Types of ML

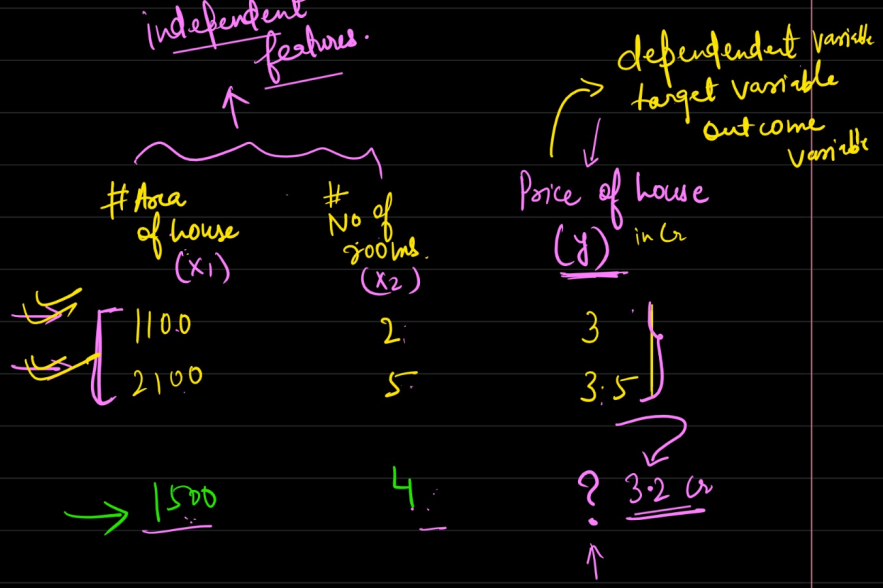
1. Supervised ML
2. Unsupervised ML
3. Semi-Supervised ML
4. Reinforcement learning.

① Supervised learning

Supervisor

→ The ML style where dependent variable is present. (y is present)

→ historical data.



$y = f(x)$

$f(1500, 4) = 3.2$ Cr.

SL

- **Regression**
  - → y is continuous
  - eg. Price of house
- **Classification**
  - y is discrete
  - eg. Pass / fail

Pass → 1
Fail → 0

In classification $y \in \{0, 1\}$ → binary classification

$y \in \{0, 1, 2\}$ → multiclass classification

# hours studied	mark obtained in internal exam	Pass / Fail
8	80%	Pass
3	70%	Pass
1	40%	Fail

② Unsupervised learning → Can you find similar groups in the data

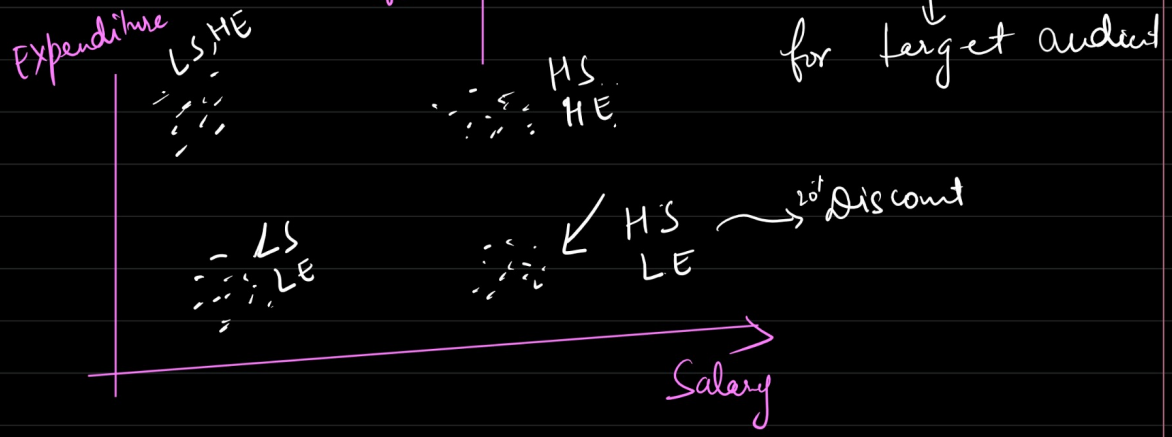
No supervision

No historical data (y is not present)

* Customer Segmentation

Expenditure (in thousand)	Salary (in Lakhs)
5000	20
4000	15
6000	25

Clustering → for target audience



* No y
* No historical data.

③ Semi - Supervised learning

↳ Combination of Supervised and Unsupervised learning.

↳ labelled and Unlabelled data

y — label.

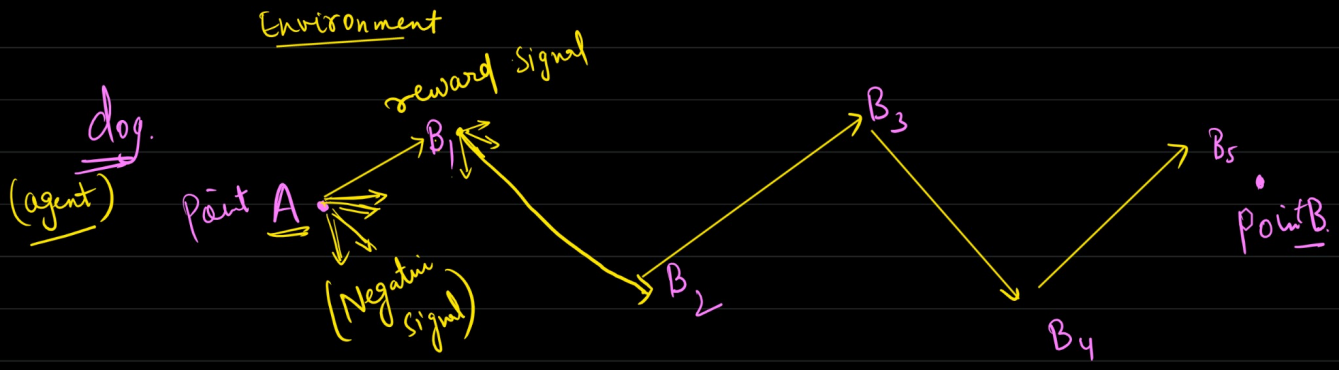
Netflix / Amazon Prime ⇒ All customers are divided into regions. (USL)
based on customer preference, they will be given some suggestion (SL)

④ Reinforcement learning

eg: Chess.

{ Agent
Environment

* concerned with how intelligent agents take action in an environment to maximise the award.


Environment
dog.
(agent)
Point A
reward signal
B1
B2
B3
B4
B5
Point B
(Negative signal)

Chess →
Ludo