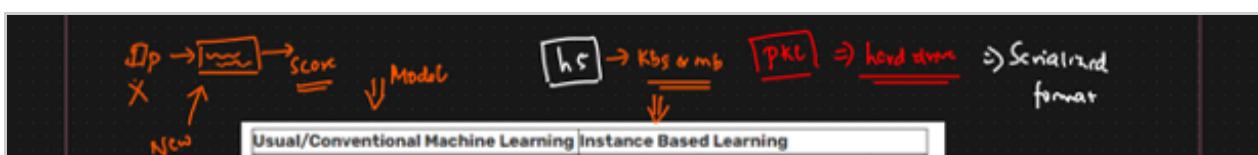
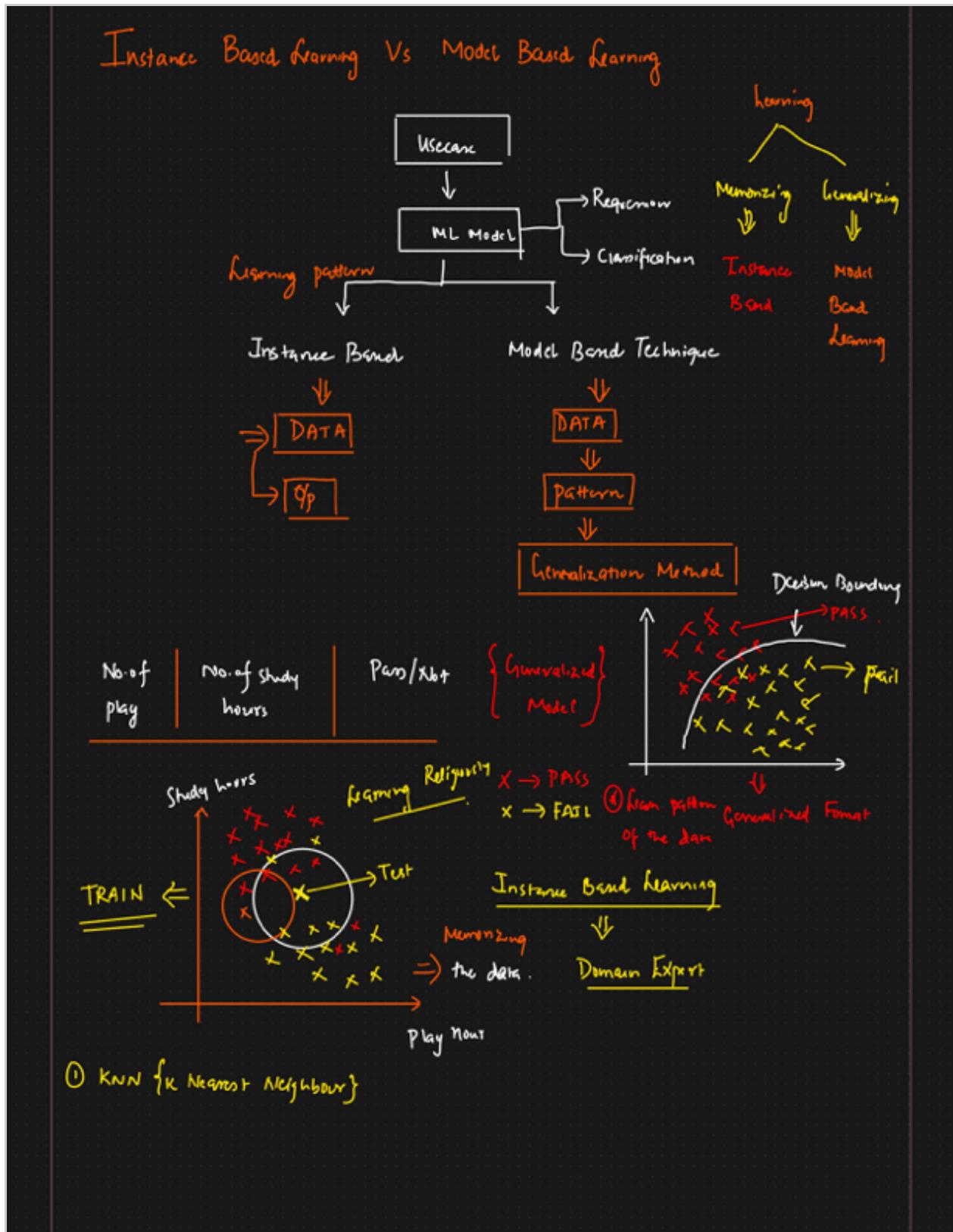


5. Instance Based Vs Model Based Learning

Wednesday, 21 January 2026 9:26 PM



<i>Generalization</i> <i>Decision Bandwidth</i>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Prepare the data for model training ✓</td><td style="padding: 5px;">Prepare the data for model training. No difference here ✓</td></tr> <tr> <td style="padding: 5px;">Train model from training data to estimate model parameters i.e. <u>discover patterns</u></td><td style="padding: 5px;">Do not train model. Pattern discovery postponed until scoring query received</td></tr> <tr> <td style="padding: 5px;">Store the model in suitable form</td><td style="padding: 5px;">There is no model to store</td></tr> <tr> <td style="padding: 5px;">Generalize the rules in form of model, even before scoring instance is seen</td><td style="padding: 5px;">No generalization before scoring. Only generalize for each scoring instance individually as and when seen</td></tr> <tr> <td style="padding: 5px;">Predict for unseen scoring instance using model</td><td style="padding: 5px;">Predict for unseen scoring instance using training data directly</td></tr> <tr> <td style="padding: 5px;">Can throw away input/training data after model training</td><td style="padding: 5px;">Input/training data must be kept since each query uses part or full set of training observations</td></tr> <tr> <td style="padding: 5px;">Requires a known model form</td><td style="padding: 5px;">May not have explicit model form</td></tr> <tr> <td style="padding: 5px;">Storing models generally requires less storage</td><td style="padding: 5px;">Storing training data generally requires more storage</td></tr> <tr> <td style="padding: 5px;">Scoring for new instance is generally fast</td><td style="padding: 5px;">Scoring for new instance may be slow</td></tr> </table>	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	Scoring for new instance may be slow	<p>The diagram illustrates a data processing flow. It starts with an input labeled "IIP". This input is directed towards a database represented by a rectangle with three horizontal lines inside, labeled "PK". An arrow points from "IIP" to the database. From the database, another arrow points to the right, labeled "OIP", representing the output.</p>
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																			
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