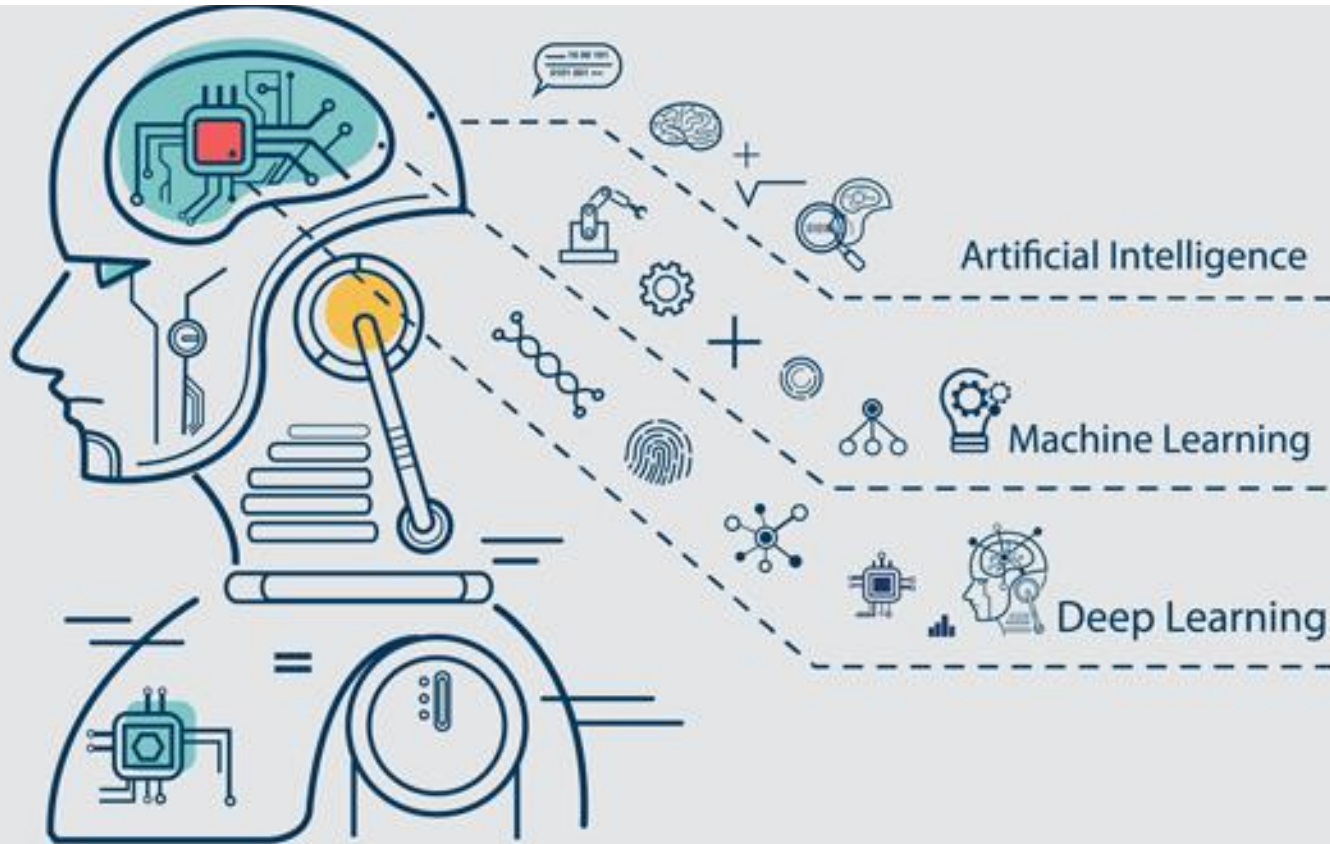


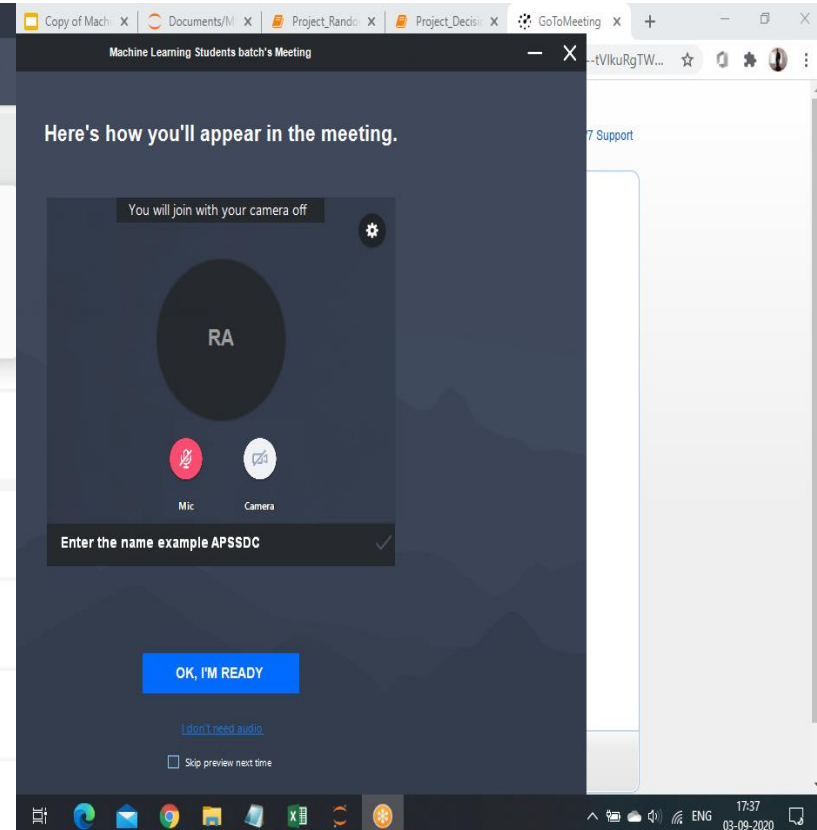
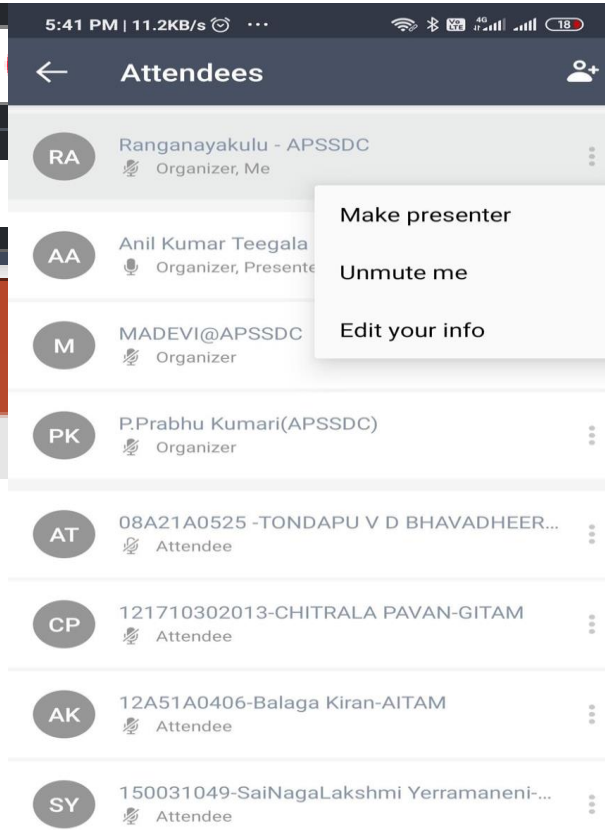
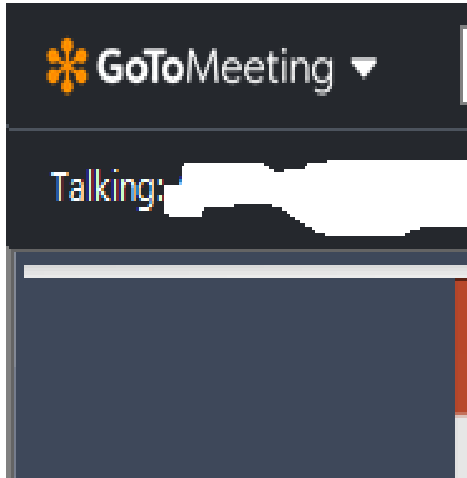


Andhra Pradesh State Skill Development Corporation(APSSDC)

(Department of Skill Development & Training, Govt. of Andhra Pradesh)



Roll Number - Name - College Name





Skill AP
APSSDC

Github Link: <http://bit.ly/apssdc-ml-eb6>

Attendance

Pre Requirements

Before Going to Machine Learning We need Some Pre Requirements

1. Numpy
2. Pandas
3. Matplotlib
4. Seaborn





2018 *This Is What Happens In An Internet Minute*



2019 *This Is What Happens In An Internet Minute*

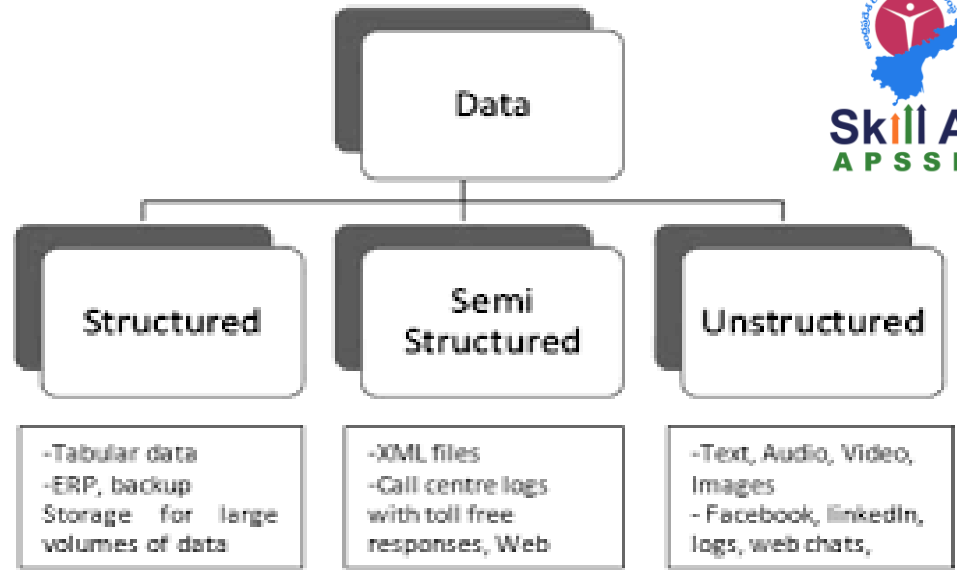


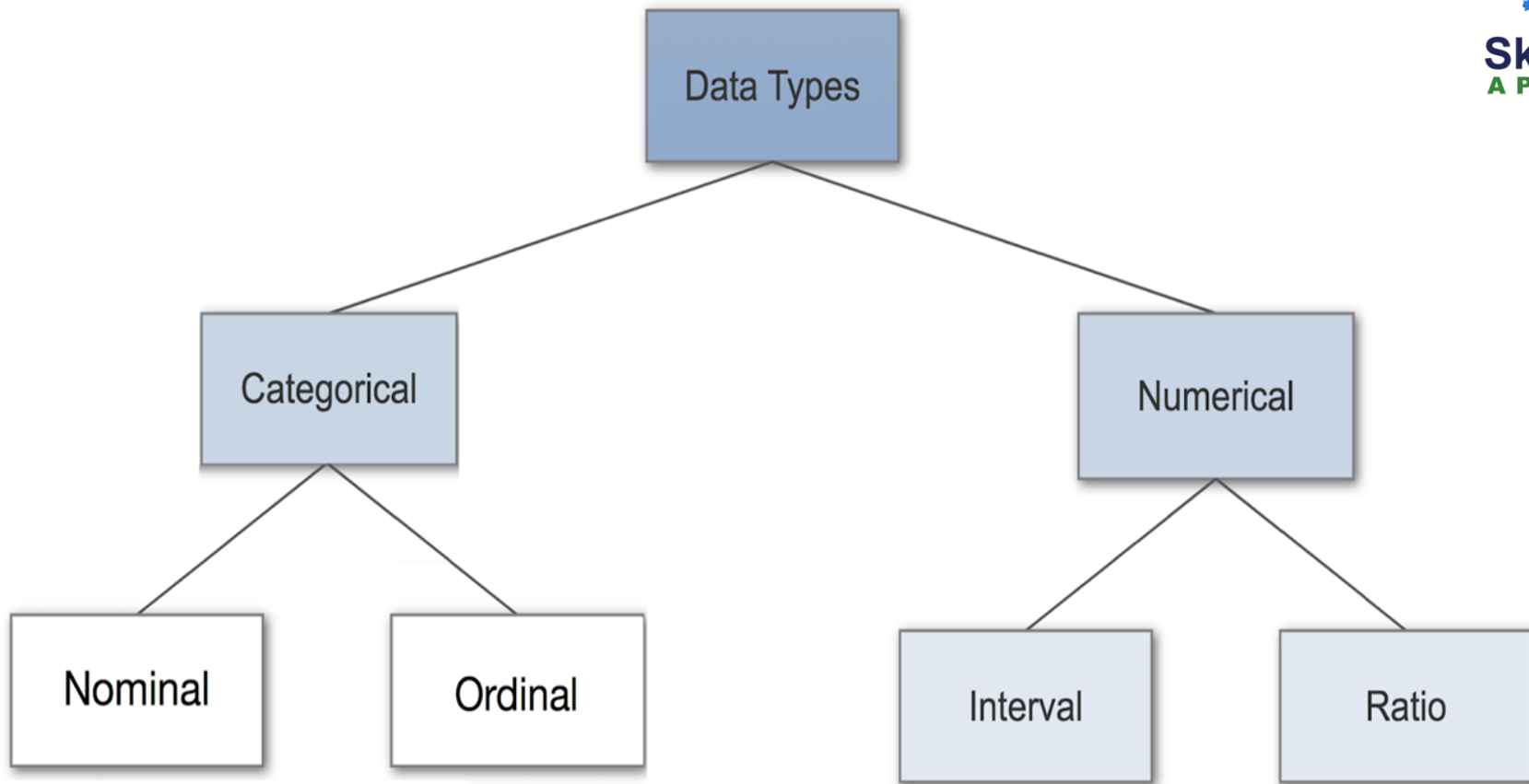
Types of Data

Structure data → data from database

unstructured data → audio, videos, Rdf

Semi structure → json, xml





- Structured Data is get organized by the means of Relational Database.
- Semi Structured Data is partially organized by the means of XML/RDF.
- Unstructured Data data is based on simple character and binary data.

Categorical variables can be further categorized as either nominal, ordinal or dichotomous. Nominal variables are variables that have two or more categories, but which do not have an intrinsic order.

Ordinal variables include: socio economic status (“low income”, “middle income”, “high income”), education level (“high school”, “BS”, “MS”, “PhD”), income level (“less than 50K”, “50K-100K”, “over 100K”), satisfaction rating (“extremely dislike”, “dislike”, “neutral”, “like”, “extremely like”)

- Interval data is like ordinal except we can say the intervals between each value are equally split.
 - Time, Age, Temperature
- Ratio data is interval data with a natural zero point.
- Ratio data has a defined zero point. Income, height, weight, annual sales, market share, product defect rates, time to repurchase, unemployment rate, and crime rate are examples of ratio data

Why Machine Learning

Students Answers



Why Machine Learning

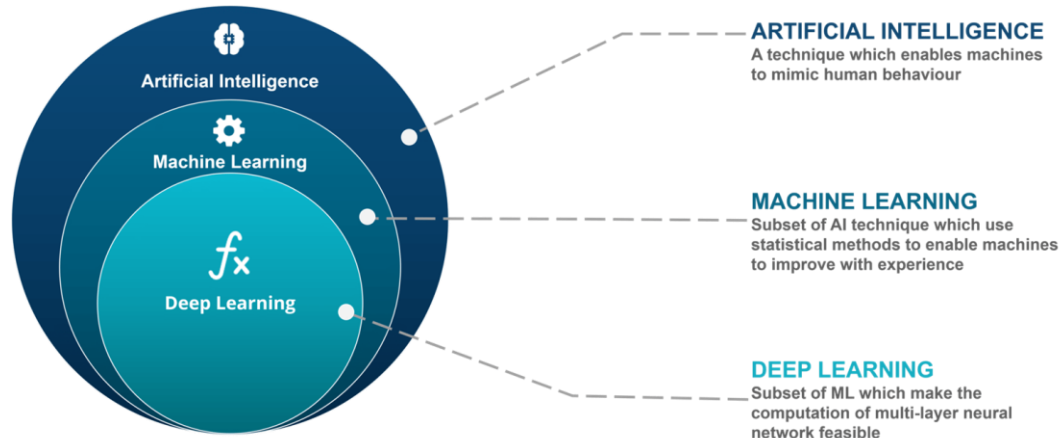
- High Dimensional
- Evolution in Technology
- Reduces Overload
- Saves Time and Money

Machine Learning

Machine want to learn Something

Machine Learning

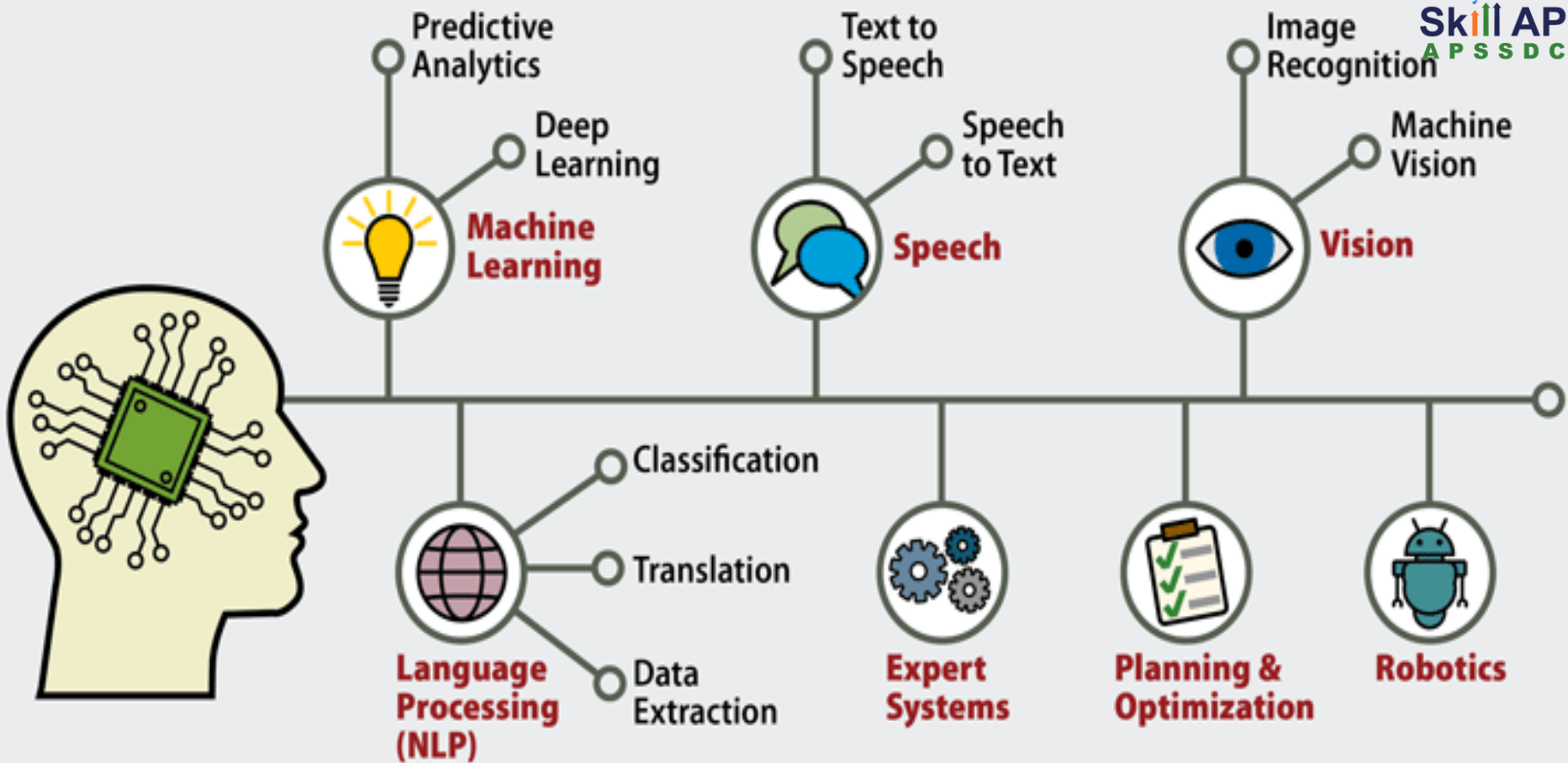
Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it learn for themselves.



Artificial Intelligence



Skill AP
APSSDC



Applications of ML

Machine learning is a buzzword for today's technology, and it is growing very rapidly day by day. We are using machine learning in our daily life.

Examples : Google Map , Google Assistant , Alexa

1. Image Recognition
2. Speech Recognition
3. Traffic Prediction
 - a. Real time Location
 - b. Average time has taken
4. Product Recommendation

Below are some more Applications

5. Email Spam Detection

6. Online Fraud Detection

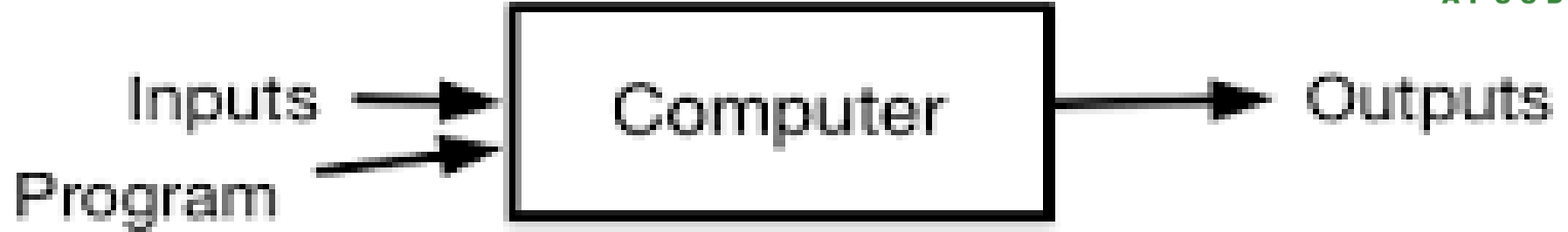
7. Self Driving Car

8. Stock Market Tracking

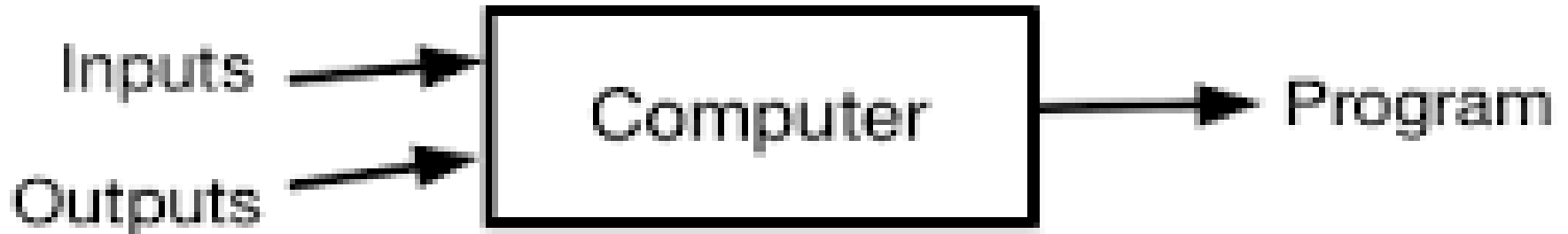
9. Medical Diagnosis

10. Automatic Language Translation

Traditional Programming



Machine Learning





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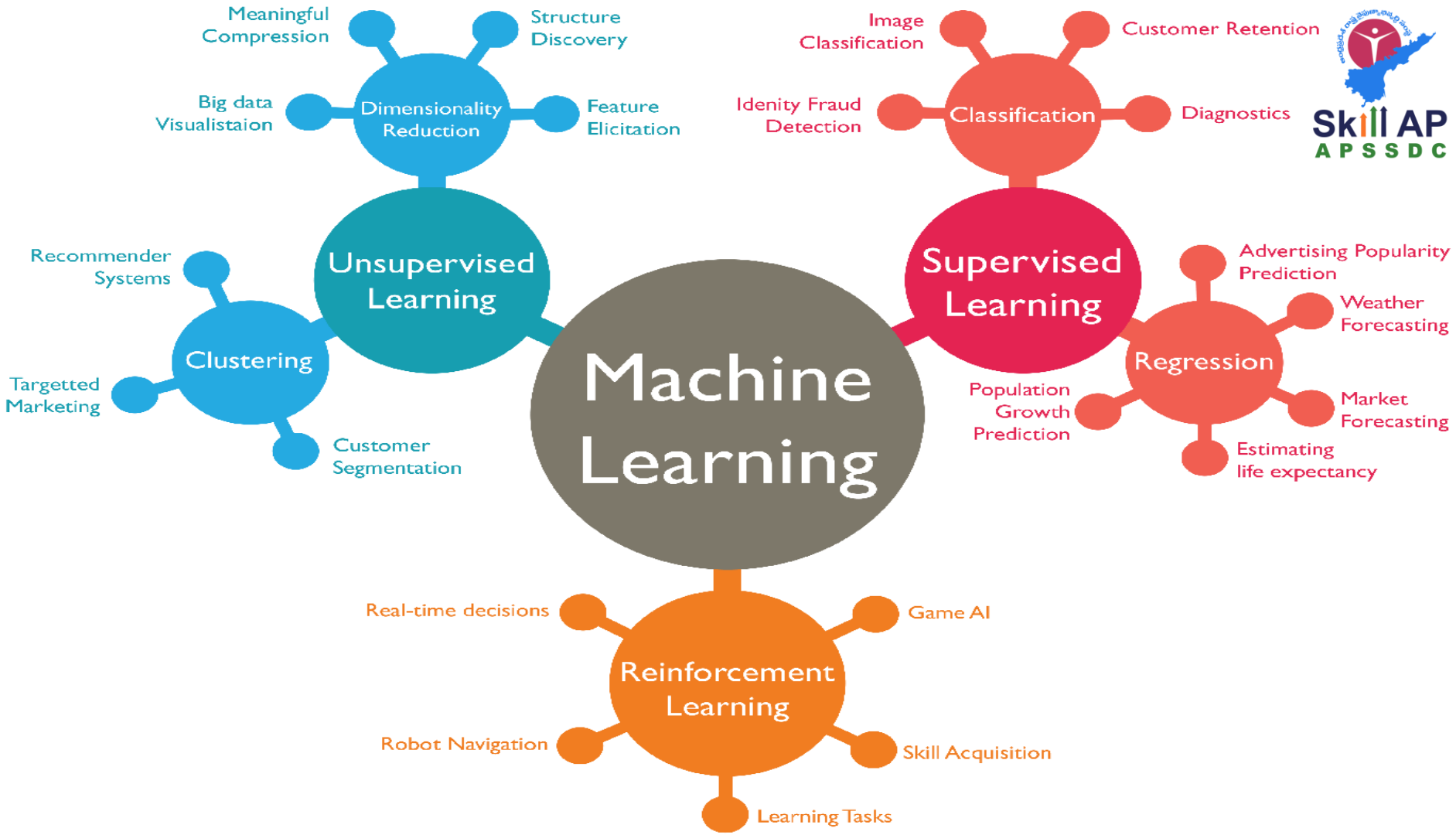
READING READINESS



Types of Machine Learning

These are three types of machine learning:

- supervised learning
 - Regression
 - Classification
- unsupervised learning
 - Clustering
 - Dimensionality reduction
- reinforcement learning.



Supervised Machine Learning

Supervised learning is the types of machine learning in which machines are trained using well "labelled" training data

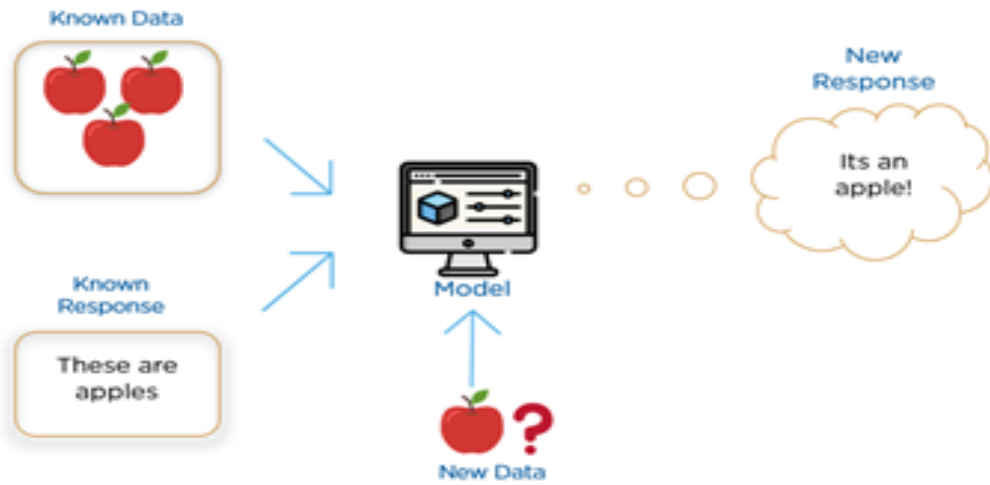
Supervised learning is a process of providing input data as well as correct output data to the machine learning model. The aim of a supervised learning algorithm is to find a mapping function to map the input variable(x) with the output variable(y).

Applications:

1. Risk Assessment
2. Image classification
3. Fraud Detection, spam filtering

Applications of Supervised ML

BANGALORE HOUSE PRICE PREDICTION



Types of Supervised ML

Two types of Supervised Machine Learning :

1. Regression
2. Classification

Regression: Regression algorithms are used if there is a relationship between the input variable and the output variable. It is used for the prediction of continuous variables

Classification algorithms are used when the output variable is categorical, which means there are two classes such as Yes-No, Male-Female, True-false, etc.

Different Algorithms SML

There are different Algorithms or models in Supervised Machine Learning

- Linear Regression
- Non Linear Regression
- KNN Algorithm
- Logistic Regression
- Support Vector Machine
- Decision Tree Regressor
- Decision Tree Classifier
- Random Forest

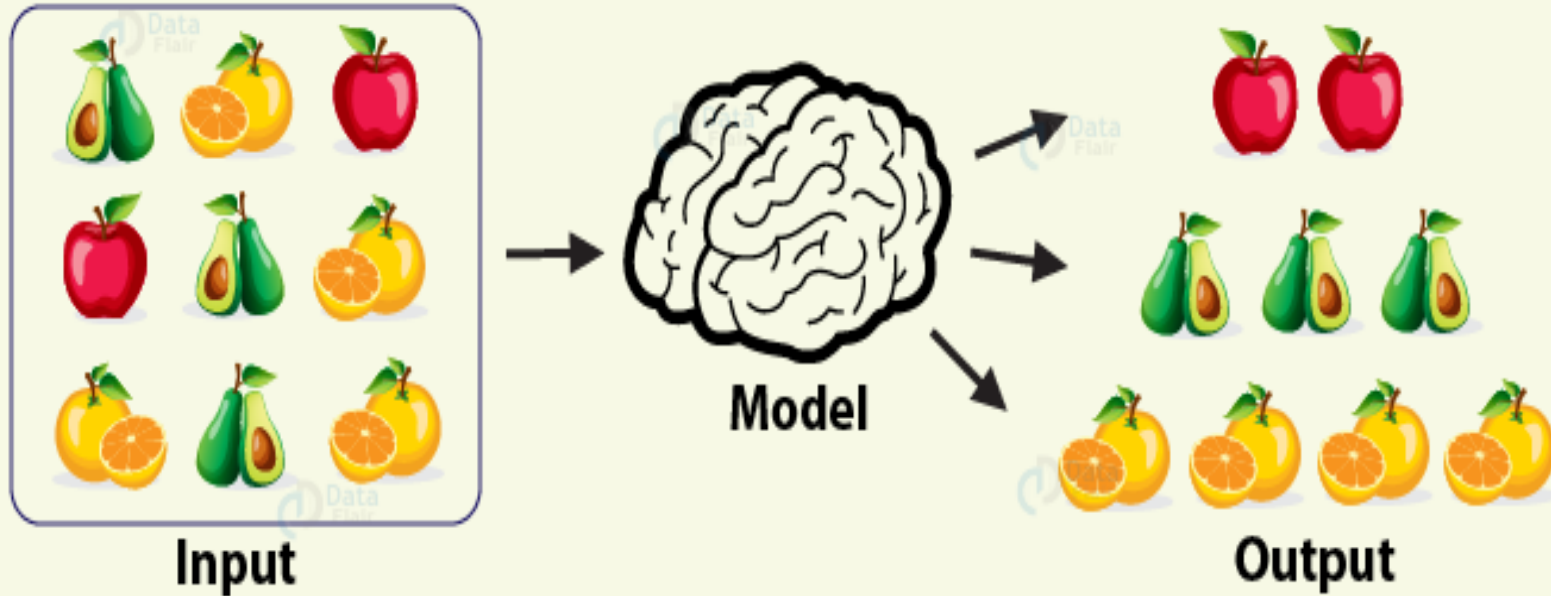
Unsupervised Machine Learning

unsupervised learning is a machine learning technique in which models are not supervised using training dataset. Instead, models itself find the hidden patterns and insights from the given data.

Two types of Unsupervised Machine Learning:

- Clustering
- Association

Unsupervised Learning





RED



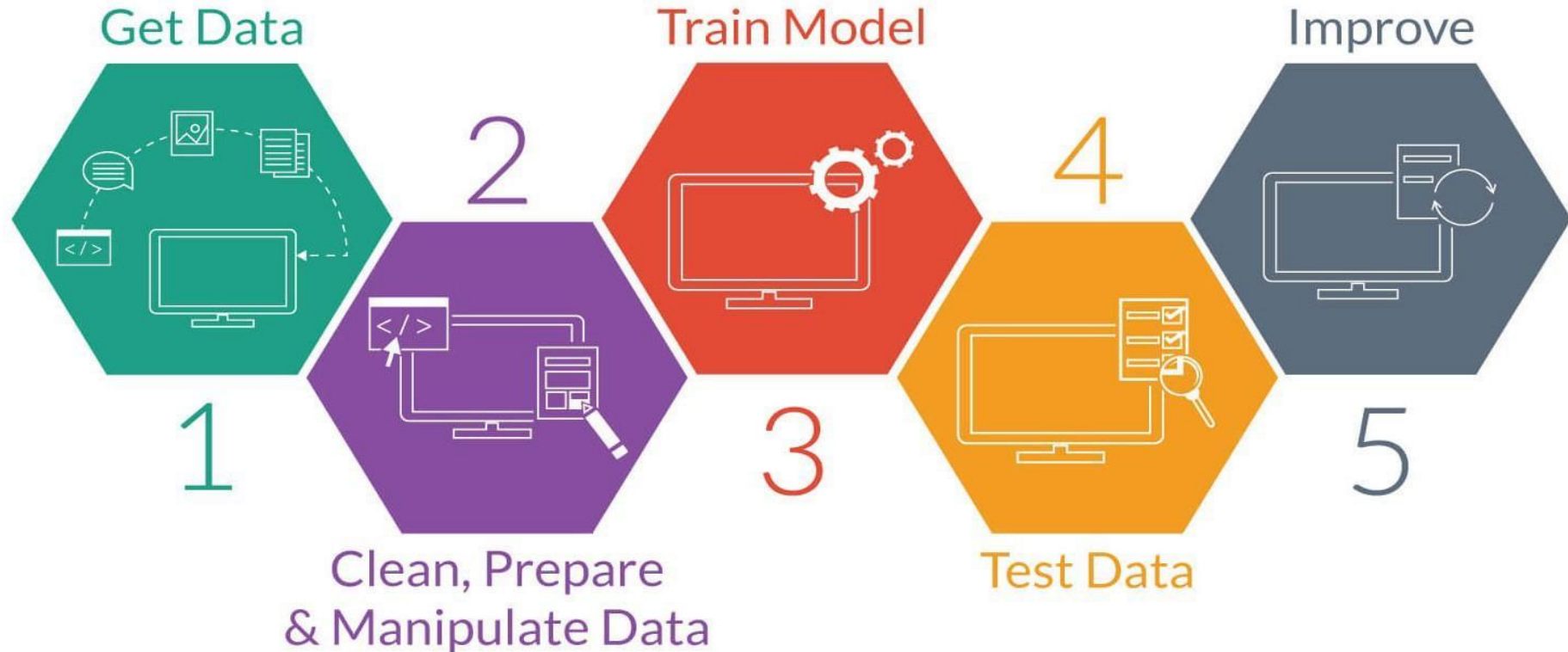
GREEN

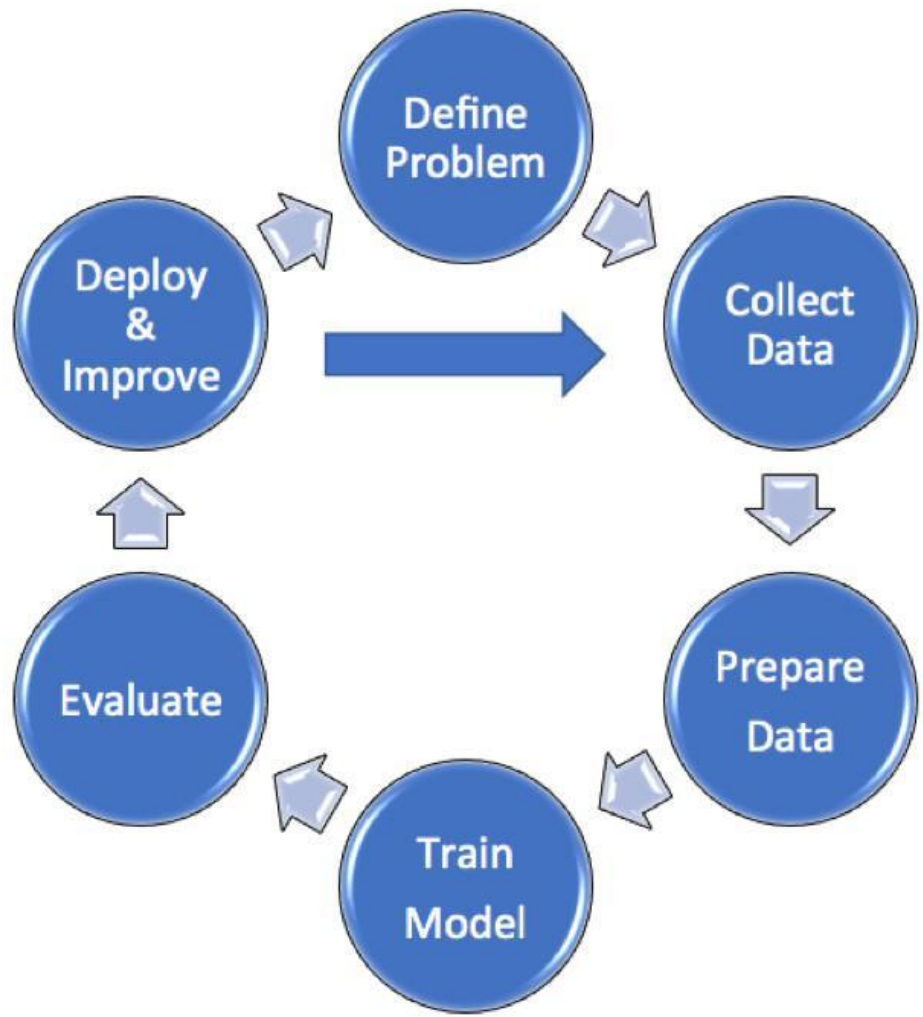


**Supervised Learning
(Train Data)**

**Unsupervised Learning
(No Train Data)**

ML Process Steps





Overfitting and Underfitting

Overfitting Vs Underfitting:

Ex: One student learn only addition Operation and another student learn all the textbook then if you conduct exam on mathematical operations

BIAS: It is the difference between the Average Predictions of a model and the correct values which we are trying to Predict.

Variance: It is the Variability of model Prediction for a given data point or a value that tells us the Spread of a data.

- High Bias is Underfitting
- High Variance is Overfitting

Regularization: These are techniques used to reduce the error by fitting a function appropriately on the given training set avoid overfitting.

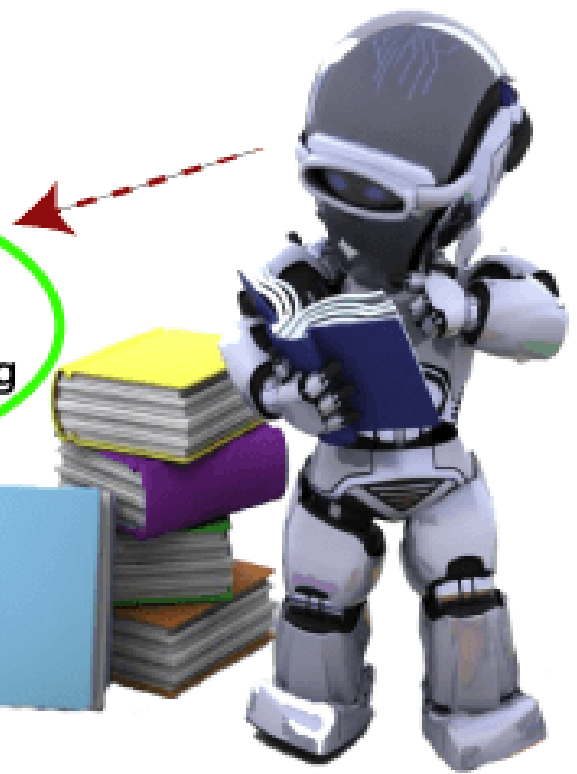


Human



I can learn everything automatically from experiences.
Can u learn?

Machine



Yes, I can also learn from past data with the help of Machine learning

Examples



All are previously Guess by one experience persons

- Power Required Classify the data into categories
- carona or not
- Shirt size prediction

HOW TO GET DATASETS

1. Research and get the data
2. Get already exist data from different sources
 - a. Kaggle
 - b. Packages (Sklearn)

A red pen is shown from the top right, writing the words "Thank you" in a black, cursive script on a white background. The pen's tip is at the end of the word "you".

Thank you



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APSSDC

Ranganayakulu *APSSDC*