

**Project Design Phase-I**  
**Proposed Solution**

Date	23 September 2022
Team ID	PNT2022TMID16827
Project Name	Project - Visualizing and Predicting Heart Diseases with an Interactive Dash Board
Maximum Marks	2 Marks

**Proposed Solution :**

S.No.	Parameter	Description
•	Problem Statement (Problem to be solved)	Heart disease can be managed effectively with a combination of lifestyle changes, medicine and, in some cases, surgery. With the right treatment, the symptoms of heart disease can be reduced and the functioning of the heart improved. The predicted results can be used to prevent and thus reduce cost for surgical treatment and other expensive. The overall objective of my work will be to predict accurately with few tests and attributes the presence of heart disease. Attributes considered form the primary basis for tests and give accurate results more or less. Many more input attributes can be taken but our goal is to predict with few attributes and faster efficiency the risk of having heart disease. Decisions are often made based on doctors'.
•	Idea / Solution description	The health care industries collect huge amounts of data that contain some hidden information, which is useful for making effective decisions. For providing appropriate results and making effective decisions on data, some advanced data mining techniques are used. In this study, a Heart Disease Prediction System (HDPS) is developed using Naives Bayes and Decision Tree algorithms 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 HDPS predicts the likelihood of patients getting heart disease. It enables significant knowledge. E.g. 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.
•	Novelty / Uniqueness	<ul style="list-style-type: none"> <li>• Provides new approach to concealed patterns in the data.</li> <li>• Helps avoid human biasness.</li> <li>• To implement Naïve Bayes Classifier that classifies the disease as per the input of the user.</li> <li>• Reduce the cost of medical tests</li> </ul>
•	Social Impact / Customer Satisfaction	<p>Clinical decisions are often made based on doctor's insight and experience rather than on the knowledge rich data hidden in the dataset. This practice leads to unwanted biases, errors and excessive medical costs which affects the quality of service provided to patients. The proposed system will integrate clinical decision support with computer-based patient records (Data Sets). This will reduce medical errors, enhance patient safety, decrease unwanted practice variation, and improve patient outcome. This suggestion is promising as data modeling and analysis tools, e.g., data mining, have the potential to generate a knowledge rich environment which can help to significantly improve the quality of clinical decisions. There are voluminous records in medical data domain and because of this, it has become necessary to use data mining techniques to help in decision support and prediction in the field of healthcare. Therefore, medical data mining contributes to business intelligence which is useful for diagnosing of disease</p>
•	Business Model (Revenue Model)	<p>Medical diagnosis is considered as a significant yet intricate task that needs to be carried out precisely and efficiently. The automation of the same would be highly beneficial. Clinical decisions are often made based on doctor's intuition and experience rather than on the knowledge rich data hidden in the database. This practice leads to unwanted biases, errors and excessive medical costs which affects the quality of service provided to patients. Data mining have the potential to generate a knowledge-</p>

		rich environment which can help to significantly improve the quality of clinical decisions.
•	Scalability of the Solution	<p>In this system we are implementing effective heart attack prediction system using Naïve Bayes algorithm. We can give the input as in CSV file or manual entry to the system. After taking input the algorithms apply on that input that is Naïve Bayes. After accessing data set the operation is performed and effective heart attack level is produced. The proposed system will add some more parameters significant to heart attack with their weight, age and the priority levels are by consulting expertise doctors and the medical experts. The heart attack prediction system designed to help the identify different risk levels of heart attack like normal, low or high and also giving the prescription details with related to the predicted result.</p>