1. What is Machine Learning?
Machine Learning (ML) is a subset of Artificial Intelligence that enables computers to learn patterns from data and make predictions or decisions without being explicitly programmed.

In simple words:
Instead of writing rules, we give data, and the machine learns the rules by itself.

Example: Email spam detection, movie recommendations, face recognition.

2. What are the main types of Machine Learning?
There are three main types:

Supervised Learning

Uses labeled data

Example: Classification, Regression

Example: Predicting house prices, spam detection

Unsupervised Learning

Uses unlabeled data

Finds hidden patterns or groups

Example: Customer segmentation (K-Means)

Reinforcement Learning

Learns by trial and error

Uses rewards and penalties

Example: Game playing (AlphaGo), robotics

3. What is the difference between Classification and Regression?

Aspect	Classification	Regression
Output type	Discrete / Categorical	Continuous / Numerical
Example output	Yes/No, Spam/Not Spam	Price, Temperature
Algorithms	Logistic Regression, SVM, KNN	Linear Regression
Use case	Predict a class	Predict a value

Example:

Classification → Email is Spam or Not Spam

Regression → Predict house price

4. What is a feature in Machine Learning?
A feature is an input variable used by a machine learning model to make predictions.

- Features describe the data.

Example:
For predicting house price:

Size of house

Number of bedrooms

Location

These are features.

5. What is a label or target variable?
A label (target variable) is the output that the model is trying to predict.

Example:

House price → Target

Spam / Not Spam → Label

- In supervised learning:

Features (X) → Inputs
Label (y) → Output