

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

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| Date | 03 October 2022 |
| Team ID | PNT2022TMID43299 |
| Project Name | Project – Crude Oil Price Prediction |
| Maximum Marks | 4 Marks |

Technical Architecture:

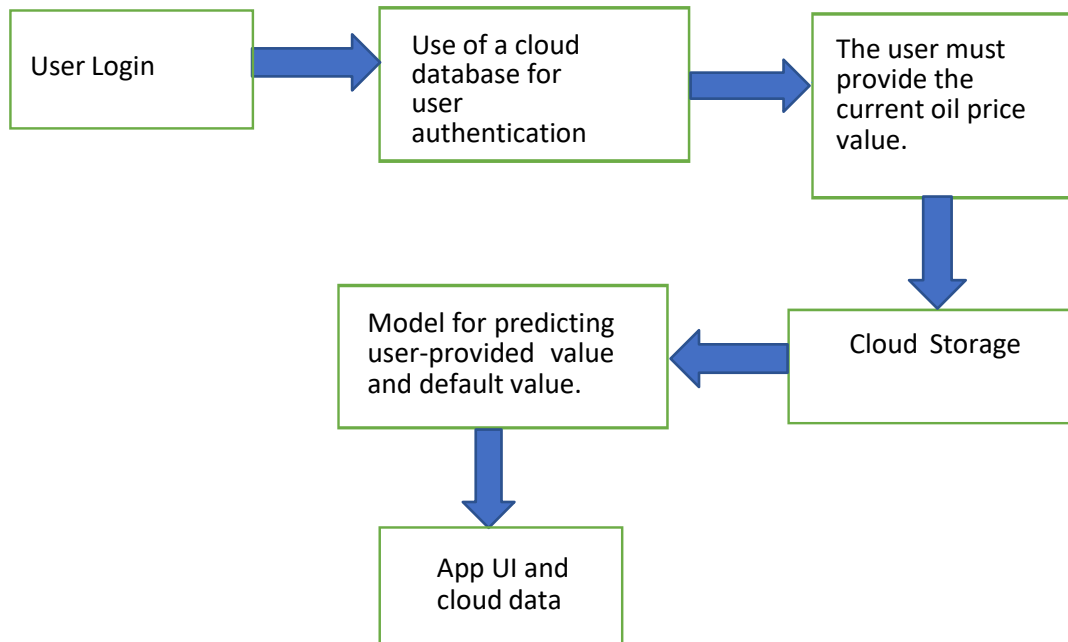


Table-1 : Components & Technologies:

| S.No | Component | Description | Technology |
|------|---------------------------------|---|------------------------------------|
| 1. | User Interface | Web application | HTML, CSS, JavaScript ,Angular Js |
| 2. | Application Logic-1 | Logic for a process in the application | Python |
| 3. | Application Logic-2 | Logic for a process in the application | IBM Watson Assistant |
| 4. | Database | Data Type, Configurations | MySQL |
| 5. | Cloud Database | Database Service on Cloud | IBM cloud |
| 6. | File Storage | File storage requirements | IBM Block Storage,Local Filesystem |
| 7. | External API-1 | Purpose of External API used in the application | Firebase |
| 8. | Machine Learning Model | Purpose of Machine Learning Model | Recurrent neural network & LSTM |
| 9. | Infrastructure (Server / Cloud) | Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration : | Local, Firebase. |

Table-2: Application Characteristics:

| S.No | Characteristics | Description | Technology |
|------|--------------------------|--|--|
| 1. | Open-Source Frameworks-1 | Python, | Pandas, flask, numpy, tensorflow |
| 2. | Open-Source Frameworks-2 | JavaScript ,Angular Js. | App module,component module |
| 3. | Security Implementations | User data will be stored according to CIA model. | End to end encryption (SHA- 256) |
| 4. | Scalable Architecture | IBM cloud and firebase both used for better performance in storage and authentication. | IBM watson , Firebase, Mysql |
| 5. | Availability | Handle huge requests,avoid DDOS and XSS attack. | Effective coding and restrictive user access based on need |
| 6. | Performance | Handle more than 1000 users to use server at a time. | Flask |