PROJECT DESIGN PHASE-1

PROPOSED SOLUTION TEMPLATE

DATE	7th October 2022
TEAM ID	PNT2022TMID28062
PROJECT NAME	Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation
MAXIMUM MARKS	

Proposed solution template:

Project team shall fill the following information in proposed solution template.

S.NO	PARAMETER	DESCRIPTION
1.	Problem Statement (Problem to be solved)	Patient suffering from Arrhythmia has to be treated as early as possible and each arrhythmia has its own treatment so it might be risky to the patient, if detected late or the possibility of medical errors by doctors as ECG are reviewed manually
2.	Idea / Solution description	In this project, we plan to build an effective electrocardiogram (ECG) arrhythmia classification method using a convolutional neural network (CNN), in which we classify ECG into seven categories, one being normal and the other six being different types of arrhythmias using deep two-

		dimensional CNN with ECG images. We plan on creating a web application where the user selects the image which is to be classified. The image is fed into the model that is trained and the cited class is then to be displayed on the webpage.
3.	Novelty/Uniqueness	➢ Deploys the model to a mobile application by assigning all heavy pre-processing to the cloud through an API ➢ Usage of cloud-based ML-training services ➢ Proposed solution will be deployed in the cloud making it easily accessible over the internet to people across the globe. ➢ Provide well detailed instructions or point the user to well-equipped hospitals to get good treatment.
4.	Social Impact / Customer Satisfaction	It's very hard to interactively predict the abnormal heartrates. Hence an automated system which can be able to identify discrete abnormal heartbeats from an abundant ECG data will create a moral impact among the society.
5.	Business Model (Revenue Model)	This project would be a not-for-profit initiative with the sole

		purpose of it being a helping aid for people in need. To recover server and hosting charges we intend on monetizing the website using Google AdSense to yield a monthly revenue.
6.	Scalability of the Solution	It is also possible to scale the app[model] further by increasing the images fed to the app[model] thereby making some small changes so that it could be combined with other apps to build integrated app which serves well for customer need