# **WEEK 1**

**What is ML (Machine Learning)?**

Machine Learning (ML) is a subset of artificial intelligence (AI) that enables computers to learn from data and improve their performance over time without being explicitly programmed. It involves designing algorithms that can identify patterns in data, make predictions, or take decisions based on input data.

**What is supervised ML algorithm?**

A supervised machine learning algorithm is a type of ML where the model is trained on labeled data—that is, data that includes both input features and the correct output. The algorithm learns the mapping between inputs and outputs, and uses this to predict outcomes for new, unseen data. Examples include Linear Regression, Decision Trees, and Support Vector Machines.

**What is regression and classification?**

* **Regression** is a type of supervised learning where the output variable is continuous. The goal is to predict a numerical value.  
  *Example: Predicting house prices based on features like size, location, and number of rooms.*
* **Classification** is a type of supervised learning where the output variable is categorical. The goal is to assign data to one of several predefined classes.  
  *Example: Classifying emails as "spam" or "not spam".*