Day 6: Types of ML - 4 (19 Dec, 24)

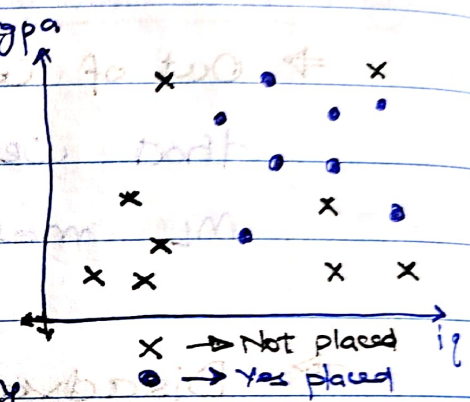
Instance based v/s Model-Based Learning :

Learning in ML
- Memorizing
- Generalising

i) Instance based : :

E.g →

iq	gpa	placement
80	8	Y



⇒ Instance based learning uses similarity of new data with existing data to predict what its target will be.

E.g → KNN, Kernel fn's etc.

* NO training is required, 'lazy-models'. It needs time every time for prediction

ii) Model Based :

* We will use same example as above.

→ Model based learning tries to identify a mathematical relation b/w data & target. They make decision functions to identify.

* This requires training. But is faster once trained.

E.g ⇒ Linear Regression, Logistic Reg, Decision Trees etc.

Most models use this.

# (Usual/Conventional/Model) based Machine Learning	Instance based Learning
i) Preparation is required	Preparation required.
ii) Train model from data to discover patterns.	No training. Pattern discovery when query is received.
iii) Store the model	No model to store.
iv) Generalize the rules.	Rules decided for each instance.
v) Predict for unseen instances using model.	Predictions made using training data directly each time.
vi) Can remove training data once model is trained.	Every time training data is required to work.
vii) Requires a known model.	May not have any explicit model.
viii) Generally requires less storage.	Uses more storage as we need to store the data as well.