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

Date	03 October 2022
Team ID	PNT2022TMID12677
Project Name	Project - University Admit Eligibility Predictor
Maximum Marks	4 Marks

Technical Architecture:

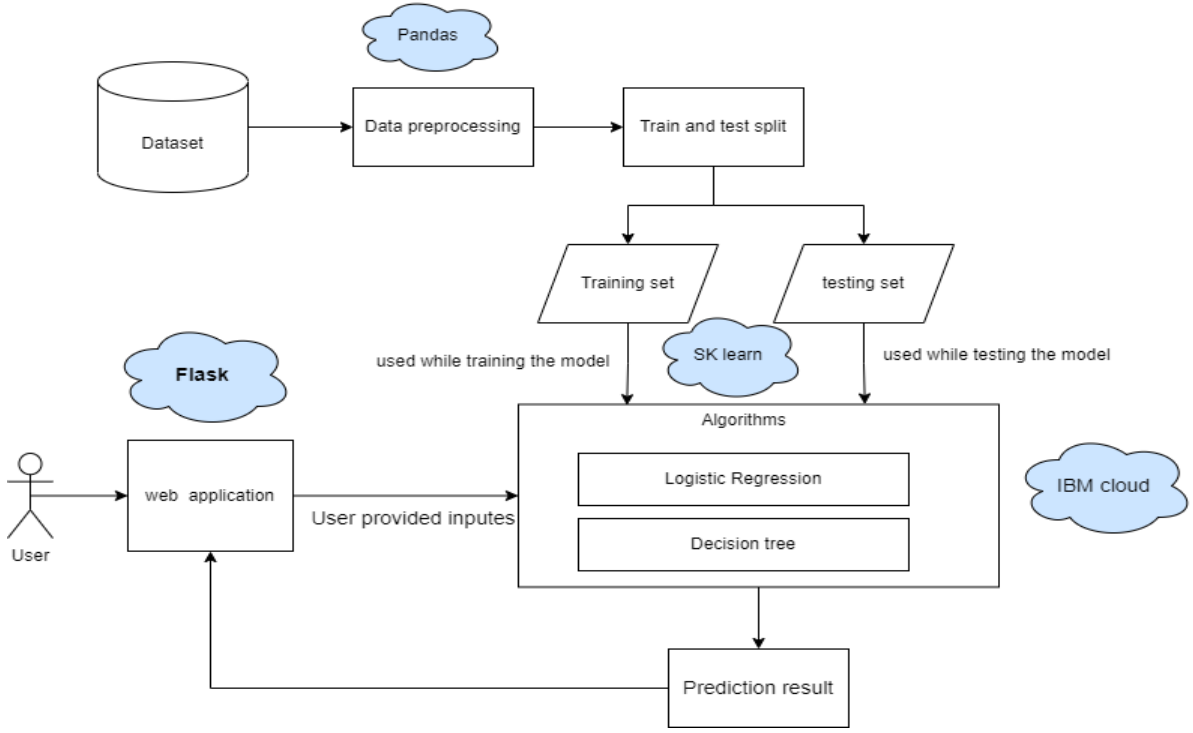

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The Front-end part of the application for accepting user data.	HTML, CSS, flask
2.	Dataset pre-processing	Removing inconsistencies in the dataset.	Pandas, Numpy, Python
3.	Application Logic	Logic for a process in the application.	IBM Watson ,python
4.	Database	For storing student & university details.	MySQL, NoSQL, etc.
5.	Data Visualization	Graphical visualization of student data, University's past acceptance trends, Heatmaps depicting the correlation of different attributes that play a crucial role in determining acceptance, etc	Matplotlib, Seaborn, Plotly
6.	File Storage	For storing the SOPs, LORs and other relevant PDF documents uploaded by the user.	IBM Cloud File Storage
7.	Machine Learning Model	Models to be used for prediction – Logistic Regression, Decision Tree based model.	Scikit-Learn
8.	Performance Metrics	Purpose of External API used in the application	Root Mean Squared Logarithmic Error (RMSLE), Mean Squared Error (MSE)
9.	Infrastructure	Accuracy of the ML model on the trained and tested data.	IBM Cloud Hosting .

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Security Implementations	Authenticating the users before making the predictions.	Cloud authentication services with modern,
2.	Availability	Since the web app is hosted on cloud, it can be accessed from any device, anywhere. Also, load balancing will be implemented using IBM cloud services to distribute the load across multiple servers.	IBM Cloud Hosting, IBM Load Balancer

S.No	Characteristics	Description	Technology
3.	Performance	We will be implementing 4 different ML models – Logistic Regression, Decision Tree, Random Forest and a Scikit-Learn, Root Mean Squared Logarithmic Error Hybrid model and then determine which model gives the highest accuracy after comparing the model-accuracy, precision and recall values	Scikit-Learn, Root Mean Squared Logarithmic Error (RMSLE), Mean Squared Error (MSE)
4.	Scalable Architecture	The proposed architecture is scalable even if the no. of users registering the web app increases exponentially as the system has a cloud storage for storing the pdf documents, which can easily handle many requests.	IBM Cloud Services.