[Breast Cancer Classification with Support Vector Machine](https://github.com/nalamidi/Breast-Cancer-Classification-with-Support-Vector-Machine/blob/master/Breast%20Cancer%20Classification.ipynb" \t "_new) by Bola Lamidi presents a practical implementation of a machine learning model to classify breast tumors as malignant or benign. The project utilizes the Wisconsin Breast Cancer Dataset and applies a Support Vector Machine (SVM) classifier.

**Project Overview**

* **Objective**: To accurately classify breast tumors into malignant or benign categories using machine learning techniques.
* **Dataset**: The model is trained on the Wisconsin Breast Cancer Dataset, which contains features computed from digitized images of fine needle aspirate (FNA) of breast masses.
* **Algorithm**: A Support Vector Machine (SVM) classifier is employed to perform the classification task.

**Methodology**

1. **Data Preprocessing**:
   * The dataset is loaded and examined for any missing or null values.
   * Features are selected, and the data is split into training and testing sets.
   * Feature scaling is applied to standardize the data.
2. **Model Training**:
   * An SVM classifier is instantiated and trained on the training data.
   * Hyperparameters may be tuned to optimize model performance.
3. **Model Evaluation**:
   * The trained model is evaluated on the test set.
   * Metrics such as accuracy, precision, recall, and F1-score are calculated to assess performance.
4. **Visualization**:
   * Confusion matrices and other plots may be generated to visualize the model's performance.

**Results**

The SVM classifier demonstrates high accuracy in distinguishing between malignant and benign tumors, indicating its effectiveness for this classification task.

**Conclusion**

This project showcases the application of Support Vector Machines in medical diagnostics, specifically in classifying breast cancer tumors. The methodology outlined serves as a foundational approach for similar classification problems in the healthcare domain.