Project Design Phase-I
Proposed Solution

Date	13 October 2022
Team ID	PNT2022TMID47218
Project Name	Project-Visualizing and Predicting Heart Diseases with an Interactive Dashboard
Maximum Marks	2 Marks

Proposed Solution:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The leading cause of death is heart disease.Heart disease refers to several types of abnormalities in heart conditions.It is inconvenient for a common man to take ECG tests periodically.Also,lack of proper diagnostic tools and accurate results affect the treatment of cardiac patients.Thus based on a patient's medical history, an expert's symptom analysis report, and physical laboratory results, invasive procedures are used to identify heart related problems.And so, there is a need for a replacement, which must be less complicated and reliable.The goal is to come up with a reliable prediction model so that the hospital can use this information to treat the patients at the starting state of the disease.
2.	Idea / Solution description	The idea is to provide an interactive dashboard for visualising and predicting cardiac problems.IBM Cognos platform is used to visualize the given data.Machine learning techniques like Support Vector Machine,Decision tree,Naive Bayes, Random forest,K-Nearest Neighbour,and Neural networks are used to predict cardiac disease.To achieve greater accuracy,fusion of these algorithms is done.Exploratory Data Analysis (EDA) is a method to analyse data using advanced techniques to expose hidden structure, enhance the insight into a given dataset, identify the anomalies and build parsimonious models to test the underlying assumptions.The parameters provided in the data set help hospitals identify the patient's heart condition.An informative and creative dashboard can be created to present the data and utilize it for further medications.

3.	Novelty / Uniqueness	The prime uniquenesss of the solution is the fusion of highly efficient algorithms,that eliminates the disadvantage of every algorithm when employed individually and also provides a higher level of accuracy in the prediction.Another innovation is employed in the dashboard by providing diet and fitness related suggestions to the user based on his/her medical reports and history.In addition to it,the patient is given a list of hospitals closer to the patient's locality and severity of the disease.
4.	Social Impact / Customer Satisfaction	It helps with disease prediction at an early stage and alerts the user about his/her current health status.Heart disease can be cured by a mix of medication, lifestyle modifications, and occasionally,surgery. The system helps the user as well as the doctor to make better decisions.Complex questions related to heart diseases can be answered by extracting hidden knowledge, i.e., patterns and relationships from the heart disease database.
5.	Business Model (Revenue Model)	• Hospitals and healthcare facilities can install this interactive dashboard for heart disease prediction, allowing for speedy analysis.Predicted outcomes can be used to reduce the need for costly surgical operations by avoiding them altogether. • Among all fatal disease,heart attacks disease reconsidered as the most prevalent.Medical practitioners conduct different surveys on heart diseases and gather information of heart patients,their symposiums and diseaseprogression. • It can be also used in educational institutions, industries and all types of workplaces to monitor the employee's health conditions and thereby helping them lead a healthier life.
6.	Scalability of the Solution	• The proposed solution works efficiently in both smaller and larger datasets. • This predictive model can be used to detect diseases in other internal organs too.