Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	PNT2022TMID25512
Project Name	Visualizing and Predicting Heart Diseases with an Interactive Dash Board
Maximum Marks	2 Marks

Proposed Solution:

S. No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The leading cause of death in the developed world is heart disease. Therefore, there needs to be work done to help prevent the risks of having a heart attack or stroke.
2.	Idea / Solution description	An effective heart disease prediction system (EHDPS) is developed using neural network for predicting the risk level of heart disease. The system uses 15 medical parameters such as age, sex, blood pressure, cholesterol, and obesity for prediction. The EHDPS predicts the likelihood of patients getting heart disease. It enables significant knowledge, eg, relationships between medical factors related to heart disease and patterns, to be established. We have employed the multilayer perceptron neural network with backpropagation as the training algorithm. The obtained results have illustrated that the designed diagnostic system can effectively predict the risk level of heart diseases. **Keywords:** data mining, neural network, multilayer perceptron neural network, backpropagation, disease diagnosis
3.	Novelty / Uniqueness	The predict of heart disease is done in three phases: feature selection process in this process we will automatically or manually select those features which contribute most to your prediction variable or output in which you are interested in. The second phase is applying the machine learning algorithms which are AdaBoost, XGBoost and Stacking in which the data will be trained and tested. The third and the last phase is the User interface in which the user will enter his details and then the machine learning models will predict that the user will have heart diseases in future or not.

4.	Social Impact / Customer Satisfaction	Given their flexibility, machine learning approaches may provide an opportunity to incorporate the complex nature of social determinants of health. The limited variety of sources and data in the reviewed studies
		emphasize that there is an opportunity to include more social determinants of health variables, especially environmental ones, that are known to impact cardiovascular disease risk and that recording such data in electronic databases will enable their use.
5.	Business Model (Revenue Model)	In today's digital world, several clinical decision support systems on heart disease prediction have been developed by different scholars to simplify and ensure efficient diagnosis. This paper investigates the state of the art of various clinical decision support systems for heart disease prediction, proposed by various researchers using data mining and machine learning techniques. Classification algorithms such as the Naïve Bayes (NB), Decision Tree (DT), and Artificial Neural Network (ANN) have been widely employed to predict heart diseases, where various accuracies were obtained. Hence, only a marginal success is achieved in the creation of such predictive models for heart disease patients therefore, there is need for more complex models that incorporate multiple geographically diverse data sources to increase the accuracy of predicting the early onset of the disease.
6.	Scalability of the Solution	• Our system response the user request with in few seconds. • Our system response many numbers of request at a time. • So, this will ensure our application will scalable