AI-BASED DIABETES PREDICTION SYSTEM

Problem Definition:

- The problem is to build an AI-powered diabetes prediction system that uses machine learning algorithms to analyze medical data and predict the likelihood of an individual developing diabetes.

- The system aims to provide early risk assessment and personalized preventive measures, allowing individuals to take proactive actions to manage their health

Design Thinking:

Data Collection:

- We need a dataset containing medical features such as glucose levels, blood pressure, BMI, etc., along with information about whether the individual has diabetes or not.

Data Preprocessing:

- The medical data needs to be cleaned, normalized, and prepared for training machine learning models.

Feature Selection:

- We will select relevant features that can impact diabetes risk prediction

Model Selection:

- ❖ We can experiment with various machine learning algorithms like Logistic Regression, Random Forest, and Gradient Boosting.

Evaluation:

- ❖ We will evaluate the model's performance using metrics like accuracy, precision, recall, F1-score, and ROC-AUC.

Iterative Improvement:

- ❖ We will fine-tune the model parameters and explore techniques like feature engineering to enhance prediction accuracy.

Conclution:

AI-based diabetes prediction system is a promising tool for early detection and risk assessment, offering a significant advancement in healthcare technology and the potential to improve overall health outcomes for those at risk of diabetes.