

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

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| Date | 03 October 2022 |
| Team ID | PNT2022TMID18285 |
| Project Name | Efficient Water Quality Analysis and Prediction Using Machine Learning |
| Maximum Marks | 4 Marks |

Technical Architecture

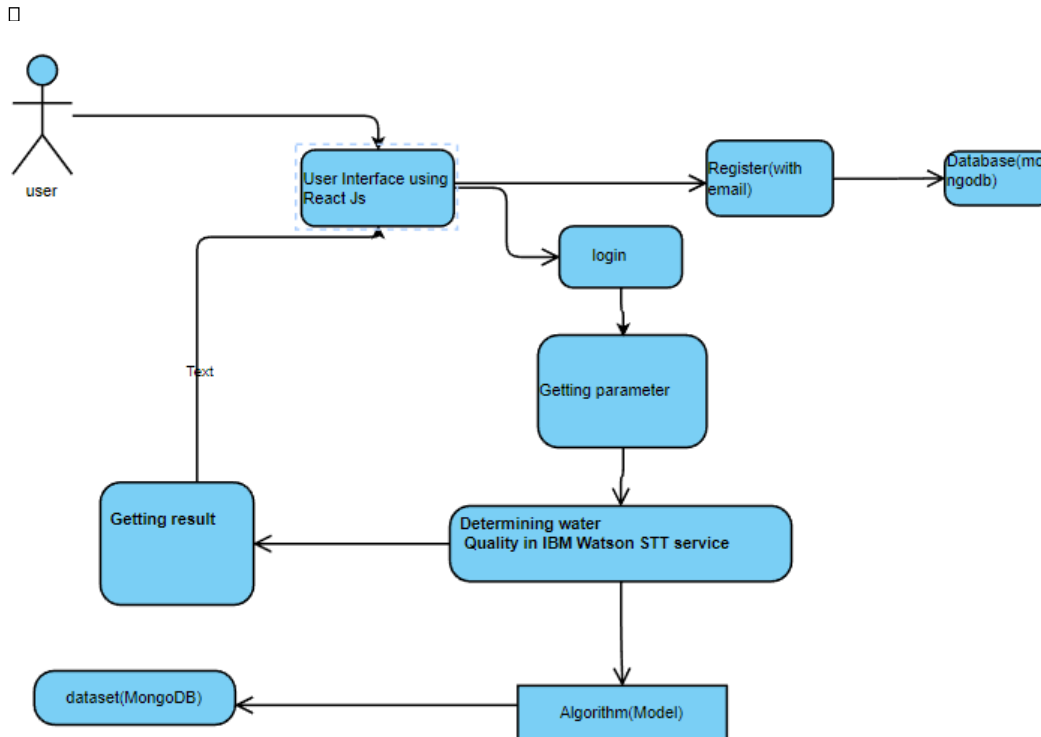


Table-1 : Components & Technologies:

| S.No | Component | Description | Technology |
|------|------------------------|---|--------------------------|
| 1. | User Interface | user interacts with web application | React Js |
| 2. | Application Logic-1 | Using python to get the results | Python |
| 3. | Application Logic-2 | Creating a model to classifying the given data | IBM Watson STT service |
| 4. | Application Logic-3 | Logic for a process in the application | IBM Watson Assistant |
| 5. | Database | To store user details and dataset | NoSQL |
| 6. | Cloud Database | Database Service on Cloud | mongoDB atlas |
| 7. | File Storage | - | - |
| 8. | External API-1 | Encrypting the password and communication details | NPM package encryption |
| 9. | External API-2 | Purpose of External API used in the application | Aadhar API, etc. |
| 10. | Machine Learning Model | Classifying that its enough to drink or not | Object Recognition Model |
| 11. | Infrastructure | - | - |

Table-2: Application Characteristics:

| S.No | Characteristics | Description | Technology |
|------|--------------------------|---|------------------------------------|
| 1. | Open-Source Frameworks | Using open source for external packages | Technology of Opensource framework |
| 2. | Security Implementations | For securing the details of the users | Packages for encrypting |
| 3. | Scalable Architecture | Hosting database in the cloud | Mongodb atlas , vercel hosting app |

| S.No | Characteristics | Description | Technology |
|------|-----------------|--|---------------|
| 4. | Availability | It's a web application | React js |
| 5. | Performance | 100 request per second for the database. | mongoDB atlas |