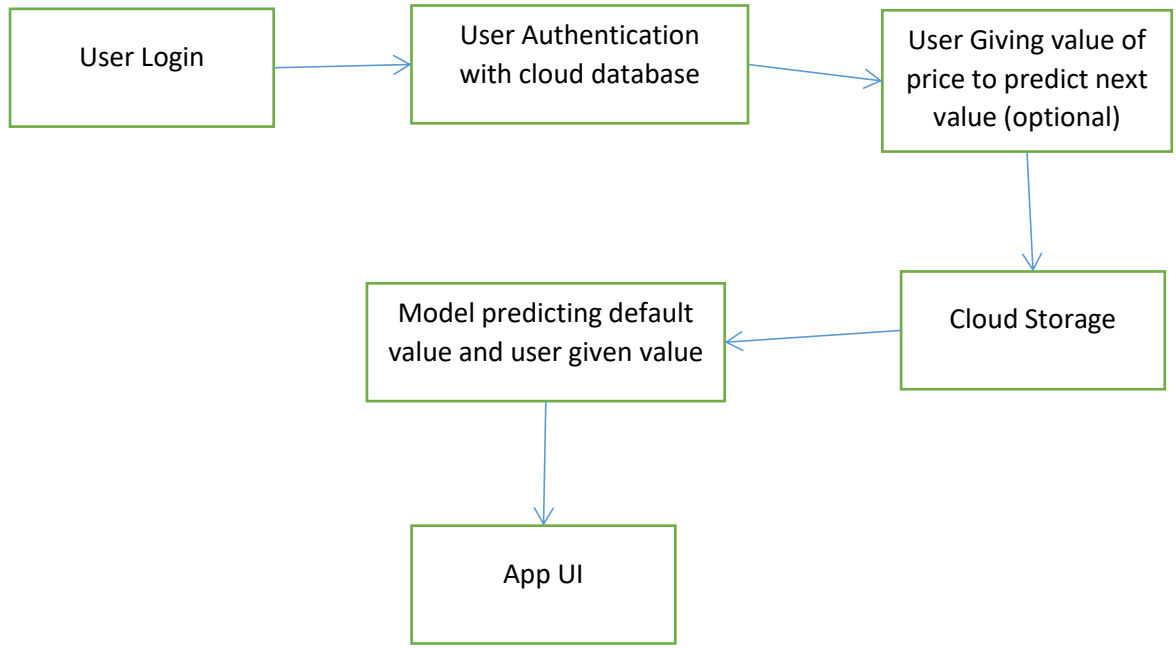
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	14 October 2022
Team ID	PNT2022TMID08704
Project Name	Project - Crude Oil Price Prediction
Maximum Marks	4 Marks

Technical Architecture:



S.No	Component	Description	Technology
1	User Interface	How user access solution. Web application	HTML,CSS and Angular js
2	Application Logic-1	Logic for a process in the application	Python (flask)
3	Database	Data Type access, Configurations	MySQL
4	Cloud Database	Database Service on Cloud	IBM Cloud
5	File Storage	File storage requirements	IBM Block Storage & Local Filesystem
6	External API-1	For standalone server	Firebase
7	Machine Learning Model	To predict upcoming price of crude oil	Recurrent neural network & LSTM
8	Infrastructure	Application Deployment on Local Server and firebase	Local, Firebase.

		Local Server Configuration: local host address	

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Framework -1	Python	Pandas, flask, numpy, tensorflow
2.	Open-Source Framework -2	Angluar js	App module, component module
3.	Open-Source Framework -3	HTML & CSS	and flex model
4.	Security Implementations	User data will be stored according to CIA model	End to end encrpytion (SHA-256)
5.	Scalable Architecture	IBM cloud and firebase both used for better performance in storage and authentication	IBM watson , Firebase, Mysql
6.	Availability	Handle huge requests ,avoid DDOS and XSS attack	Effective coding and restrictive user access based on need
7.	Performance	Handle 100 to 10000 users to use server at a time	Flask