	GLOBAL ACADEMY OF TECHNOLOGY **Department of Computer Science and Engineering** **AY: 2023-2024(EVEN Semester)** **21MPT68 – MINI PROJECT**	

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Domain	Title of the Project
Machine Learning	Evaluation of different SVM kernels and their comparison on Breast Cancer detection

SYNOPSIS

Breast cancer is the most common cancer among women in India. Breast cancer is a cancer that develops from the breast tissue. Signs of breast cancer include a lump in the breast, a change in breast shape, dimpling, and others. As per research, 1 in each 28 ladies is probably going to get impacted by the illness. While breast cancer occurs almost entirely in women, around 1-2% of men are likely to get affected, too. Project on aims to develop a machine learning-based system for thyroid detection analysis. This system will analyse patient data, such as blood test results, to predict the presence or absence of thyroid disease. The project will:

Through machine learning techniques, we can detect breast cancer risk in its early stage and increase the chances of survival. The review of current research shows that the algorithms used for detecting breast cancer diagnosis are supervised.

This project aims to evaluate and compare the performance of different SVM kernels for breast cancer detection using machine learning. The specific objectives include:

- Analyse the effectiveness of commonly used SVM kernels (e.g., linear, polynomial, RBF) in classifying breast cancer data.
- Identify the kernel function that yields the highest accuracy, sensitivity, and specificity for breast cancer detection.

Tools and Technologies:

- Programming language: Python (common for machine learning)
- Machine learning libraries: scikit-learn (popular library for SVM implementation and evaluation metrics)
- Data analysis libraries: pandas (data manipulation), NumPy (numerical operations)