Technology Stack (Architecture & Stack)

Date	2nd November, 2023
Team ID	Team-592321
Project Name	Diabetes Prediction using Machine Learning

Technical Architecture:

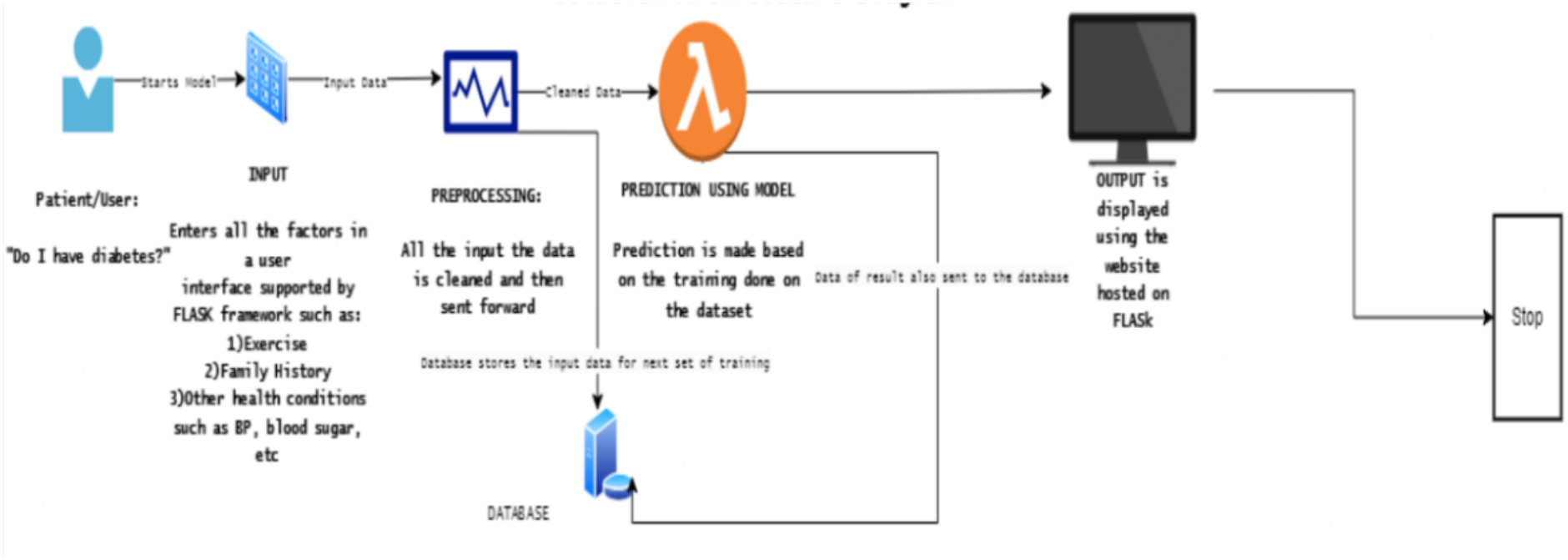

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	User gives input in the website created using Flask along with HTML templates	HTML, CSS, Flask
2.	Database	Local filesystem is use to hold the datasets	Local Filesystem
3.	File Storage	Local filesystem is use to hold the datasets	Local Filesystem
4.	Machine Learning Model	A CNN model comprised of Sigmoid/ReLU neurons in order to make a binary classifier	Binary Prediction Model, etc.
5.	Infrastructure (Server / Cloud)	Application Deployment on Local System	Localhost

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	TensorFlow APIs with keras, Flask framework, NumPy and Pandas frameworks, Scikit-learn framework, Seaborn framework	NumPy and Pandas are used for data manipulation and preprocessing. TensorFlow is used to make the CNN model. Scikit-learn is used to scale the dataset and also to evaluate metrics. Seaborn is used to do various variate analysis.
2.	Scalable Architecture	The machine learning model can be deployed on a larger scale using AWS, where datasets can be held in a server,	AWS for model deployment and hosting servers, Django for making the website for a larger scalable

		hence allowing cloud computing. Flask mircoframework can be scaled largely by changing to Django.	architecture.

S.No	Characteristics	Description	Technology
3.	Availability	Using AWS servers help in balancing the load and can also be used for cloud computing to further fasten the computations. Also, the source code will be available on GitHub for open source availability.	AWS services will be used for scalability while source code is available publicly on GitHub