**Machine Learning Definition**

**Supervised Learning** – Uses historical and labeled data, the ML model predicts a value

* Required historical data
  + Known results and data from the past
* Labeled
  + The desired output is known
* Two main labels typed
  + Categorical Value to Predict
    - Classification Task
      * Predict an assigned category
        + Cancerous vs benign tumor
        + Fulfillment vs credit default
        + Handwriting Recognition
  + Continuous Value to Predict
    - Regression Task
      * Future Prices
      * Electricity loads
      * Test Scores

**Unsupervised Learning** – Uses unlabeled data, the ML model discovers possible patterns in the data.

* Group and interpret data without a label
  + Clustering customers into separate groups based off their behavior
* Major downside is no historical data

**Supervised Learning**

Predicting an Outcome

**Process**

**Selling a home data chart has Area Bedrooms Bathrooms and Price**

**Features-Area, Bedrooms, Bathrooms**

**Label- Price**

Data-> X: Features Y: Label-> Training Data Set (Split) 70% -> Test Data Set (Split) 30% -> Fit/Train Model -> Evaluate Performance -> Deploy Model