**Ex No: 10 Implementation of SVM classification techniques**

**Problem Scenario**

A medical research center is working on developing a classification system to help in the early detection of **breast cancer**. They are using the **Breast Cancer Wisconsin Dataset**, which contains several diagnostic features of cell nuclei (such as radius, texture, smoothness, compactness, concavity, and symmetry). Each data entry is labeled as either **benign (non-cancerous)** or **malignant (cancerous)**.

The research team decides to use a **Support Vector Machine (SVM) classifier**, as SVMs are powerful for binary classification problems with high-dimensional data. The goal is to train the model using patient data and then test its ability to correctly classify new cases.

The tasks to be performed are:

1. Load the **Breast Cancer Wisconsin Dataset** from scikit-learn.
2. Split the dataset into **training** and **testing** sets.
3. Train an **SVM classifier** on the training data.
4. Use the trained model to predict cancer outcomes for the test data.
5. Determine and display the **accuracy** of the classifier.

By successfully implementing this model, the medical team expects to build a reliable AI-based diagnostic assistant that can support doctors in identifying breast cancer cases with high accuracy, thus improving patient care and early treatment outcomes.