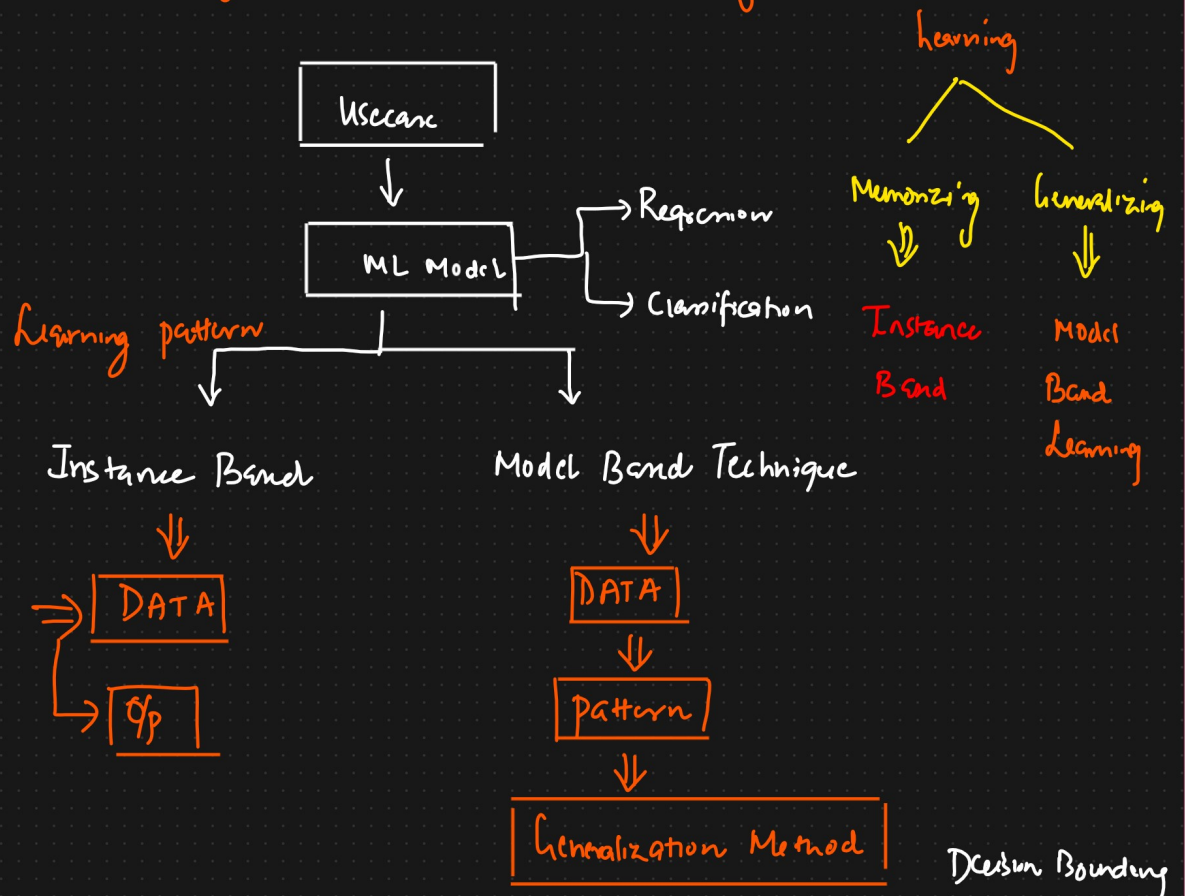
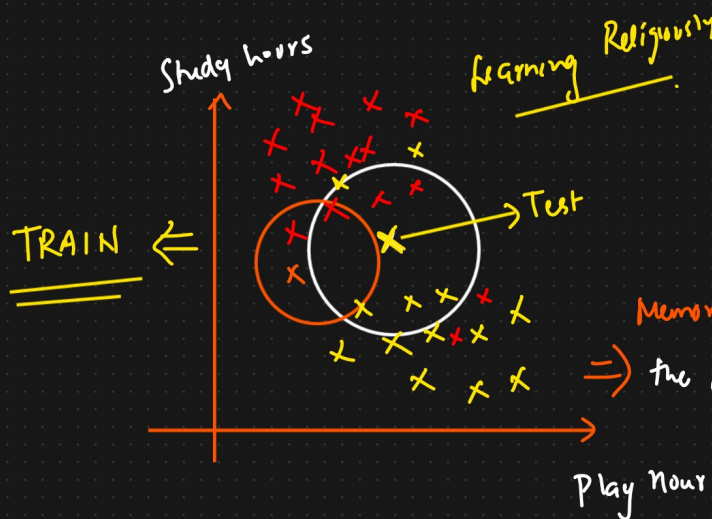
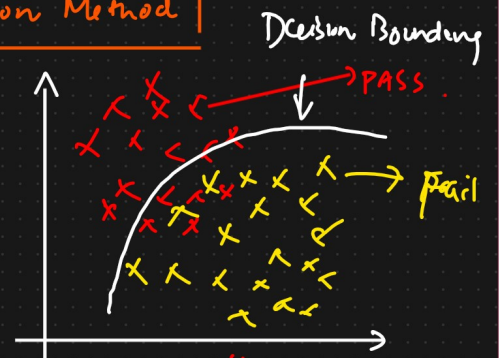


Instance Based Learning Vs Model Based Learning



No. of play	No. of study hours	Pass/Fail
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{ Generalized Model }



X → PASS
x → FAIL

① Learn pattern of the data

Generalized Format

Instance Based Learning

⇓
Domain Expert

① KNN {K Nearest Neighbour}

$IP \rightarrow \boxed{\text{Model}} \rightarrow \text{Score}$
 \downarrow New
 \downarrow Model

$hs \rightarrow \text{Kbs or mb}$
 \downarrow

$pkc \Rightarrow \text{hard drive}$

\Rightarrow Serialized format

Generalization
 Decision
 Boundaries

Usual/Conventional Machine Learning	Instance Based Learning
Prepare the data for model training ✓	Prepare the data for model training. No difference here ✓
Train model from training data to estimate model parameters i.e. <u>discover patterns</u>	Do not train model. Pattern discovery postponed until scoring query received
Store the model in suitable form	There is no model to store
Generalize the rules in form of model, even before scoring instance is seen	No generalization before scoring. Only generalize for each scoring instance individually as and when seen
Predict for unseen scoring instance using model	Predict for unseen scoring instance using training data directly }
Can throw away input/training data after model training	Input/training data must be kept since each query uses part or full set of training observations
Requires a known model form	May not have explicit model form
Storing models generally requires less storage	Storing training data generally requires more storage
Scoring for new instance is generally fast	Storing for new instance may be slow

\uparrow Yes or No

$IP \rightarrow \boxed{\text{Model}} \rightarrow \text{O/p}$