WEEK 1

1. WHAT IS ML? (Machine Learning)

– Machine Learning is a branch of AI that helps computers learn from data.

– Instead of being explicitly programmed, systems improve automatically through experience.

– Used in daily apps like recommendation systems, image recognition, and voice assistants.

– Learns patterns from data to make decisions or predictions.

– Focuses on building models that get better over time with more data.

2. WHAT IS SUPERVISED ML ALGORITHM?

– Uses labeled data, meaning each training example has input-output pairs.

– Model learns by comparing predictions to correct answers and adjusts accordingly.

– Common for tasks like predicting prices or classifying emails as spam or not.

– “Supervision” comes from having clear right answers during training.

– Examples include Linear Regression and Decision Trees.

3. WHAT IS REGRESSION?

– A type of supervised learning where the output is a continuous value.

– Used when we want to predict numbers like house prices or temperature.

– Finds the relationship between input variables and a numeric outcome.

– Goal is to draw the best-fit line through data points.

– Helps understand how one variable changes with respect to another.

4. WHAT IS CLASSIFICATION?

– Supervised learning task where output is a category or class label.

– Used when you want to sort things into groups (e.g., cat/dog, fraud/not fraud).

– Learns patterns from labeled examples to classify new data.

– Output is discrete, not numerical—like yes/no or type A/B.

– Popular algorithms: Logistic Regression, Random Forests, and SVMs.