Project Title : Disease Prediction Using Machine Learning

Description : This Machine Learning project predicts diseases based on the symptoms provided by the user. It employs three different machine learning algorithms: Decision Tree, Random Forest, and Naive Bayes, to ensure accurate predictions. The user interface is built using Tkinter for easy interaction.

Approach/ Algorithms:

- **Data Collection:** Gathered a dataset of symptoms and corresponding diseases.
- **Preprocessing:** Cleaned and pre-processed the data to make it suitable for model training.
- **Machine Learning Algorithms:**
    - **Decision Tree:** Used for classification based on decision making nodes.
    - **Random Forest:** An ensemble method that improves accuracy by averaging multiple decision trees.
    - **Naive Bayes:** A probabilistic algorithm that applies Bayes' theorem for prediction.

Test Procedures:

Train-Test Split: The dataset was split into training and testing sets (e.g., 80/20).
Cross-Validation: Used to assess the performance of the models.
Accuracy Measurement: Evaluated the models based on accuracy, precision, recall, and F1 score.

Results:

Model Performance:
- **Decision Tree Accuracy**: [75-85%]
- **Random Forest Accuracy**: [80-90%]
- **Naive Bayes Accuracy**: [65-85%]

User Interface: Demonstrated how users can input symptoms and receive predictions.

Conclusion/ Remarks:

The project successfully predicts diseases based on user symptoms with high accuracy using multiple machine learning algorithms. Future work could explore incorporating more complex algorithms or expanding the dataset for better generalization.