Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	03 October 2022
Team ID	PNT2022TMID04852
Project Name	Project - 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)
FR-1	**User Registration**	1. Registration through Form 2. Registration through Gmail 3. Registration through LinkedIN
FR-2	**User Confirmation**	1. Confirmation via Email 2. Confirmation via OTP
FR-3	**User Interface**	1. Create account 2. Sign in to the account 3. Check user profile 4. Upload the file 5. Check the user file 6. Get arrhythmia classification 7. Get treatment remedies 8. Sign out from the account 9. Delete account
FR-4	**Data Pre-processing**	1. Collect the Dataset 2. Create the model 3. Train the model using training dataset 4. Evaluating the model using testing dataset 5. Trained the model using CNN algorithm for more accurate result using Tensorflow, Kearas packages
FR-5	**Predict ECG Spectral Image**	1. Model will get user image from web interface 2. Model will classify the ECG Spectral image with help of knowledge from the training dataset 3. Display the Arrhythmia type and treatment remedies

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	This web application easy to use. User can login to the interface then by uploading the image file after that they can get classification.
NFR-2	**Security**	This web application is purely secured. It won't leak the user information & their ECG spectral image also treated to be secured because this application uses HTTPS protocol and it going to be hosted in the IBM cloud and the data are securely stored in the IBM block.
NFR-3	**Reliability**	The extent to the consistently performs the specified functions without failure.
NFR-4	**Performance**	It essentially specifies how the system should behave and that it constrains the ECG Spectral image of accurate disease information gathering.
NFR-5	**Availability**	Availability describes how likely the system is accessible to a user at a given point in time and the periodically for the solutions.
NFR-6	**Scalability**	The ability of the user problem in arrhythmia disease is to handle the Spectral image classification and its ability to quickly enlarge. Easy to update the features of the application.