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

Date	28 October 2022
Team ID	PNT2022TMID41240
Project Name	Classification of Arrhythmia using Deep Learning with 2-D ECG Image

Technical Architecture:

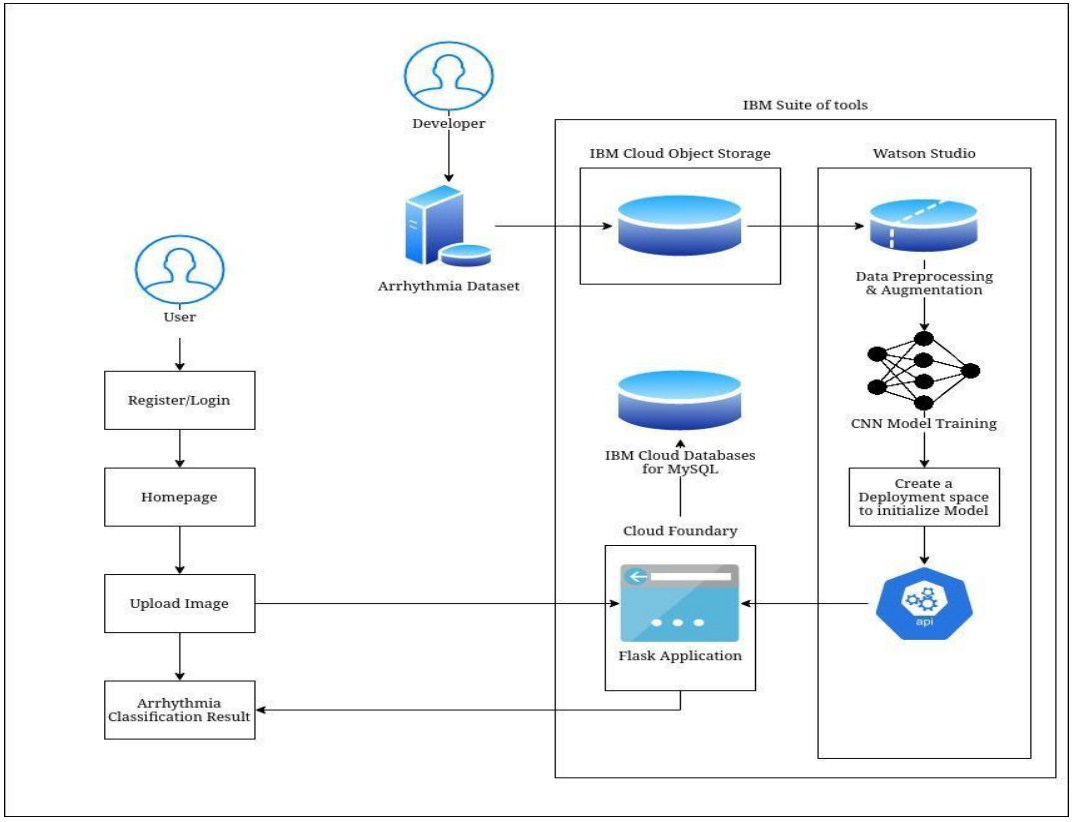

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, Flask
2.	Application Logic-1	Data preprocessing and data augmentation	Python, ImageDataGenerator Library
3.	Application Logic-2	Training the model	Python, CNN
4.	Application Logic-3	Access the model deployed in Watson studio using created API key	IBM Watson, Flask application
5.	Cloud Database	Database Service on Cloud	IBM cloud databases for MySQL,IBM cloud object storage,etc.
6.	Machine Learning Model	To classify Arrhythmia	CNN, Numpy,pandas, matplotlib, ImageDataGenerator, OpenCV
7.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud	Local, Cloud Foundry,IBM watson

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Tensorflow
2.	Security Implementations	Limit direct acces to deploy model	IAM Tokens(API key).
3.	Scalable Architecture	AutoScaling our service	Cloud Foundry
4.	Availability	high availability and disaster recovery	Cloud Foundry
5.	Performance	handling multiple request & distribute traffic in an optimal way	Cloud Foundry