Types of ML styles

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

1. Supervised learning

↓

Supervisor.

(historical data acts as supervisor)

Independent variables / features

dependent variable / target / outcome / label

# Area of house	# No of rooms	Price of house (y) in Cr
1100	2	3
1200	3	4
1150	2	?

based on historical data, the new data (1100, 2) prediction → 3.2 Cr

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

→ Historical data

$y = f(x)$

$f(1150, 2) = 3.2$ Cr.

SL

Regression

→ y is continuous

eg: Price of house.

Classification

y is discrete

eg: Pass / fail

# of hours studies	marks obtained in Internal exam	Pass / fail (1 / 0)
8	80%	Pass
3	70%	Pass
1	40%	fail

In classification

$y = 1, 0$ → binary classification

$y = 0, 1, 2$ → Multiclass classification

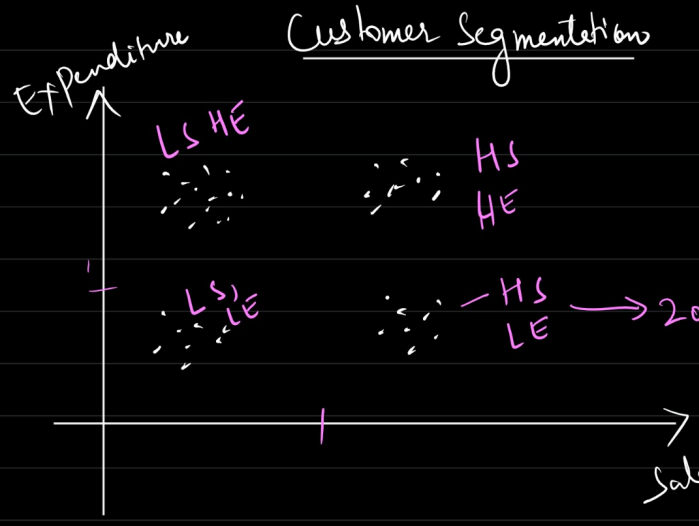
② Unsupervised learning → Can you find similar groups in the data?

↓

No Supervision

↓

No y (No historical data)



Expenditure (in thousand)	Salary (in lakhs)
5000	20
4000	30
6000	35

→ 20% discount

Clustering → for target audience

* No y
* No historical data

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③ Semi-Supervised learning

↳ Combination of Supervised & Unsupervised learning

↳ labelled and Unlabelled data (Y label)

Netflix, Amazon prime →
- All the customers are grouped/divided into regions (USL)
- based on customer preference they will be given some suggestions (SL)

⑨ Reinforcement learning

eg. Chess, Ludo

Environment (phone interface)

Agent

→ Concerned with how intelligent agents take action in an environment to maximize the award.

field in which dog is running → Environment