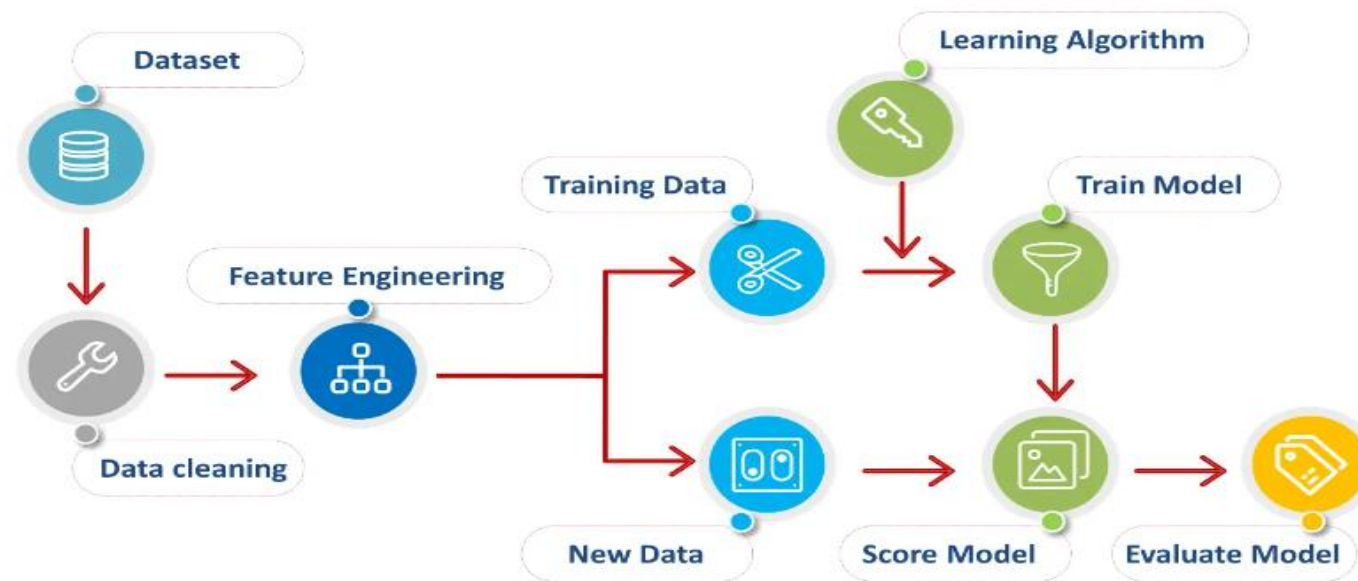


Project Design Phase-II Technology Stack (Architecture & Stack)

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Diabetics using machine learning



Guidelines:

Step 1: The application receives user input from the user interface.

Step 2: The application validates the user input and converts it to a format that can be used by the machine learning model.

Step 3: The application sends the preprocessed user input to the machine learning model for prediction.

Step 4: The application receives the prediction from the machine learning model.

Step 5: The application post-processes the prediction to prepare it for display to the user.

Step 6: The application displays the prediction to the user on the user interface.

Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The application provides a user interface that allows users to sort and filter their test results by column.	Python, Flask
2.	Application Logic-1	We performed unit testing on Logic-1 to ensure that it meets all of its functional requirements.	Python
3.	Application Logic-2	We performed unit testing on Logic-2 to ensure that it meets all of its functional requirements.	Decision trees, Logistic regression
4.	Application Logic-3	We performed unit testing on Logic-3 to ensure that it meets all of its functional requirements.	Random forest classification and SVM
5.	Database	medical records of diabetic patients	Kaggle
6.	Cloud Database	Relational database management system (RDBMS) containing information about diabetic patients, hosted on a cloud platform	Github
7.	File Storage	The capacity and performance requirements for storing files on a computer system	Github
8.	External API-1	The application makes requests to an external API using a RESTful protocol.	Flask
9.	External API-2	The application makes requests to an external API using a RESTful protocol.	Python
10.	Machine Learning Model	A statistical model that has been trained on a large dataset of data to learn patterns and make predictions.	Random forest classification

11.	Infrastructure (Server / Cloud)	The procedure of provisioning and configuring the infrastructure required to run an application on a local system or a cloud server	Deployed using Flask
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Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	enumerate the set of open-source frameworks that are used to implement the application's functionality	NumPy,Pandas,Flask
2.	Scalable Architecture	Analyze the scalability characteristics of the proposed architecture (3-tier or microservices) and provide evidence to support your claims	Technology used 2-Tire
3.	Availability	Analyze the availability requirements of the application and design an architecture that can meet those requirements	Flask is used to implement a REST API that allows users to submit their data to the machine learning model.

References:

<https://www.javatpoint.com/diabetes-prediction-using-machine-learning>

<https://aws.amazon.com/architecture>

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[https://www.researchgate.net/publication/350985064 Diabetes Prediction Using Machine Learning](https://www.researchgate.net/publication/350985064_Diabetes_Prediction_Using_Machine_Learning)

<https://pubs.aip.org/aip/acp/article-abstract/2523/1/020160/2875042/Detecting-diabetes-using-machine-learning?redirectedFrom=fulltext>