**Objective**:

The objective of the project is detect benign and malignant cancer based on certain characteristics of patients.

**Outcome**:

To find out how effective the model is detecting cancer.

**Tools Used**:

1. Python for data analysis
2. Scikit-learn module for machine learning – SVC,

**Execution**:

The data is loaded from scikit-learn dataset.

* Number of Instances: 569
* Class Distribution: 212 Malignant, 357 Benign
* Target class: - Malignant - Benign

All the 30 features are used - examples:

* radius (mean of distances from center to points on the perimeter)
* texture (standard deviation of grayscale values)
* perimeter
* area
* smoothness (local variation in radius lengths)
* compactness (perimeter^2 / area - 1.0)
* concavity (severity of concave portions of the contour)
* concave points (number of concave portions of the contour)
* symmetry
* fractal dimension ("coastline approximation" - 1)

SVA works best when the features in the datasets are linearly separable using all 30 input features.

The score is improved by normalizing the data using

1. Min max scaler
2. Standard scaler
3. Robust scaler
4. c and gamma parameters

After using the above, it was found that the accuracy is highest when 'min max' scaling is used.