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

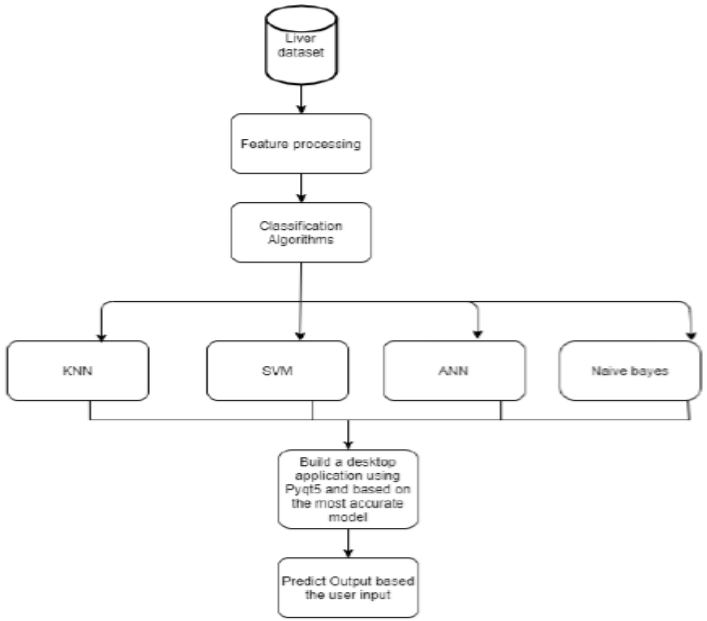
Date	13 October 2022
Team ID	PNT2022TMID40372
Project Name	Statistical Machine Learning Approaches to Liver Disease Prediction
Maximum Marks	4 Marks

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://www.ijert.org/research/liver-disease-prediction-system-using-machine-learning-techniques-IJERTV10IS060460.pdf



Guidelines:

1. Get the Image from the user (From Storage / Live Drawing)
2. Use HOG or Deep features method for better classification
3. Use Several best Algorithm techniques like KNN , SVM , Random Forest , Multilayer Perception , Native Bayes etc., to get accurate result
4. By Testing and get compared with trained result it predict and detect the Diagram Pattern
5. Finally the Machine Learning will predict with more efficiency

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 / Angular Js / React Js etc.
2.	Application Logic-1	Logic for a process in the application	Java / 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, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	Purpose of External API used in the application	IBM Weather API, etc.
9.	External API-2	Purpose of External API used in the application	Aadhar API, etc.
10.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model, etc.
11.	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.	Open-Source Frameworks	List the open-source frameworks used	Technology of Opensource framework
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	Technology used
4.	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	Technology used
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Technology used

References:

[1] Biomarkers for prediction of liver fibrosis in patients with chronic alcoholic liver disease written by Sylvie Naveau and Bruno Runyard.

[2] Strategic analysis in prediction of liver disease using classification algorithms written by Piyush Kr Shukla andBinish Khan.

[3] Software based prediction of liver disease with feature selection and classification techniques witten Jagdeep Singh, Sandeep Bagga and Ranjodh Kaur.

[4] Liver disease prediction using SVM and Naïve Bayes algorithm written by S Dhayanand.

[5] Prediction and analysis of liver diseases using data mining written Shambel Kefelgen, Pooja Kamat.