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

Date	14 October 2022
Team ID	PNT2022TMID13704
Project Name	Detecting Parkinson's Disease using Machine Learning
Maximum Marks	4 Marks

Technical Architecture:

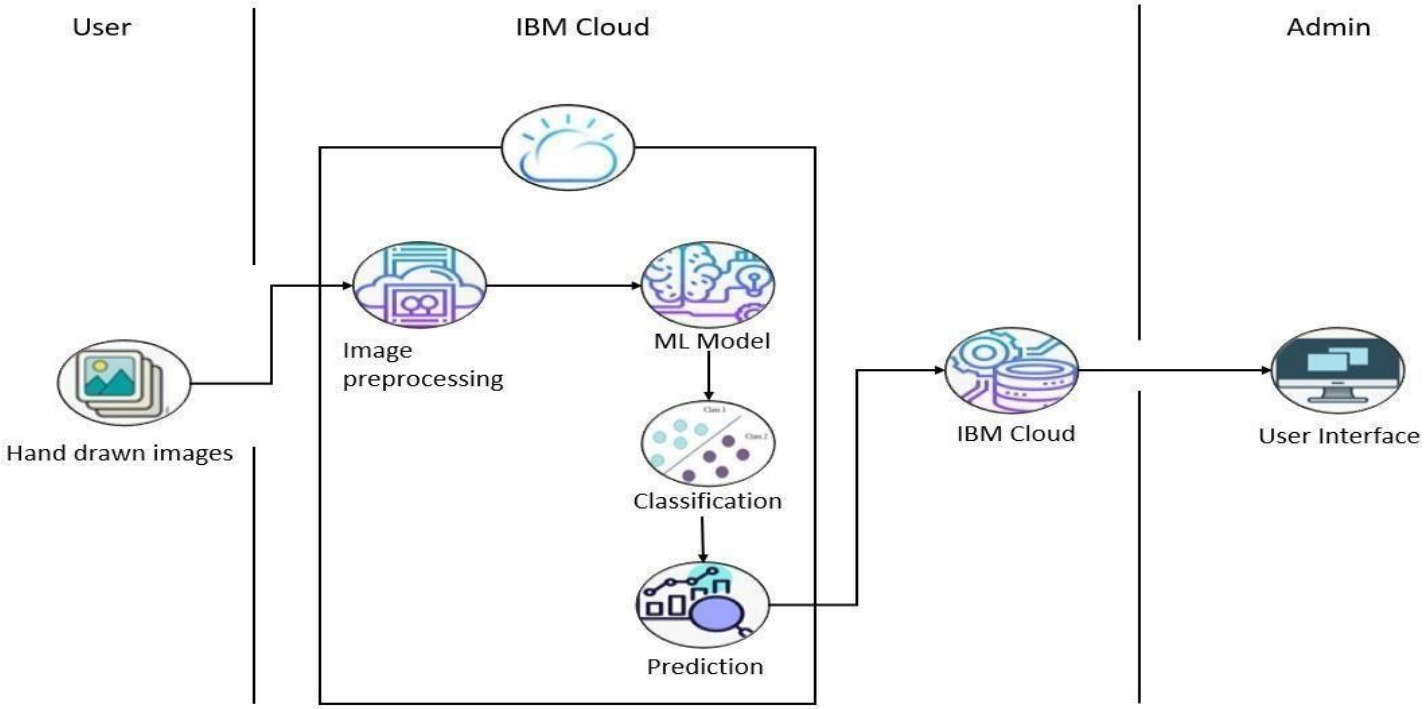

Table-1: Components & Technologies:

S. No	Component	Description	Technology
1.	User Interface feature	How user interacts with application e.g.,Web UI	HTML, CSS, JavaScript, Firebase (Web techniques)
2.	Application Logic-1	Logic for a process in the application	React and Firebase
3.	Application Logic-2	Information visibility of the disease towards the user	IBM Watson Assistant (Cloud)
4.	Cloud Database	Database Service on Cloud	IBM DB2
5.	Data Analysis	Data preprocessing and machine learning	Data collection and preprocessing, Exploratory Data Analysis (EDA), Data visualization
6.	Machine Learning	Important methods of Machine Learning	Data mining – Regression, Classification and Clustering
7.	Machine learning methods	Data mining	Random Forest classifier (ML), Support Vector Machines(SVM), Label encoding and One-hot encoding, K Nearest Neighbor (KNN) algorithm, XG boost algorithm (Gradient boosting).
8.	Artificial Intelligence	Computer vision to detect the Parkinson's disease	Computer vision with OpenCV
9.	Web application	Alternative to python flask	React and alternative web framework technique

10`.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud	Cloud Server Configuration: IBM Watson (Cloud)

Table-2: Application Characteristics:

S. No	Characteristics	Description	Technology
1.	Machine learning python 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

S.No	Characteristics	Description	Technology
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	IBM DB2 – As it can store huge amountof data
4.	Availability	Justify the availability of application (e.g., use ofload 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.	Web applications (React , JavaScript, Firebase)