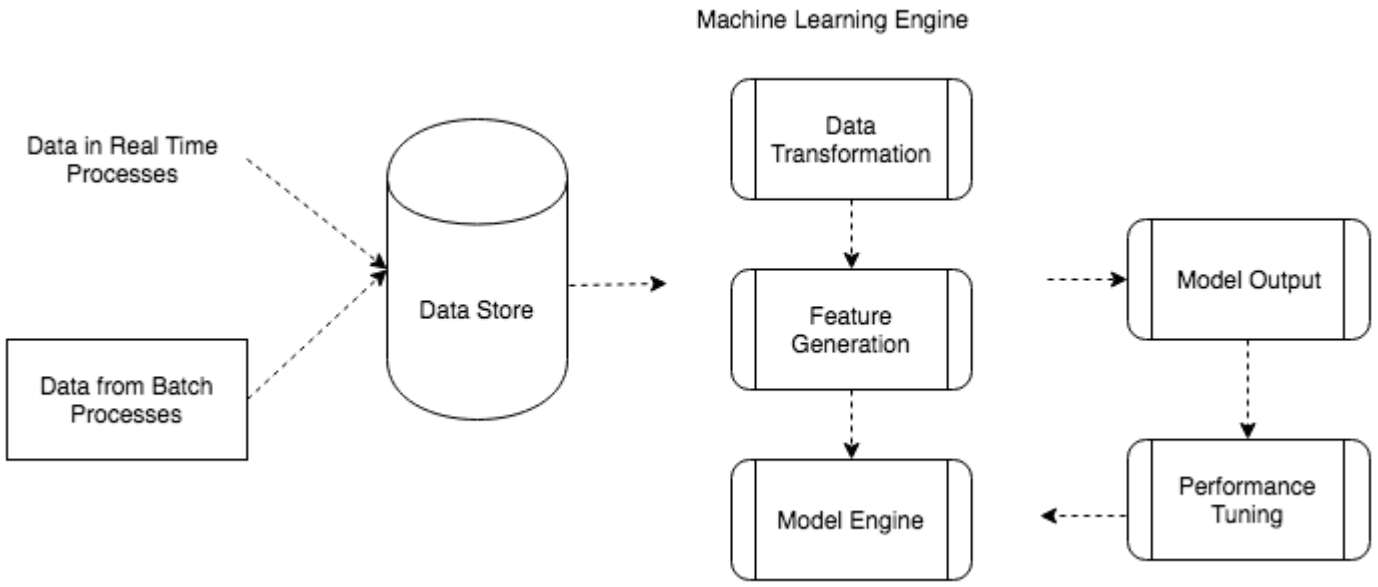
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	20 October 2022
Team ID	PNT2022TMID52978
Project Name	Efficient Water Quality Analysis and Prediction using Machine Learning
Maximum Marks	4 Marks

Technical Architecture:



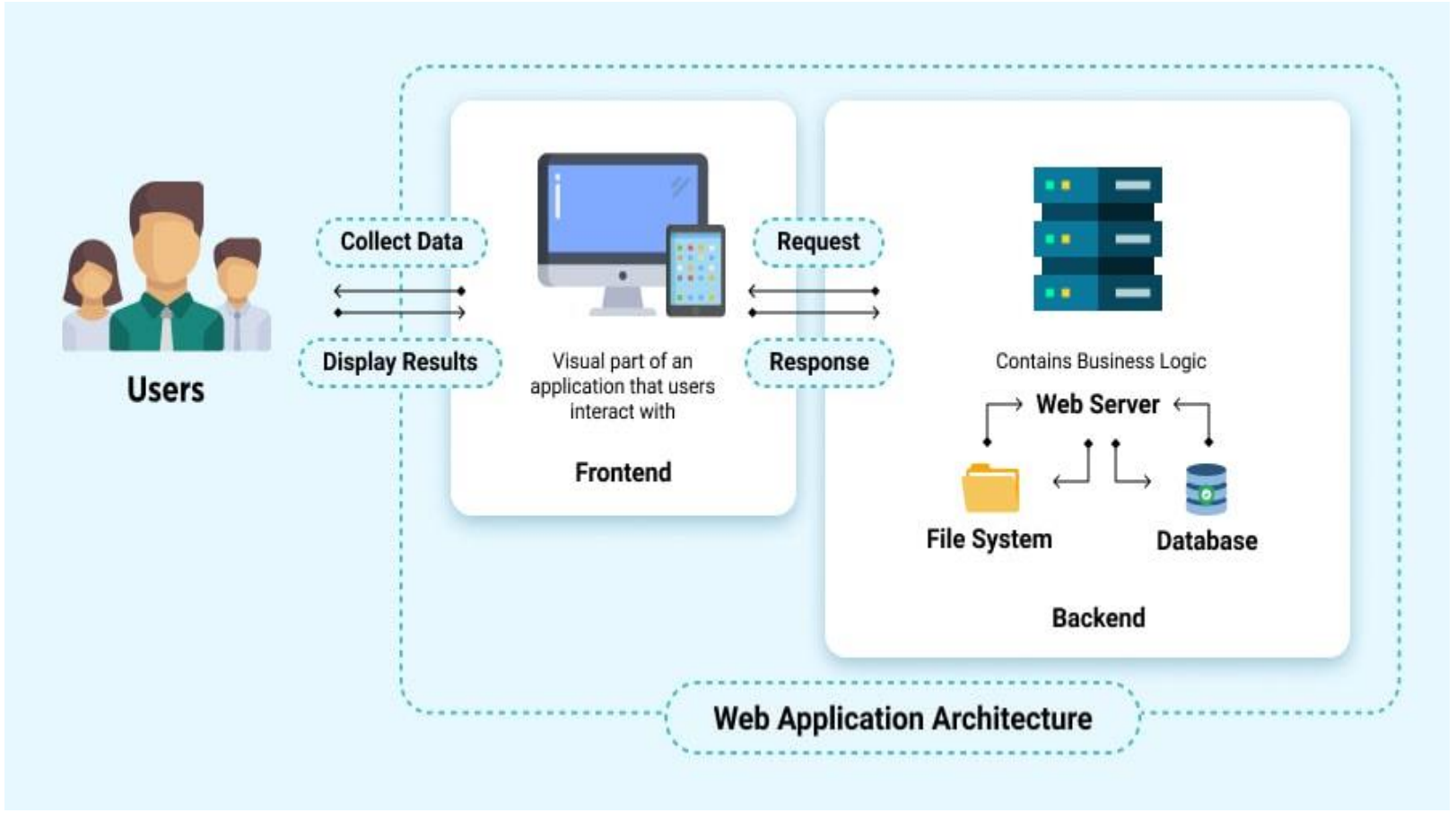

Users
Collect Data
Display Results
Visual part of an application that users interact with
Frontend
Request
Response
Contains Business Logic
Web Server
File System
Database
Backend
Web Application Architecture

Table-1 : Components & Technologies:

S.NO	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App	HTML, CSS, Python
2.	Application Logic-1	Logic for a process in the application	ML Algorithms.
3.	Application Logic-2	Logic for a process in the application	IBM Watson STT service
4.	Dataset	Data Type, Configurations etc.	Dataset used for this project is downloaded from Kaggle.
5.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudnet , IBM Cloud Watson
6.	File Storage	File storage requirements	IBM Cloud Containers
7.	Machine Learning Model	Purpose of Machine Learning Model	Classification and Regression of water quality index
8.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.NO	Characteristics	Description	Technology
1.	Scalable Architecture	Water quality index (WQI) and water quality Classification (WQC) are accurately predicted.	Surface water quality assessment tool will be used here
2.	Availability	Our model will keep working and be available for work even if there is infrastructure failure.	Machine learning
3.	Performance	The system effectively compares the input parameters given by the users with the dataset	Digital twin technology