**Machine Learning**

**Lab Manual**



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**CSE – 3**

**Problem Statement:**

Classification of cancer with the help of Decision Trees.

**Algorithm of ML Problem:**

Decision Trees:

Decision tree models where the target variable uses a discrete set of values are classified as Classification Trees.

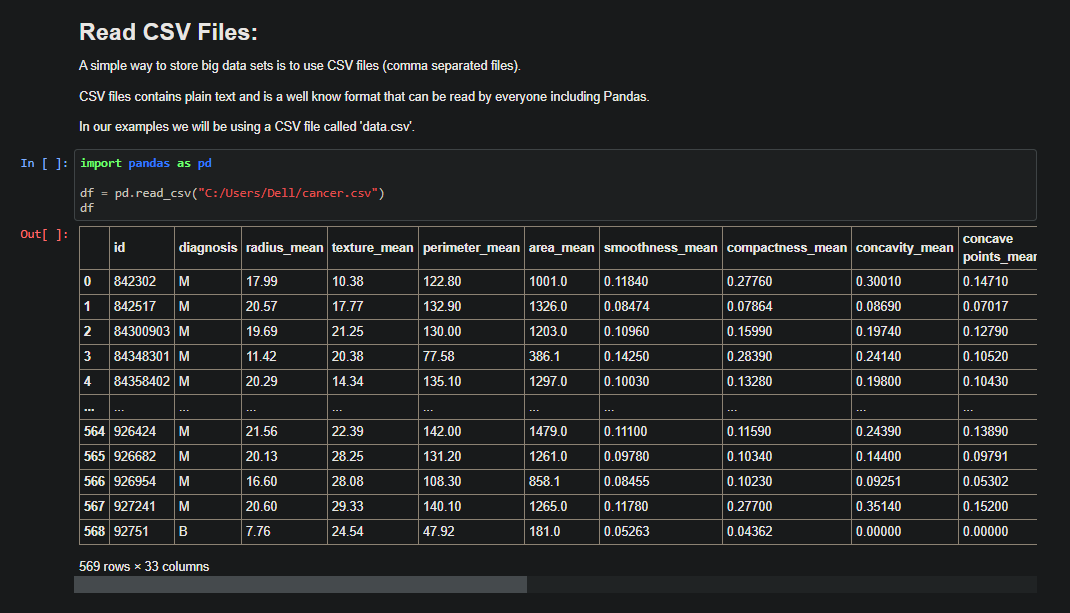
In these trees, each node, or leaf, represent class labels while the branches represent conjunctions of features leading to class labels.

A decision tree where the target variable takes a continuous value, usually numbers, are called Regression Trees.

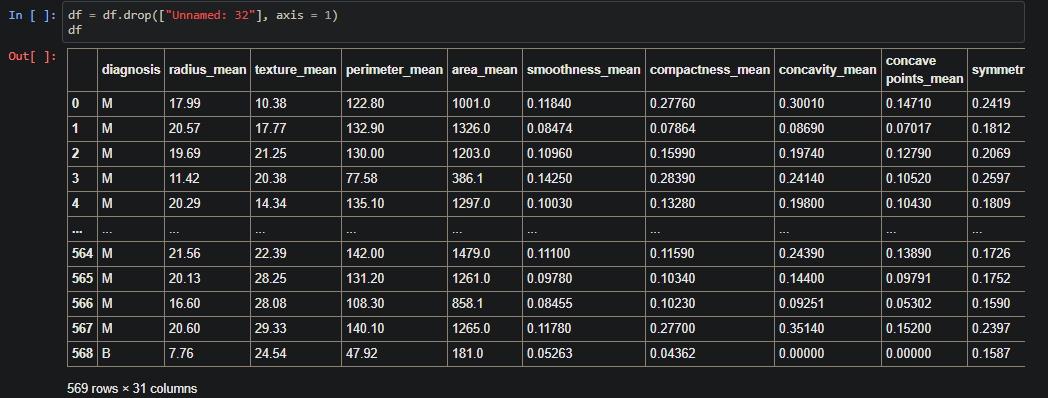
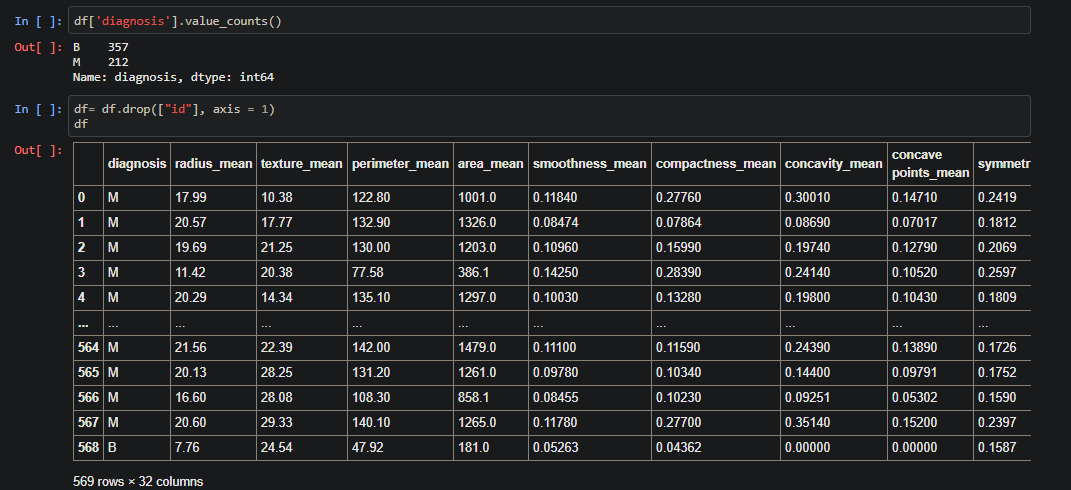
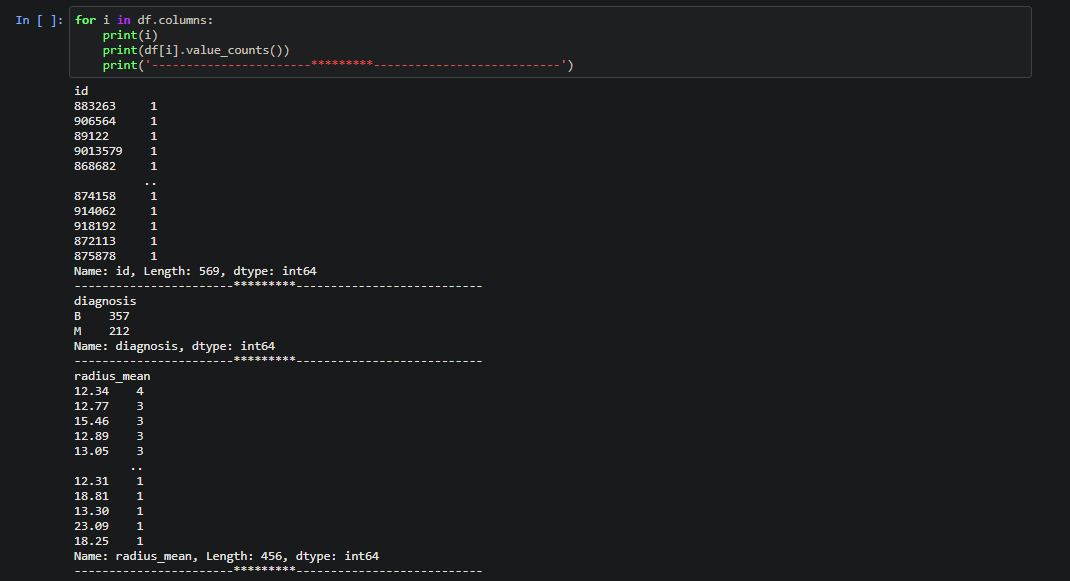
The two types are commonly referred to together at CART (Classification and Regression Tree).

**Program Code Snippets:**

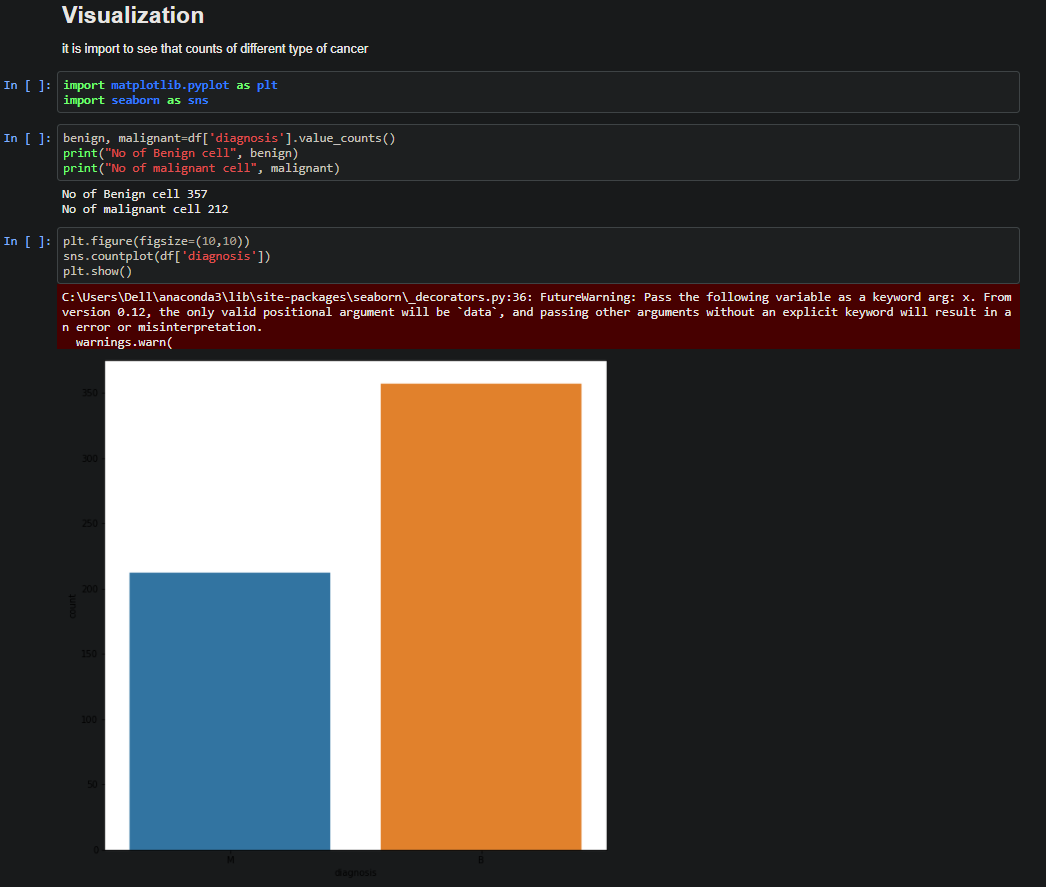
**Loading Dataset:**

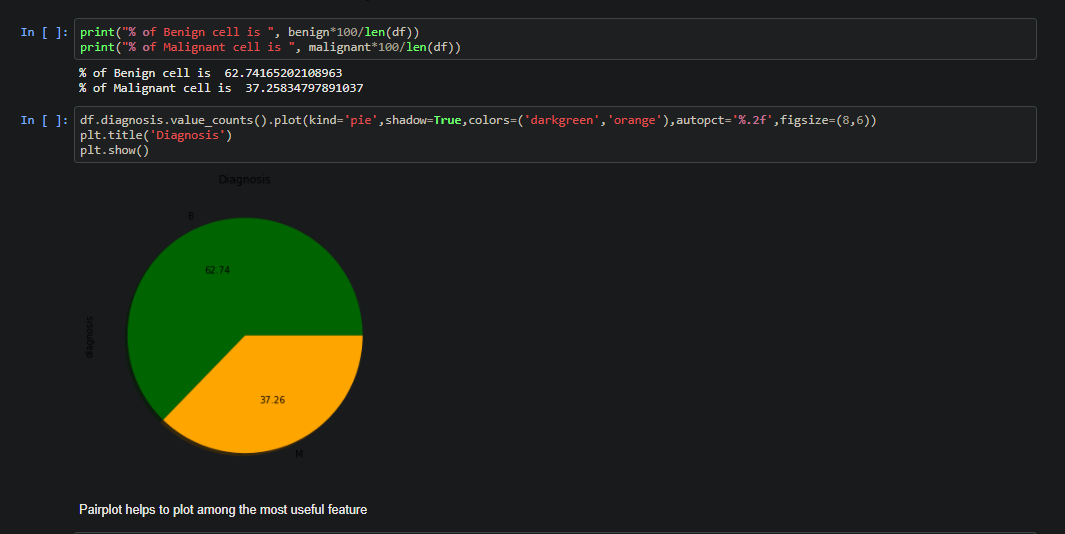


**Pre-processing of Dataset:**



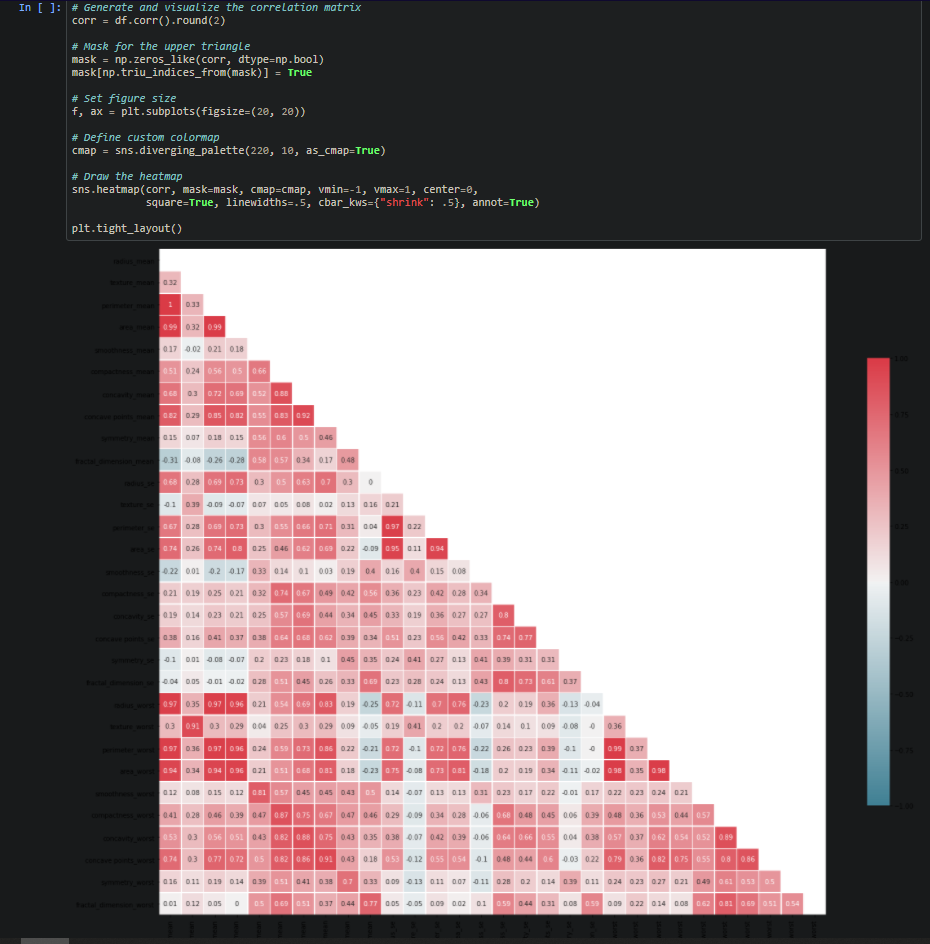
**Visualisation:**



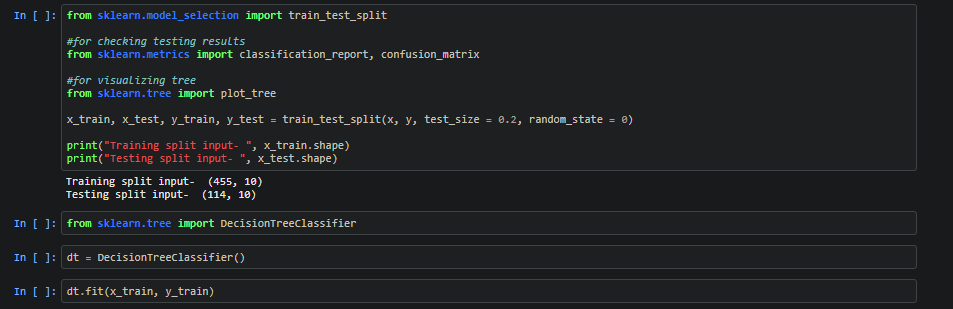


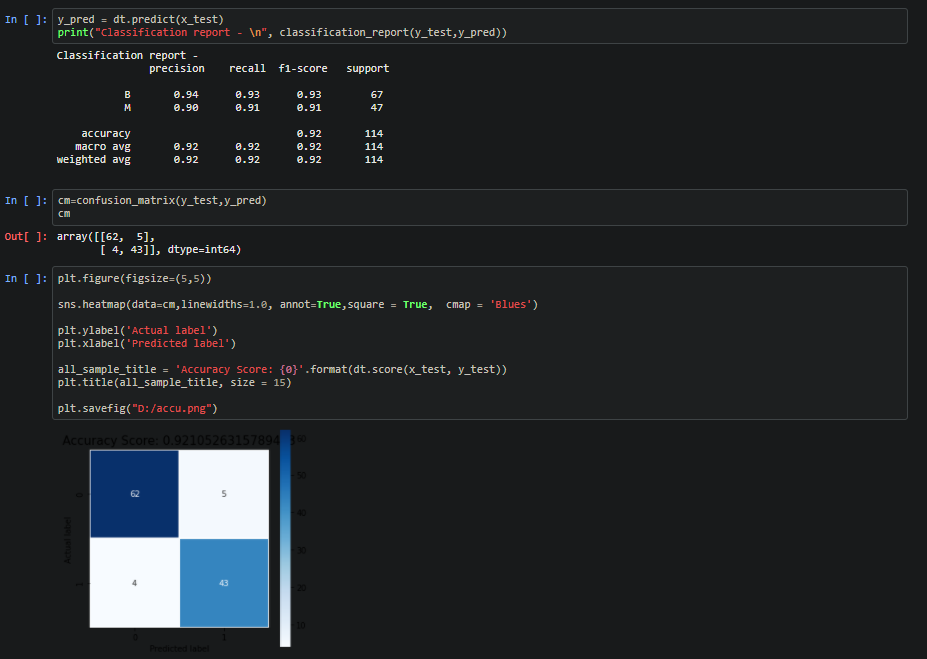




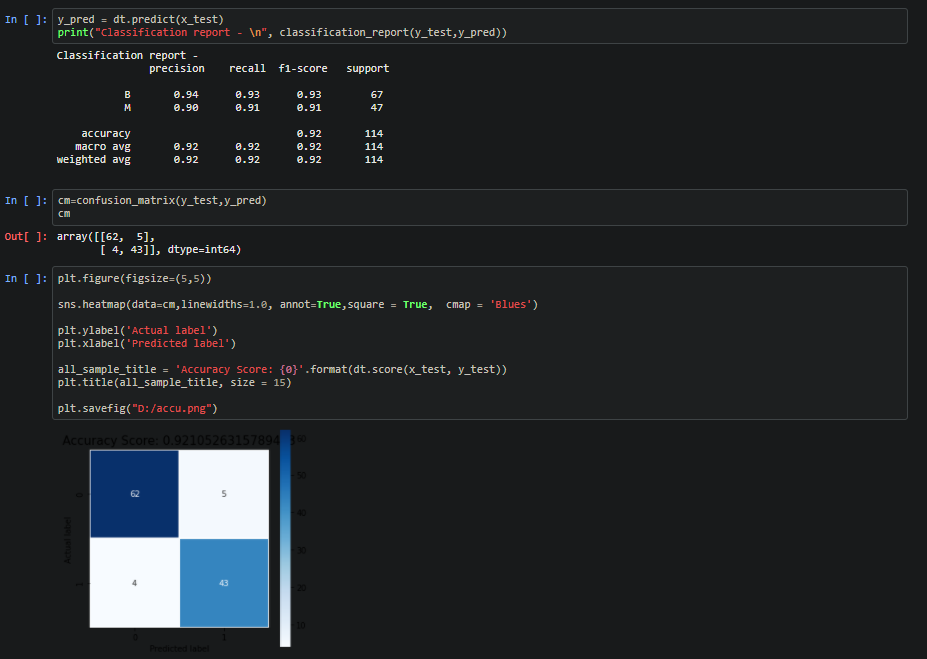




**ML algorithm implementation of prediction or comparison:** 



**Confusion Matrix:**



**Final Decision Tree Graph:**



**GitHub Link:**

[**https://github.com/gurpreetsahni/ML-Class/blob/main/Lab1\_DT.ipynb**](https://github.com/gurpreetsahni/ML-Class/blob/main/Lab1_DT.ipynb)