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

Date	19 October 2022
Team ID	PNT2022TMID14570
Project Name	Project - Statistical Machine Learning Approaches to Liver Disease Prediction
Maximum Marks	4 Marks

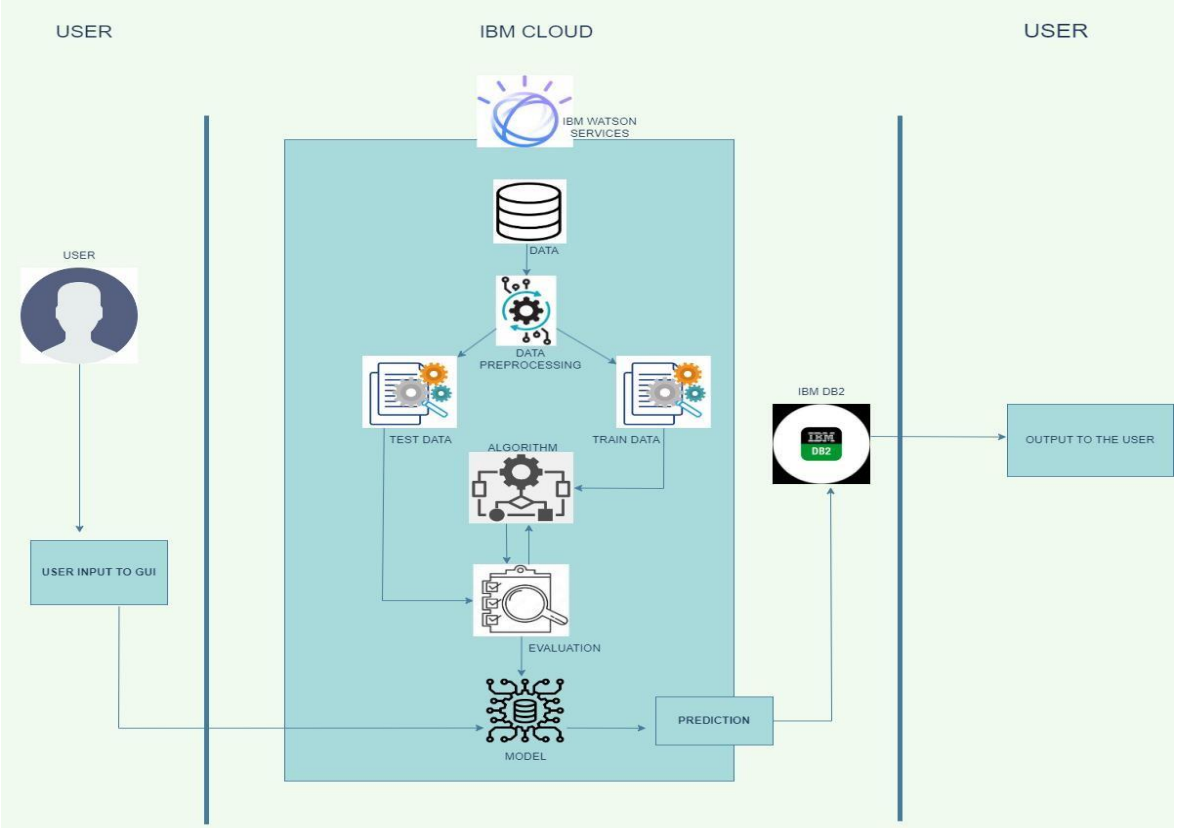

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web Interface	HTML, CSS, JavaScript
2.	Application Logic-1	Prediction Model	Python
3.	Application Logic-2	Dealing with Dataset	IBM Watson STT service
4.	Application Logic-3	Training and Building Deep Learning Model	IBM Watson studio
5.	Application Logic-4	Matching intent / Entities	IBM Watson Assistant ,IBM Watson Studio, Knowledge Base/Studio
6.	Application Logic-5	Deployment	Python Flask
7.	Database	Data Type –Dialog Query, Intent etc. Configurations done using small integration Code snippets such as Javascript , SQL and can also be done using Watson APIs.	MySQL or IBM DB2
8.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
9.	File Storage	For storing datasets	IBM Block Storage Service or Local Filesystem, IBM cloud, IBM Watson studio
10.	Machine Learning Model	Liver Disease detection model and other deep learning models	IBM Watson studio etc.
11.	Infrastructure (Server / Cloud)	On cloud server we will be deploying the web interface using flask in the web page	Python Flask

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Open-source frameworks used is IBM Watson	Technology of Opensource framework IBM Watson
2.	Security Implementations	IBM cloud	Watson assistant has certifications such as ISO,SOC2,US HIPAA, European Union GDPR,PCI DSS. We use security systems such as TCS/SSL,IPSEC ,Third party CAs, HTTPS, Encrypted file systems, Encrypted storage systems, Key management systems, AES -256 bit.
3.	Scalable Architecture	Web interface architecture consist of four pillars. They are intents, entities ,data flow, scripts (3 – tier architecture Micro-services architecture)	Technology used -IBM Watson Assistant
4.	Availability	The Web interface is made available using load balancers, distributed servers etc.	Technology used-IBM Watson Assistant
5.	Performance	IBM Watson –automate processes, The deep learning model is trained using IBM Watson studio for better performance, Cache, CDN's, etc.	Technology used-IBM Watson