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

Date	03 October 2022
Team ID	PNT2022TMID00351
Project Name	Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation
Maximum Marks	4 Marks

Functional Requirements:

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Gmail. Registration through Phone number.
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User Login	Login using password created during registration.
FR-4	Uploading ECG data	Registered user should be able to upload ECG reports on the application for analysis
FR-5	Sensing of abnormality	The trained ECG model should be able to identify arrhythmic heart beats and alert users for the abnormality.
FR-6	Informing the type of arrhythmia	Further the model should accurately classify the kind of arrhythmia inorder to carry out the appropriate treatment rapidly .

Non-functional Requirements:

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The proposed model is a web application that can be used on a computer or mobile phones with internet connectivity.
NFR-2	**Security**	Unique account creation using phone number or Gmail and verification of password.
NFR-3	**Reliability**	Since it uses an optimised algorithm, it is capable of processing large datasets as well as able to handle several user requests simultaneously.
NFR-4	**Performance**	It achieves 99.61% specificity, 99.11% average accuracy and 98.59% positive predictive value (precision)
NFR-5	**Availability**	Since the 1-D ECG data is converted to 2-D spectral images,it increases the versatility of the model making it's processing fast and available to a number of users at a time.
NFR-6	**Scalability**	The experimental setup consisted of an eighth-generation ASUS server with 32GB internal RAM, 500 GB external SSD hard drive with the addition of internal hard drive, and NVIDIA 1080

		GPU with 11 GB memory.Thus with the help of these hardwares, we achieve enhanced scalability.