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

Date	15 October 2022
Team ID	PNT2022TMID34108
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	Registration through Form Registration through Gmail Registration through phone number
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User personal details	Name of the user User age User height User weight
FR-4	Types of heart disease	1) Arrhythmia *Ventricular fibrillation. *Ventricular tachycardia. *Premature ventricular beats (PVCs) *Torsades de pointes. 2)Heart beat rate 3) pressure rate
FR-5	Integration with ECG machine	1)Signal given as input to the machine 2) Analyze the signal and gives heart condition
FR-6	User medical condition	An ECG measures the timing and duration of each electrical phase in the heartbeat

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Smartwatches can be used for atrial fibrillation (AF) detection, but little is known about how older adults at risk for AF perceive their usability.
NFR-2	**Security**	During an ECG, sensors (electrodes) that can detect the electrical activity of the heart are attached to the chest and sometimes to the arms or legs. An ECG measures the timing and duration of each electrical phase in the heartbeat. The information about the user are very secure and uploaded to a secure datebase
NFR-3	**Reliability**	Heart arrhythmia treatment may include medications, catheter procedures, implanted devices or surgery to control or eliminate fast, slow or irregular heartbeats. A heart-healthy lifestyle can help prevent heart damage that can trigger certain heart arrhythmias. This application provide reliable and accurate output by comparing with various datasets we have trained the model with
NFR-4	**Performance**	studies show that Structured Streaming has higher performance than other streaming systems. Recent research has compared Structured Streaming with other streaming platforms developed in a similar infrastructure.
NFR-5	**Availability**	This is made available to everyone from patient to medical professionals to make lives easier
NFR-6	**Scalability**	These signals are often used to diagnose heart abnormalities and arrhythmias and to measure the electrical activity of the heart over a

		while. This is made scalable. It can include the future technologies and wide range of other databases to find various types of heart diseases including arrhythmia.It is also made in a way to be accessed by multiple users