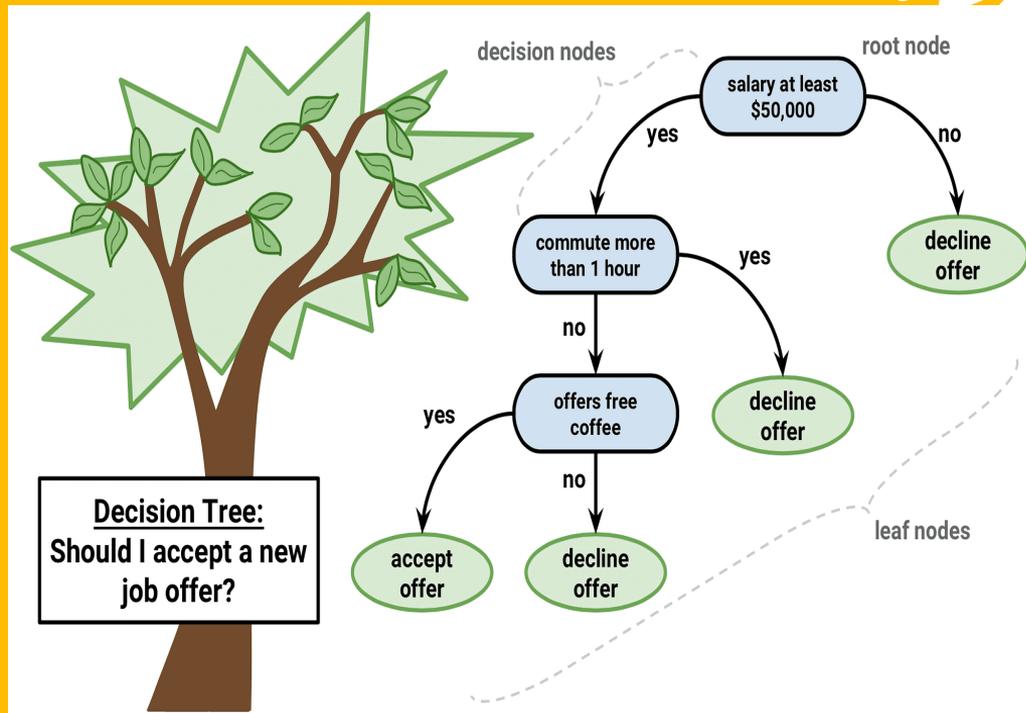
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CELEBRATING  
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Build an Entrepreneurial Mindset through our Design Thinking FrameWork



# Guess the Topic!!!

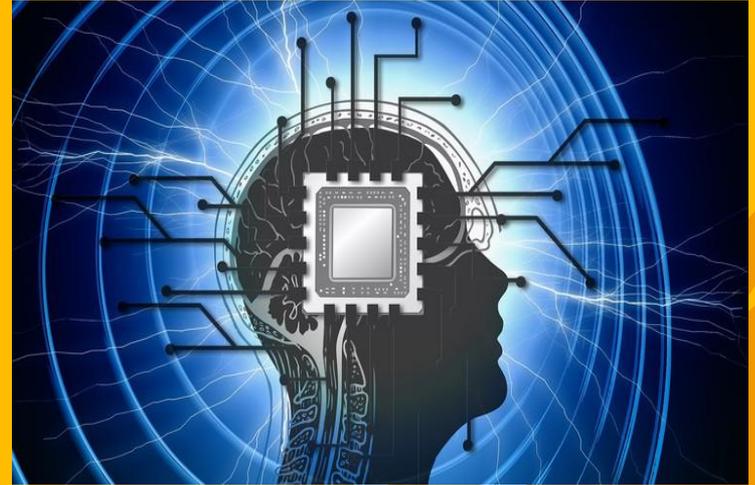
## Decision Tree





# Recap

- Reason to study Logistics Regression
- Logistics Regression
- Logistics Regression Model
- Logistics Regression for Sales of a New Product
- Pros and Cons
- Logistics Regression at a glance

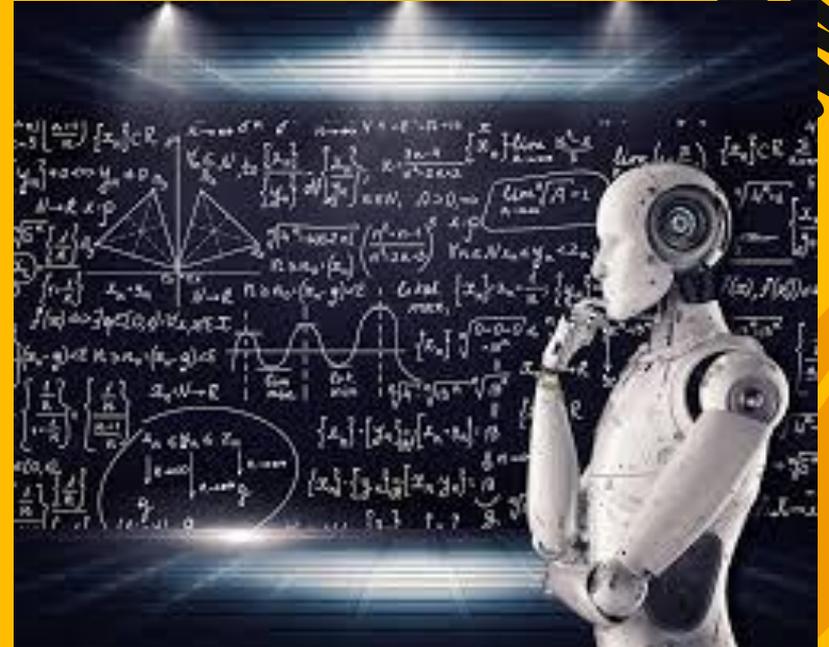




# Discussion about....

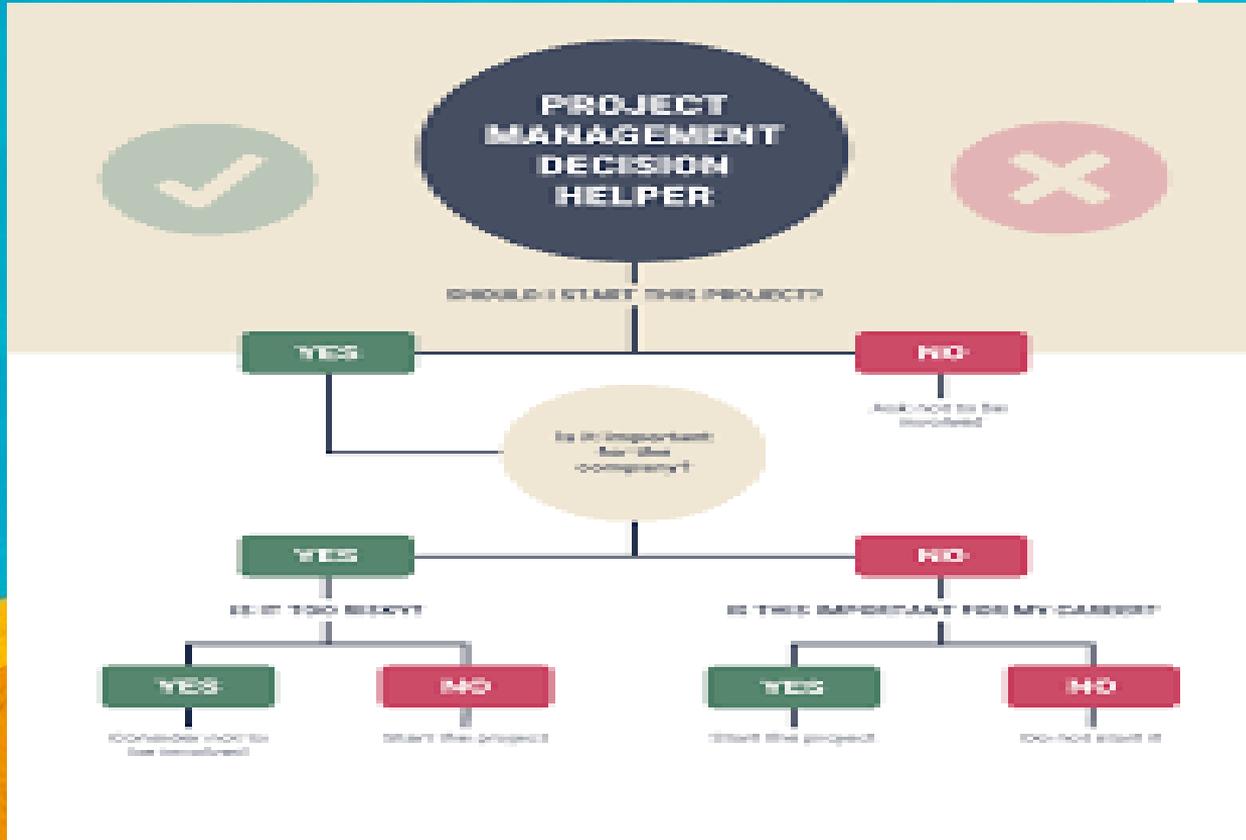
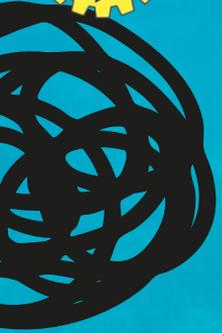
Reason to study Decision Tree

- Decision Tree in Business
- Elements of Decision Tree
- Decision Tree in Business
- Data Visualization in Decision Tree
- Decision Tree in Machine Learning





# Reason to study Decision Tree





# Decision Tree in Business



**DECISION TREE ANALYSIS** is a graphical presentation of all the possible options or solutions to the problem at hand & tool to helps people make better decisions.

- |          |                                 |
|----------|---------------------------------|
| <b>S</b> | 1. Specify the issue            |
| <b>T</b> | 2. Mention all possible answers |
| <b>E</b> | 3. Mention the probability      |
| <b>P</b> | 4. Determine all consequences   |
| <b>S</b> | 5. Calculate EMV of all options |

## KEY ELEMENTS

1. **Decision nodes:** It implies that an executive needs to make a choice.
2. **Branches:** These imply potential choices & help to connect all the nodes.
3. **Chance nodes:** These imply non guaranteed outcomes.
4. **End nodes:** These nodes show up only at the end and suggest a final outcome.
5. **Splitting:** This splits the available option into more than one sub-nodes.
6. **Pruning:** Opposite of splitting.

## ADVANTAGES

- Effective tool to pick best solution
- Easy to understand & interpret
- Gives the flexibility to add more data
- It suits all management styles
- This data works as an input for other analytical tools

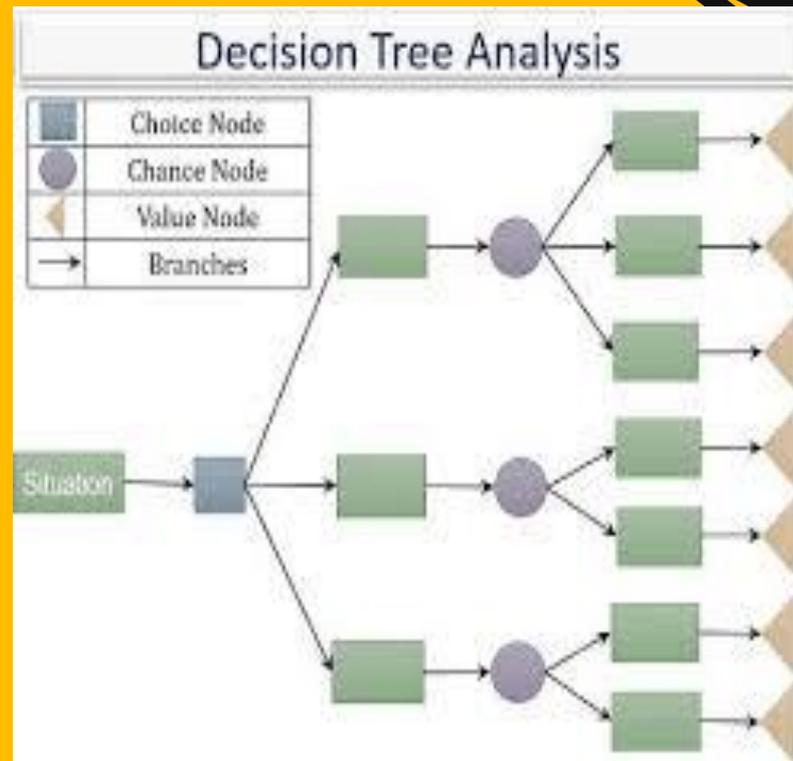
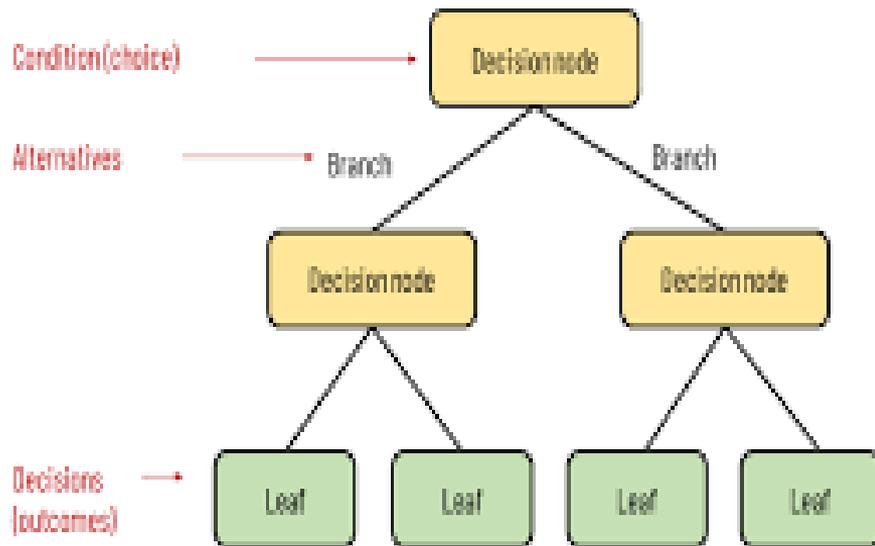
## DISADVANTAGES

- Collecting, classifying & analysis of data could prove a costly affair
- Use of several open-ended numerical variables raises the chances of errors
- Preparing this analysis can take a lot of time if there are several outcomes



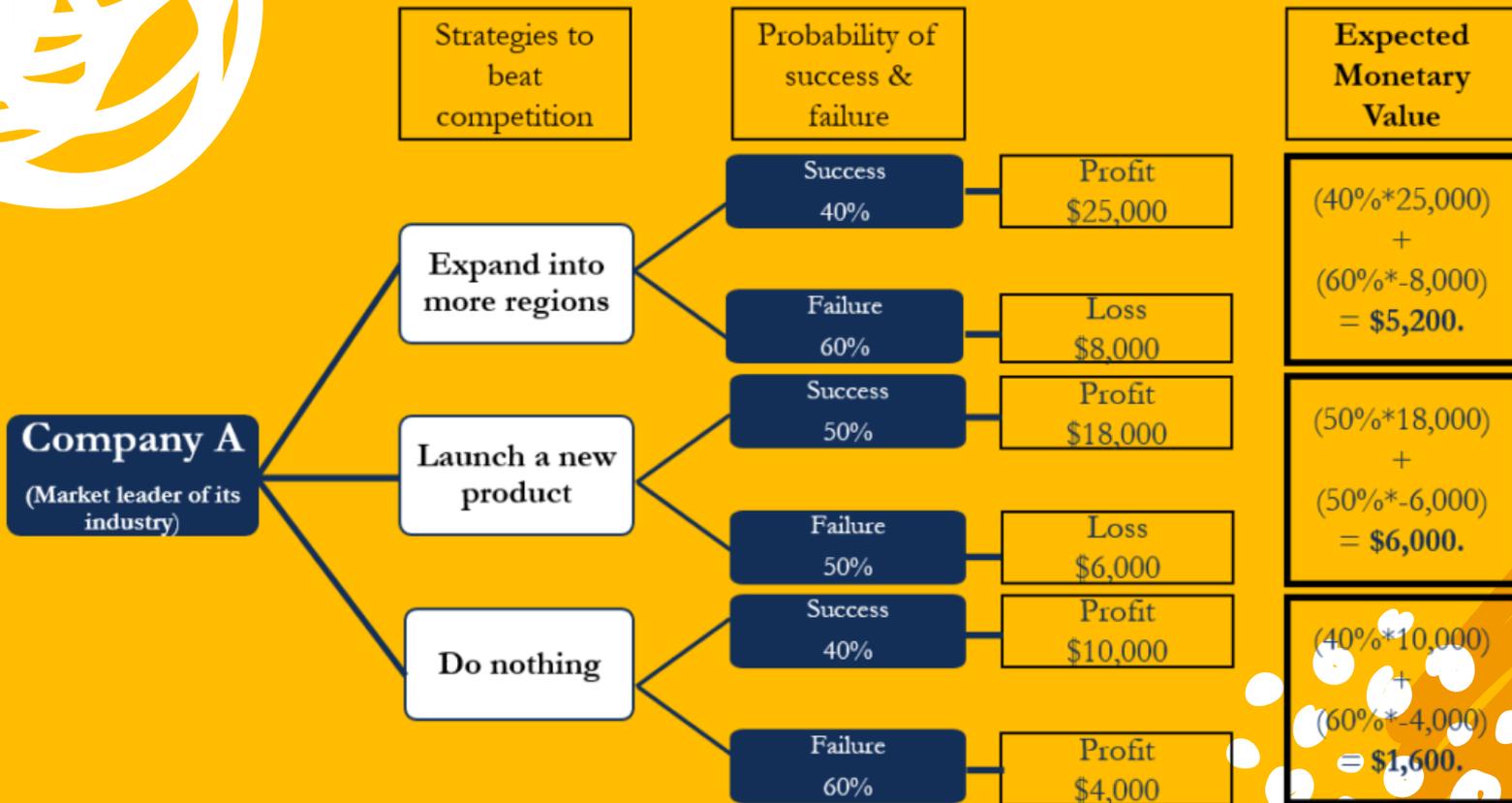
# Elements of Decision Tree

## Elements of a decision tree



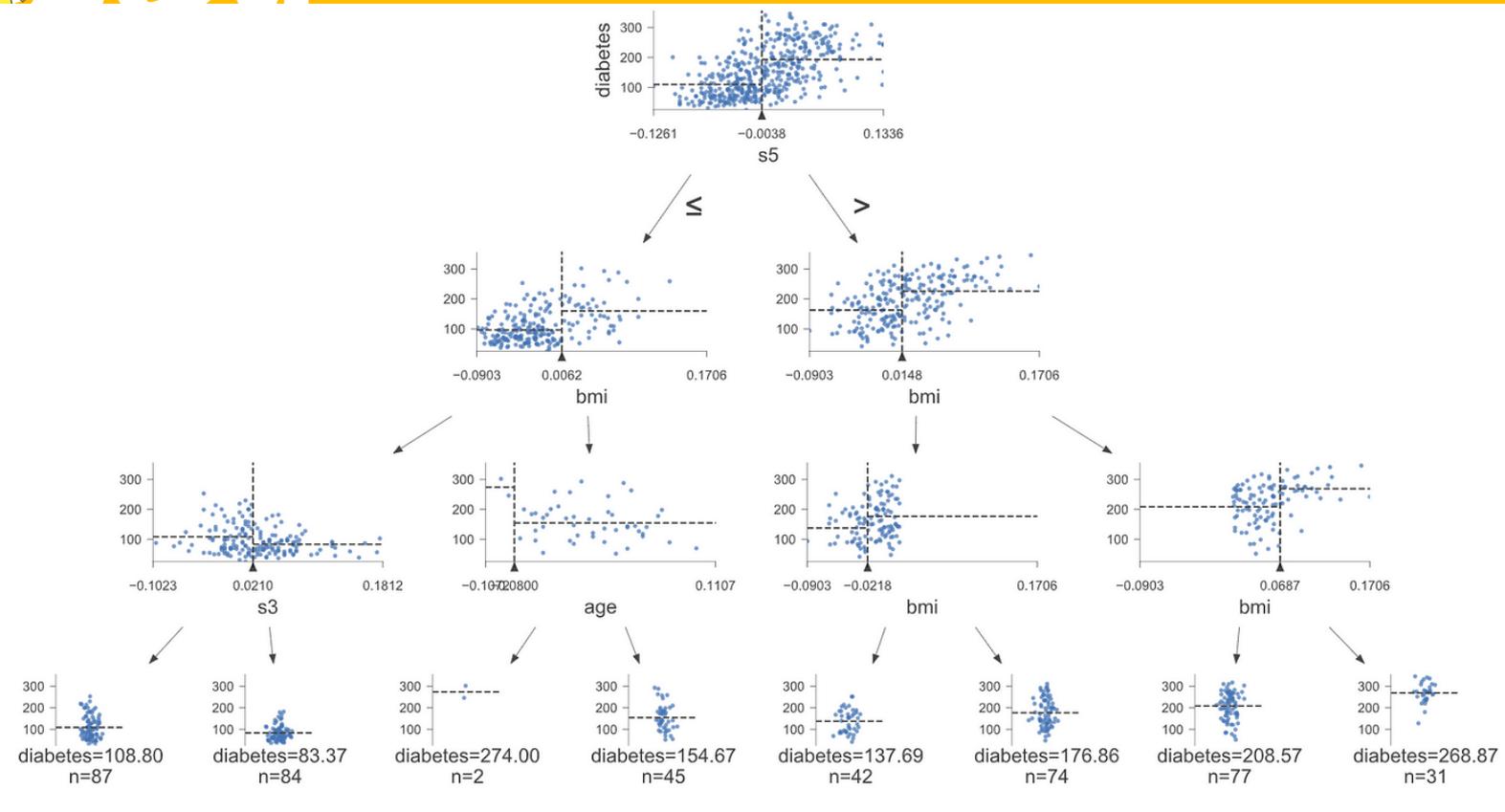


# Decision Tree in Business





# Data Story Visualization : A Decision Tree

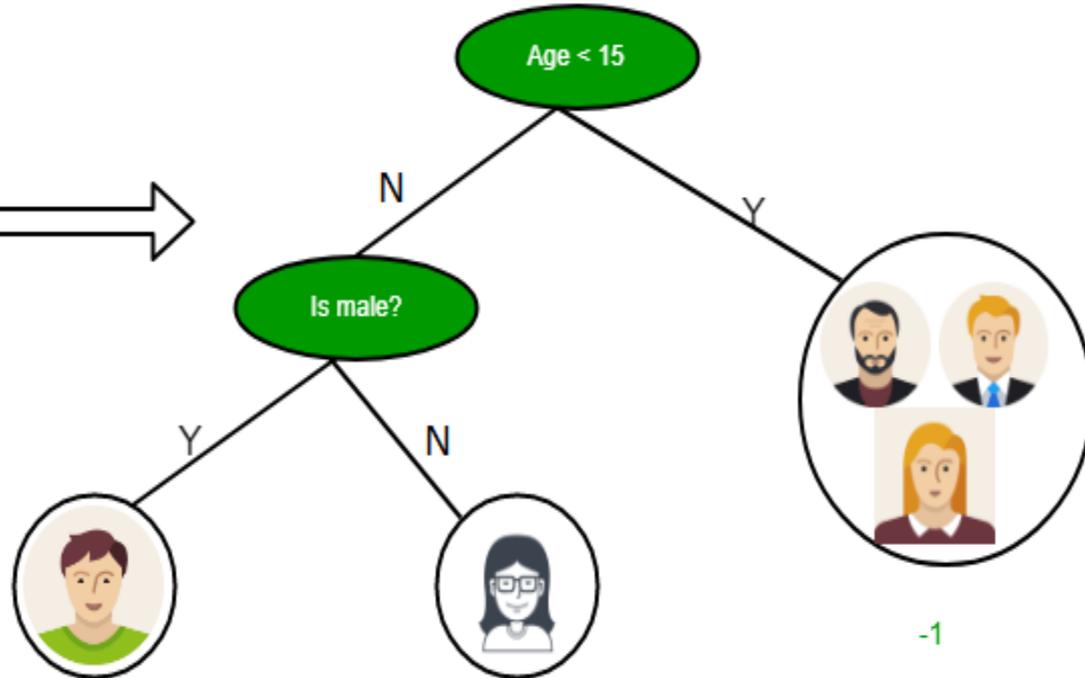
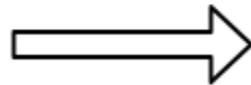




# Decision Tree in Machine Learning

Input: Age, Gender, Occupation, . .

Does the person likes computer games



Prediction score in each leaf → +2

+0.1

-1



# Knowledge Check

- X In a business context, decision trees are primarily used for:
- X A) Predicting future stock prices based on historical data.
- X B) Identifying key factors influencing customer churn.
- X C) Classifying customer feedback into positive or negative sentiments.
- X D) Calculating the optimal price point for a new product launch.
- X **Answer: B) Identifying key factors influencing customer churn.**



# Summary

- Reason to study Decision Tree
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  - Elements of Decision Tree
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  - Data Visualization in Decision Tree
  - Decision Tree in Machine Learning



WMA



# References

➤ <https://efinancemanagement.com/investment-decisions/decision-tree-analysis>



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# Thanks!

