IBM ARTIFICIAL INTELLIGENCE GROUP 4

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2 Name of the Guide : Ms.D.Ragavi
Department / Designation : ECE/AP
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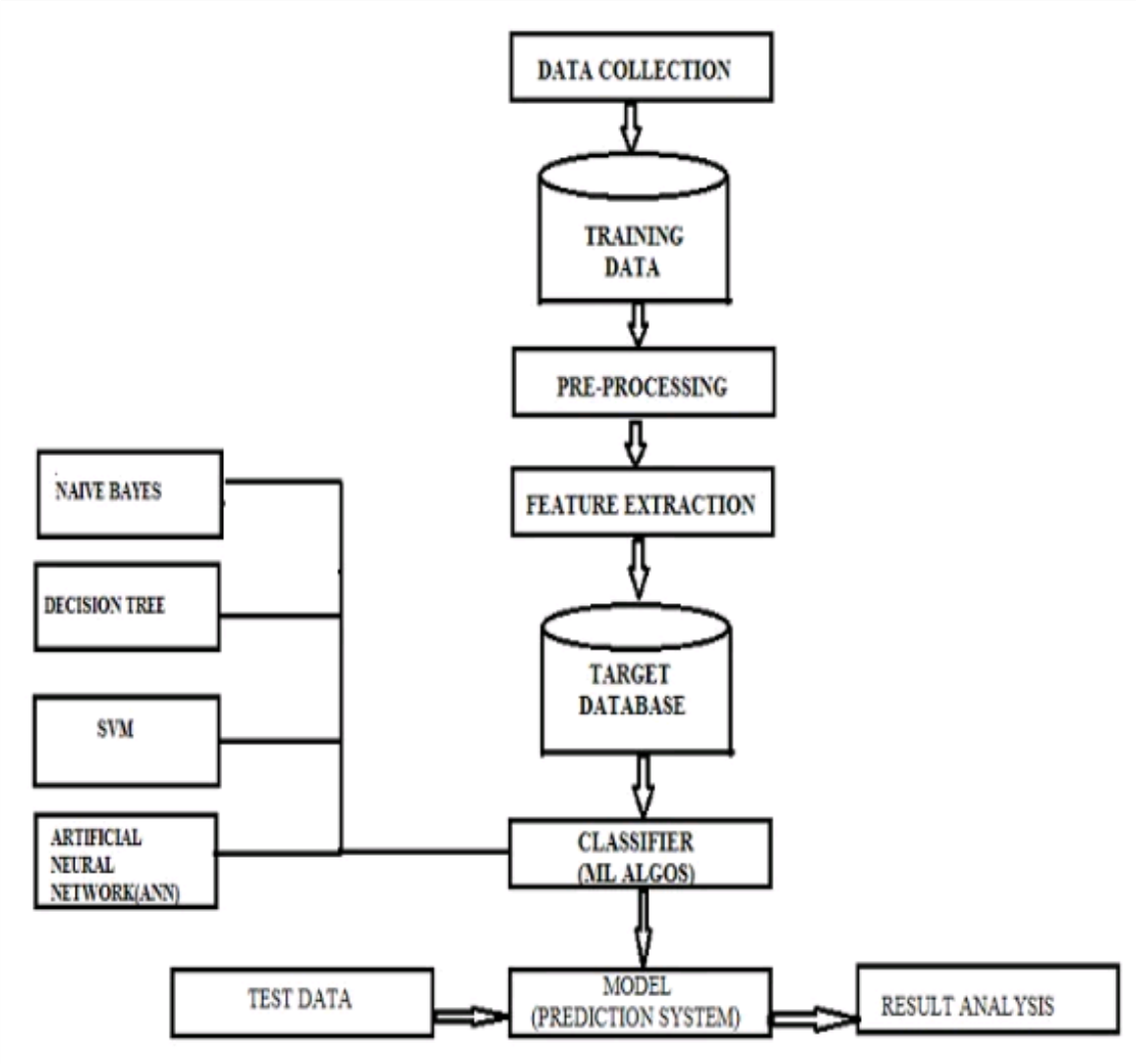
3 Project Title : Chatbot for AI-Powered Diabetes Prediction System

4 Problem Statement :The problem is to build an Al-powered diabetes prediction system that uses machine leaming algorithms to analyze medical data and predict the likelihood of an individual developing diabetes. The system aims to provide early risk assessment

5. Department **:** ECE

6.Design Thinking:



DATA COLLECTION:

Collect relevant data for diabetes prediction, including information on blood sugar levels, physical activity, and dietary habits.

TRAINING DATA:

Use a dataset for training the machine learning model. This dataset should include labeled examples of individuals with and without diabetes.

PRE-PROCESSING:

Clean and organize the collected data, handling missing values, outliers, and ensuring it's in a suitable format for training.

FEATURE EXTRACTION:

Extract important features from the pre-processed data. Features might include trends in blood sugar levels, lifestyle patterns, etc.

NAIVE BAYES:

Implement the Naive Bayes classifier, a probabilistic algorithm suitable for classification tasks.

ARTIFICIAL NEURAL NETWORK (ANN):

Implement an Artificial Neural Network (ANN), a machine learning algorithm that can capture complex relationships in data.

CLASSIFIER (ML ALGORITHMS):

Utilize various machine learning algorithms (ML algos) for classification, such as decision trees, support vector machines, etc.

DECISION TREE (T):

Incorporate a decision tree classifier as one of the ML algorithms, providing a clear and interpretable decision-making process.

TARGET DATABASE:

Store the trained model and relevant information in a target database for easy access and retrieval.

SYMPTOMS (SYM):

Include symptoms as input features for the model, helping to improve prediction accuracy.

TEST DATA:

Use a separate set of data (test data) to evaluate the model's performance and generalization to new, unseen data.

MODEL (PREDICTION SYSTEM):

Deploy the trained model to create a prediction system capable of predicting the likelihood of diabetes based on input features.

RESULT ANALYSIS:

Analyze the results of the predictions, evaluating the model's accuracy, precision, recall, and other relevant metrics