**Project Design Phase-I**
**Solution Architecture**

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| Date | 19 Oct 2023 |
| Team ID | PNT2022TMID593014 |
| Project Name | Diabetes Prediction Using Machine Learning |
| Maximum Marks | 5 Marks |

**Solution Architecture:**

The solution architecture for diabetes using machine learning involves a systematic approach to leverage data and algorithms to develop a predictive model that can assist in diagnosing or predicting diabetes.

It predicts the diabetes using Machine learning by real time data. It offers personalized diabetes assessments by considering both health data and lifestyle choices, we offer personalized diabetes assessments that consider factors such as age, gender, family history, body mass index, blood pressure, glucose levels, physical activity, and dietary habits By leveraging real-time data, our software can generate accurate predictions, empowering individuals, and healthcare providers to take proactive measures in managing diabetes risks. This breakthrough solution aims to revolutionize healthcare by promoting timely medical attention, reducing healthcare costs, and enhancing overall public health.

Through seamless integration with existing health monitoring systems, our software ensures a hassle-free and efficient experience. Patients can securely input their health data, including blood sugar levels, medication records, and regular exercise patterns. Our machine learning algorithms then analyze this data to provide personalized risk assessments, enabling individuals to make informed decisions about their health.

The positive impact of our software extends beyond individuals to the broader society. By enabling early detection of diabetes, we can prevent complications associated with the disease, such as cardiovascular

diseases and kidney problems. This, in turn, reduces the burden on healthcare systems and lowers long-term healthcare costs

1) Data Collection

2) Data Pre-processing

- Import Libraries.
- Import dataset.
- Analysis data
- Taking care of missing Values
- Variation analysis
- Encoding Categorical Data.
- Data Visualization.
- Splitting Data into Train and Test
- Feature Scaling.

3)Model Building:

- Initialising the model
- Creating object of the model
- Training the model
- Model evalution (using appropriate evaluation metrics)

4)Application Creation:.

- Create an HTML file
- Build a Python Code
- Create a pickle file
- Build css code
- Run the app in local browser
- Show the prediction

# Example - Solution Architecture Diagram: