

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

Date	28 October 2022
Team ID	PNT2022TMID43406
Project Name	Classification of Arrhythmia by Using Deep Learning
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	Website Introduction	It encloses the code, graphics, and other learners' information about cardiovascular diseases and Arrhythmia classification.
FR-2	Image selection	Allows users to choose or upload image files from any system being used.
FR-3	Image prediction	Application gives you the classification of Arrhythmia based on the filtering of the given images.
FR-4	Arrhythmia classification model	Tensor Flow
FR-5	MIT-BIH Arrhythmia database	4000 long-term recordings from Beth Israel Hospital. We can also find datasets in kaggle.com, data.gov, UCI machine learning repository, etc.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	It should be comfortably usable and easy to understand by all.
NFR-2	Reliability	Deep learning and CNN models can be used behind the feature extraction technique. Other tools like Short term Fourier transform (STFT), and ECG spectrogram will deem useful for heartbeat pattern classification. The signals can be analyzed in 4-D domains for the betterment of efficiency.
NFR-3	Performance	The minute changes in pattern differences during feature extraction should be carefully noted. The arrhythmia-type classification should be accurate. Also, the delay in giving the desired results should be minimum.

NFR-4	Availability	Access is open to medical professionals mainly, but also to patients or others who could understand the fundamentals.
NFR-6	Scalability	Should be able to distinguish the three types and all their subtypes of Arrhythmia.