Project Design Phase-II

Solution Requirements (Functional & Non-functional)

Date	03 October 2022
Team ID	PNT2022TMID37351
Project Name	Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
1	**User Registration**	➢ Registration through Form ➢ Registration through Gmail ➢ Registration through LinkedIN
2	**User Confirmation**	➢ Confirmation via Email ➢ Confirmation via OTP
3	**User Interface**	Create your profile and choose the appropriate files
4	**User Input**	➢ Upload the dataset ➢ Upload the image as jpeg/png format
5	**Data Processing**	➢ Evaluate the model using test dataset ➢ Train the dataset by DI algorithm ➢ Use Keras and Tensorflow for the accurate result of the trained CNN model
6	**Image Prediction**	Accuracy of the image prediction will be at the rate of 90.4%
7	**Report Generation**	The final report with the classification of the corresponding type of arrhythmia in person will be displayed.

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
1	**Usability**	➢ Used to identify the abnormal heart rhythm ➢ Classify the abnormalities using deep learning ➢ Can be used for patients of all age groups
2	**Security**	➢ The received data should be kept and processed confidentially ➢ The data can be accessed only by authorized people
3	**Reliability**	By the usage of efficient algorithm, it must classify the abnormalities without any mistakes.
4	**Performance**	➢ Data of different people can be processed at the same time ➢ Greater accuracy in result ➢ Saves time in diagnosing the disease
5	**Availability**	➢ It is available to anyone with access to internet.
6	**Scalability**	➢ Number of dataset processing won't affect the performance of the system. ➢ Thus, it can process the data of large number of patients and produce accurate results.