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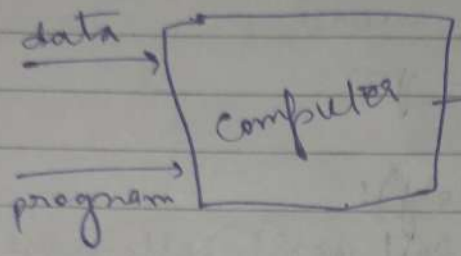
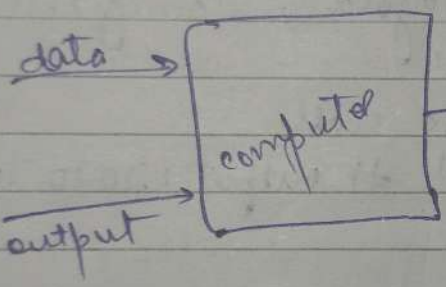
Machine Learning

→ field of study that give computers the capability to learn without being explicitly programmed.



Traditional programming



Machine learning

1. Model (Technique / Method)
2. Feature (Specific
3. Target (Label)
4. Training
5. Prediction.

Types of learning :- Supervised → Regression
→ Classification
- Unsupervised.

input + output given

used to find prediction by analysing the data.

only input is given

→ Example of Supervised learning Algorithm.

Linear Regression
Logistic "
Nearest Neighbour
Decision Tree
Random Forest

Reinforcement learning
↓
just like chess game.

Unsupervised
- clustering
- Association

diff?

example of unsupervised learning algorithm
↳ K means for clustering problems

Regression
- Linear regression
  - simple
  - multiple
  - polynomial
- Logistic
- decision tree regression
- Random forest regression

- Simple linear regression

$y = b_0 + b_1 * x_1$

dependent variable.

independent variable

coefficient

constant

- Multiple linear regression.

$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n + \epsilon$

dependent variable

coefficient

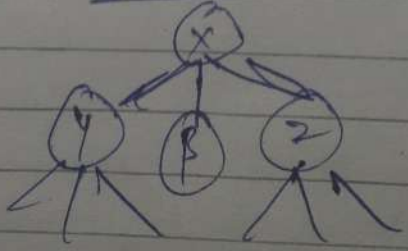
explanatory

Random error.

- Polynomial Regression.

$y_i = \beta_0 + \beta_1 X_i + \beta_2 X_i^2 - - - -$ (incomplete)

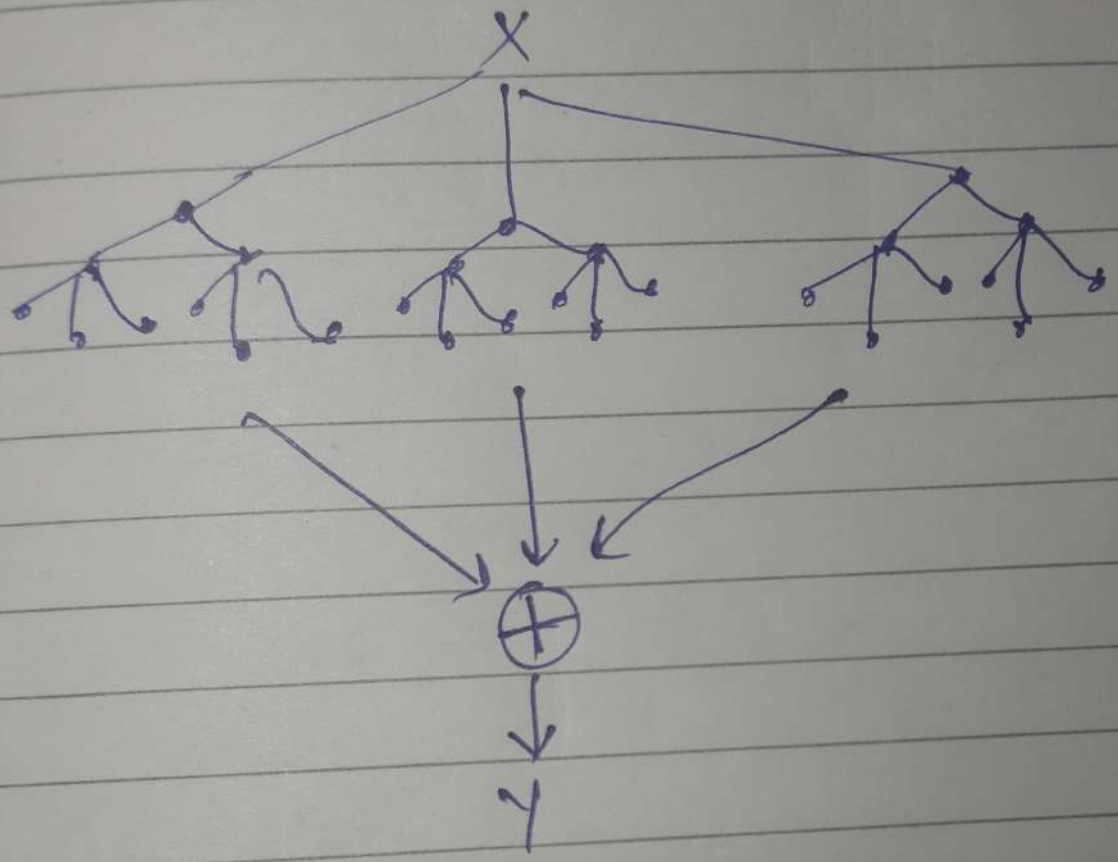
- Decision Tree → model is formed in form of tree structure.



good

* Random forest Regression.

Decision tree ka group.



- logistic Regression
  - binomial
  - multinomial
  - ordinal.