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

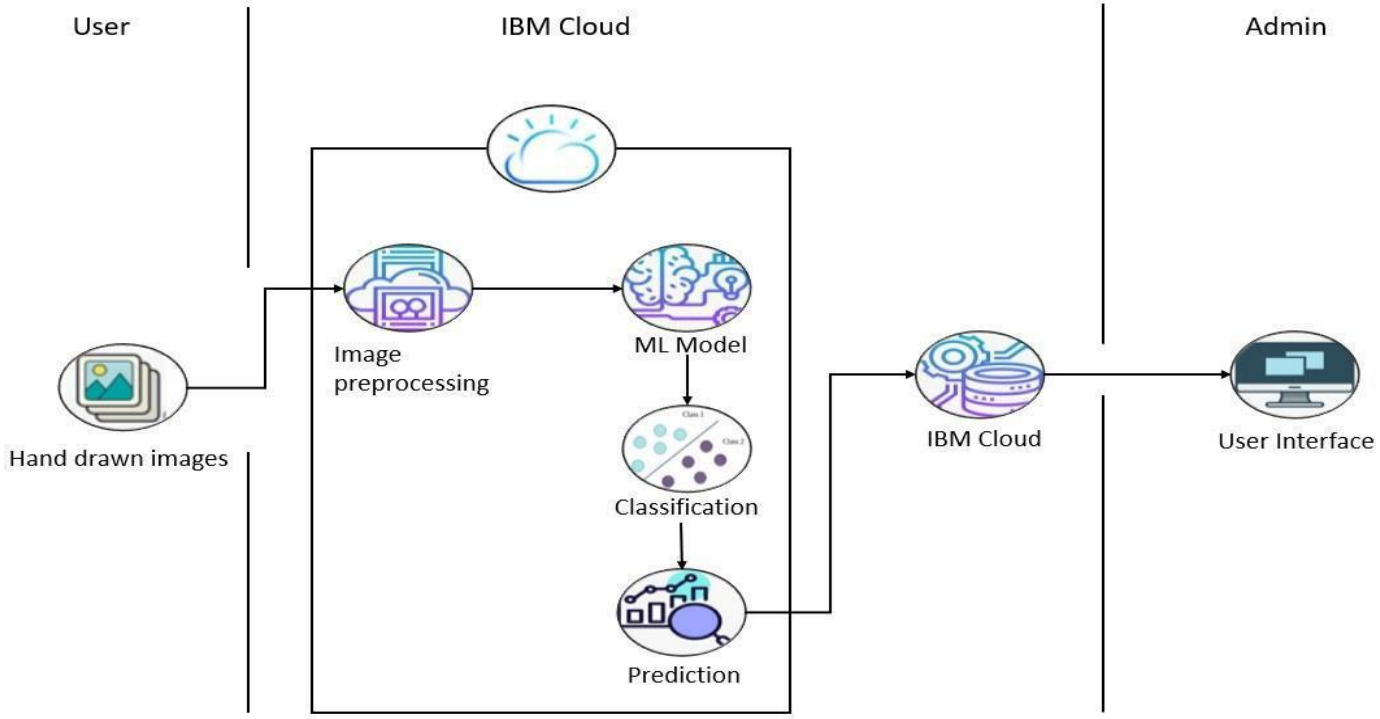
Date	28 October 2022
Team ID	PNT2022TMID39642
Project Name	Project – Detecting Parkinson's Disease Using Machine Learning
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Example: Order processing during pandemics for offline mode

Reference: https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/



Guidelines:

1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services
5. Indicate interface to machine learning models (if applicable)

Table-1: Components & Technologies:

S. No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g., Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript.
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 STT service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Database	Data Type, Configurations etc.	MySQL.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Local Filesystem
8.	External API	Purpose of External API used in the application	Aadhar API.
9.	Machine Learning Model	Purpose of Machine Learning Model	Random Forest classifier (ML), Decision tree classifiers, Support Vector Machines (SVM), Label encoding and One-hot encoding, K Nearest Neighbor (KNN) algorithm, XG boost algorithm (Gradient boosting)
10.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud	Local Server Configuration: Local System Cloud Server Configuration: IBM Watson (Cloud)

Table-2: Application Characteristics:

S. No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	NumPy, Pandas, metrics, XG boost, Python Flask (Web), Scikit learn (Sklearn), Tensor flow
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	Encryptions, Decryptions
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	MySQL – As it can store huge amount of data
4.	Availability	Justify the availability of application (e.g., use of load balancers, distributed servers etc.)	IBM Watson – Can easily be accessed
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Flask – Handle multiple requests

References:

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

https://www.ibm.com/cloud/architecture

https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d