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

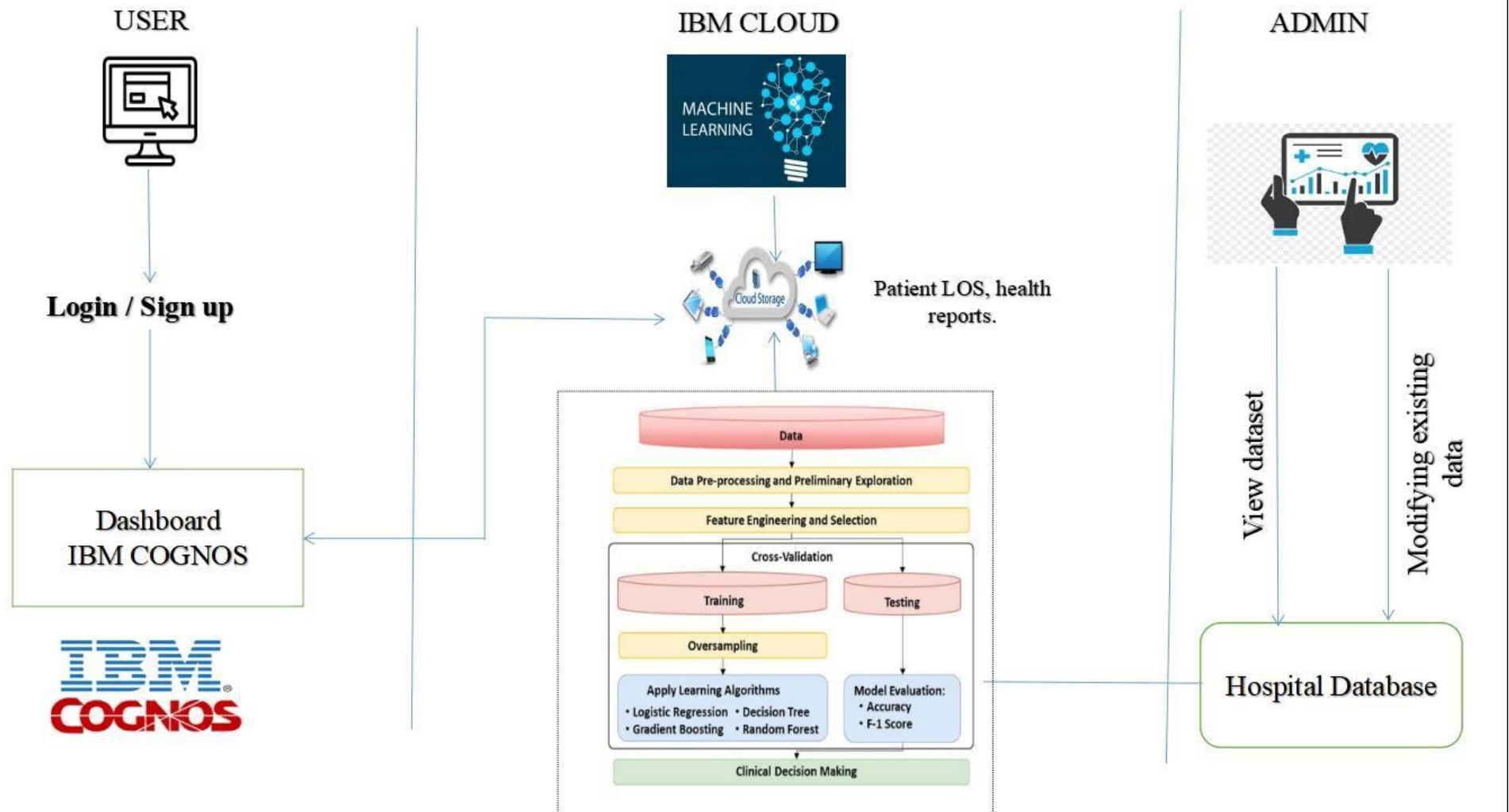| Date	14 October 2022
Team ID	PNT2022TMID08921
Project Name	Analytics for Hospitals Health-Care Data
Maximum Marks	4 Marks

TECHNICAL ARCHITECTURE

USER

IBM CLOUD

ADMIN

Login / Sign up

MACHINE LEARNING

Cloud Storage

Patient LOS, health reports.

View dataset

Modifying existing data

Dashboard
IBM COGNOS

IBM.
COGNOS

Data

Data Pre-processing and Preliminary Exploration

Feature Engineering and Selection

Cross-Validation

Training

Testing

Oversampling

Apply Learning Algorithms
• Logistic Regression • Decision Tree
• Gradient Boosting • Random Forest

Model Evaluation:
• Accuracy
• F-1 Score

Clinical Decision Making

Hospital Database

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 Assistant
4.	Database	Data Type, Configurations etc.	MySQL
5.	Cloud Database	Database Service on Cloud	IBM Cloud etc.
6.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
7.	External API-1	Purpose of External API used in the application	Aadhar API, etc.
8.	Machine Learning Model	Purpose of Machine Learning Model	Regression Model, etc.
9.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Python
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	Encryption,Firewall,Antivirus
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Microservices)	Supports higher workloads
4.	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	High availability enables your IT infrastructure to continue functioning even when some of its components fail.
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	A field of practice that uses various tools, processes, and ideas in a scientific manner to improve the desired outcomes of individuals and organizations.