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**Week 1 Assessment**

**What is Machine Learning?**

Machine Learning allows computers to learn from data and make decisions. That is machine behaves like a human. In machine learning, there is no need to explicitly program, instead we feed large amount of dataset to the algorithms, make it learn patterns and relationships from that data and then make predictions on new data.

**What is Supervised machine learning?**

Supervised machine learning is a type of machine learning in which the model is trained using labeled data. Each of the input features have its corresponding output label. The model learns the relationships between inputs and outputs from labeled dataset so it can make prediction on unseen data. For example, if we want to develop a model that recognizes type of crop from the image, we first need to fed it with dataset that have images of variety of crop with it’s corresponding name label.

**What is classification and regression?**

Both classification and regression are the types of supervised machine learning, where model is trained on labeled dataset.

In classification, the output label is categorical. The model predicts the category or class label. For example, classifying the email into two classes- spam or not spam, or predicting whether the given fertilizer should be used for given crop or not, i.e. in yes or no way.

While in regression, the output label is in continuous values. We cannot decide a separate class for the output. For example, the prices of crops range in numerical values, temperature or amount of rainfall.