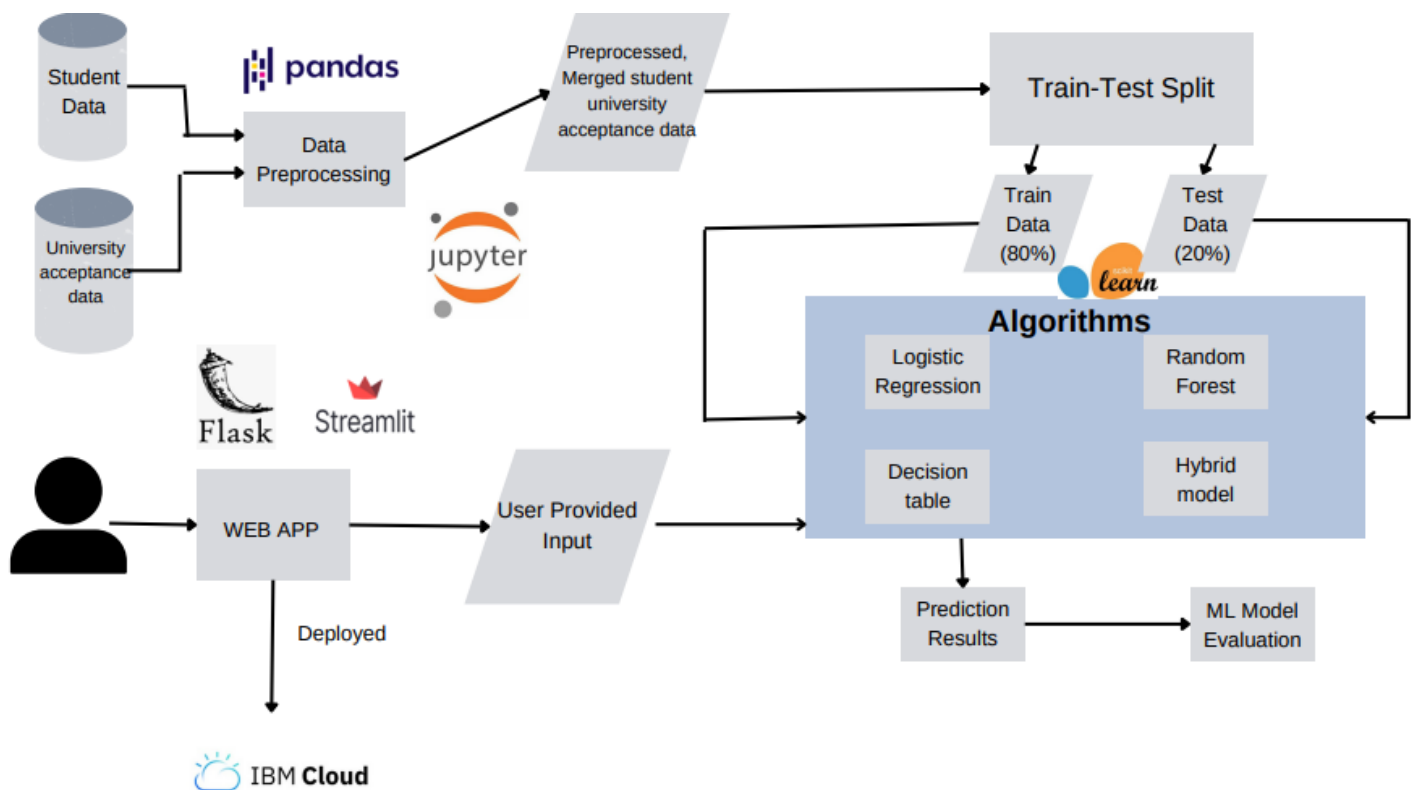


TECHNOLOGY ARCHITECTURE

Date	6 November 2022
Team ID	PNT2022TMID20988
Project Name	University Admit Eligibility Predictor
Maximum Marks	4 Marks

System Architecture Diagram:



COMPONENTS & TECHNOLOGIES

S.No	Component	Description	Technology
1.	User Interface	Front end part of the application for accepting the user's data	Flask, Streamlit
2.	Dataset pre-processing	Removing unpredictability in the dataset	Pandas, Numpy, Python
3.	Application Logic	Main business logic for the application	Python
4.	Database	Used for storing data about the student and universities	MySQL, IBM DB2, IBMCloudant, etc.
5.	Data Visualization	Graphical visualization of student data , university's previous acceptance rate, heat map representing the correlation of different attributes	Matplotlib, Seaborn,Plotly
6.	File Storage	Used for storing SOPs, LORs, grades and other documents uploaded by the user	IBM Cloud File Storage
7.	ML Model	Models used for prediction - Logistic Regression, DTree, Random Forest and Hybrid Deep Learning based model	Scikit-Learn
8.	Performance Metrics	Accuracy of the ML model on the trained and tested data	Root Mean SquaredLogarithmic Error(RMSLE), MeanSquared Error (MSE)
9.	Infrastructure	Cloud Server Configuration for hosting the web app	IBM Cloud Hosting

APPLICATION CHARACTERISTICS

S.No	Characteristics	Description	Technologies Used
1.	Security Implementation	Authentication of the user is crucial before making predictions	Cloud authentication service with modern, secure encryption schemes like SHA256
2.	Availability	As the web app is hosted on cloud, it is accessible and supported by any device from anywhere. Load balancing is also implemented using IBM cloud services to distribute the load across multiple servers.	IBM Cloud Hosting, IBM Load Balancer
3.	Performance	Four different ML models need to be implemented - Logistic Regression, Decision Tree, Random Forest and Hybrid model. The highest accurate model is obtained after comparing the model accuracy and recall values.	Scikit-Learn, Root Mean Squared Logarithmic Error (RMSLE), Mean Squared Error (MSE)
4.	Scalable Architecture	The proposed model should be designed in such a way that it should be scalable since the system has a cloud storage for storing the documents which easily handle many requests. Also, the possibility of website crashing is minimal because IBM Load balancer manages the distribution of load across various server.	IBM Cloud Services