**Project Title**: Thyroid Disease Prediction Using Machine Learning

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**Domain**: Healthcare

**Tech Stack**: Python, Machine Learning

**Project Overview**:

* **Objective**: To predict thyroid disease using machine learning techniques.
* **Dataset**: The dataset contains 3772 entries with 30 features related to thyroid conditions.
* **Data Preprocessing**:
  + Handled missing values and categorical data.
  + Used techniques like KNN Imputer and one-hot encoding.
  + Balanced the dataset using SMOTENC and RandomOverSampler.

**Models Used**:

1. **Logistic Regression**
2. **Support Vector Machine (SVM)**
3. **K-Nearest Neighbors (KNN)**
4. **Decision Tree**
5. **Random Forest**

**Results**:

* **Best Model**: Random Forest with an accuracy of 99.25%.
* **Evaluation Metrics**: Accuracy, Precision, Recall, F1 Score.

**Conclusion**:

* The Random Forest model performed the best, making it suitable for predicting thyroid disease.