Project Design Phase-I
Solution Architecture

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Team ID	Team-592607
Project	Diabetes Prediction Using Machine Learning
Marks	4 Marks

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Solution Architecture:

Data ingestion and processing: This component is responsible for collecting and processing data from a variety of sources, such as electronic health records (EHRs), wearable devices, and patient surveys. The data may need to be cleaned, transformed, and enriched before it can be used for prediction.

Feature engineering: This component is responsible for creating features from the raw data that are informative for predicting diabetes risk. For example, features could be created for age, sex, family history, lifestyle habits, and clinical measurements.

Machine learning model: This component is responsible for training and deploying a machine learning model to predict diabetes risk. A variety of machine learning algorithms can be used for diabetes prediction, such as logistic regression, decision trees, support vector machines, and random forests.

Prediction service: This component is responsible for exposing the machine learning model to users and generating predictions of diabetes risk. The prediction service can be implemented as a web service, mobile app, or other type of application.

Model monitoring and retraining: This component is responsible for monitoring the performance of the machine learning model and retraining it as needed. This

is important to ensure that the model remains accurate over time as new data becomes available.

Scalability: Scalability is the ability of a system to handle increasing amounts of data and users without sacrificing performance. Diabetes prediction systems need to be scalable because they may need to process large volumes of data from a large number of users.

Reliability: Reliability is the ability of a system to function consistently and correctly over a period of time. Diabetes prediction systems need to be reliable because they are used to make important decisions about people's health.

Security: Security is the ability of a system to protect data from unauthorized access, use, disclosure, disruption, modification, or destruction. Diabetes prediction systems need to be secure because they handle sensitive personal health information.

Solution Architecture Diagram: