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

Date	15 October 2022
Team ID	PNT2022TMID35734
Project Name	Classification of Arrhythmia by using Deep learning with 2-D ECG Spectral Image Representation
Maximum Marks	4 Marks

Technical Architecture:

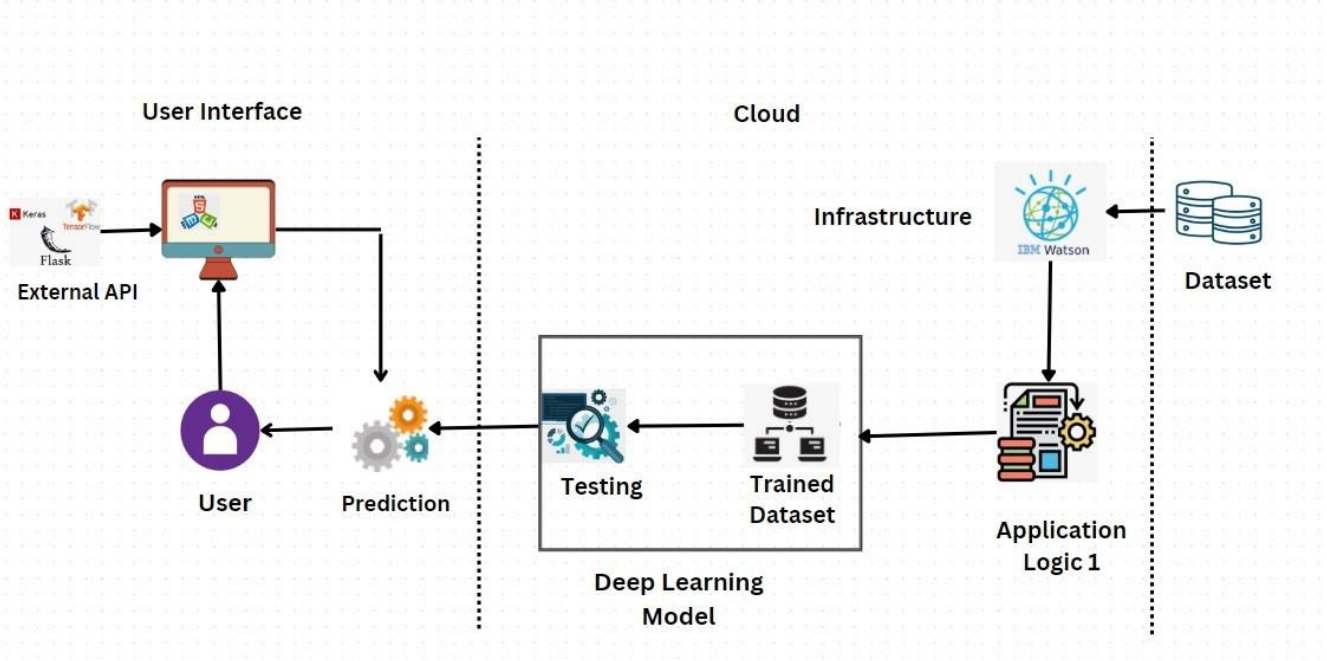

Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application – Web UI	HTML, CSS, JavaScript / React Js
2.	Application Logic-1	Data pre-processing	TensorFlow, Keras, Numpy, Pandas, SkLearn, Matplotlib, Seaborn
3.	Cloud Database	Database Service on Cloud	IBM Cloud
4.	File Storage	File storage requirements	IBM Block Storage /Google Drive
5.	External API-1	Defines communication between each requests and responses.	Flask, Keras, Tensorflow
6.	Deep Learning Model	Training and testing.	CNN, ResNet, Xception, VGG19
7.	Infrastructure (Server / Cloud)	Application Deployment	IBM Watson

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Open-source software is that by which the source code or the base code is usually available for modification or enhancement.	Flask
2.	Security Implementations	By placing a filtration barrier or fire wall between the targeted server and the attacker, the WAF is able to protect against attacks like cross site forgery, cross site scripting and SQL injection	SHA-256, Encryptions, IAM Controls, OWASP
3.	Scalable Architecture	Modular client-server architecture that consists of a presentation tier, an application tier and a data tier	3 tier architecture
4.	Availability	The data on each server can be simultaneously accessed and modified via a network.	Distributed server
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Cache