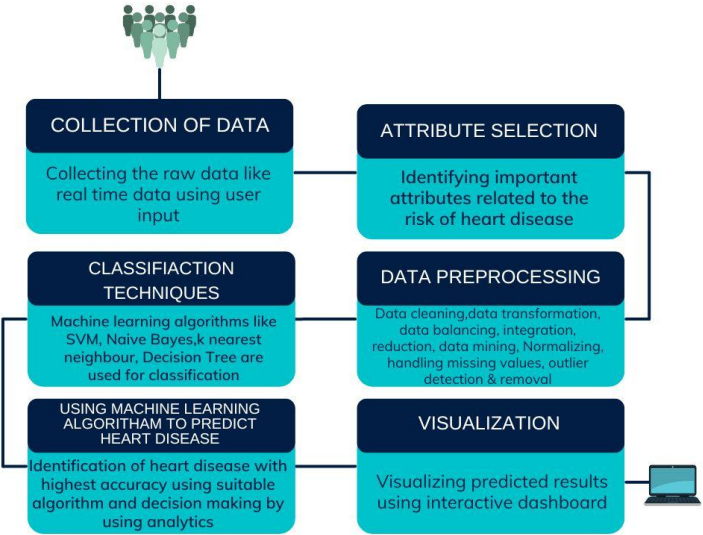


PROJECT DESIGN PHASE - I

PROPOSED SOLUTION

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| MENTOR | Dr. R C SUGANTHE |
| PROJECT NAME | Visualizing and Predicting Heart Diseases with an Interactive Dashboard |

| S.No | Parameter | Description |
|------|---------------------------------------|--|
| 1. | Problem Statement | Heart disease is the leading cause of death for men, women, and people of most racial and ethnic groups in the World. The major challenge in heart disease is its detection. There are instruments available which can predict heart disease but either they are expensive or are not efficient to calculate the chance of heart disease in humans. Early detection of cardiac diseases can decrease the mortality rate and overall complications. |
| 2 | Idea / Solution Description | The main idea of our project is to develop an application with the help of classification and regression techniques in IBM Cognos Analytics to predict disease. This can be achieved by analyzing various factors. The diagnosis of heart disease is usually based on signs, symptoms and physical examination of the patient. |
| 3 | Novelty/Uniqueness | The proposed system is unique because it gets inputs directly from the user for parameters such as age, BP level, cholesterol level, smoker history, heart rate, etc and it requires minimum effort to predict heart disease. |
| 4 | Social Impact / Customer Satisfaction | The proposed system has an impact on people who have earlier symptoms for heart problems. Customer can use this application to predict heart diseases. This system will predict accurately. |

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|----|--------------------------------|---|
| 5 | Business Model (Revenue Model) |  <pre> graph TD A[COLLECTION OF DATA Collecting the raw data like real time data using user input] --> B[ATTRIBUTE SELECTION Identifying important attributes related to the risk of heart disease] B --> C[DATA PREPROCESSING Data cleaning, data transformation, data balancing, integration, reduction, data mining, Normalizing, handling missing values, outlier detection & removal] C --> D[CLASSIFICATION TECHNIQUES Machine learning algorithms like SVM, Naive Bayes, k nearest neighbour, Decision Tree are used for classification] D --> E[USING MACHINE LEARNING ALGORITHM TO PREDICT HEART DISEASE Identification of heart disease with highest accuracy using suitable algorithm and decision making by using analytics] E --> F[VISUALIZATION Visualizing predicted results using interactive dashboard] F --> G[Laptop Icon] </pre> <p>The flowchart illustrates the process of a heart disease prediction system. It begins with 'COLLECTION OF DATA' (Collecting the raw data like real time data using user input), which leads to 'ATTRIBUTE SELECTION' (Identifying important attributes related to the risk of heart disease). This is followed by 'DATA PREPROCESSING' (Data cleaning, data transformation, data balancing, integration, reduction, data mining, Normalizing, handling missing values, outlier detection & removal). The next step is 'CLASSIFICATION TECHNIQUES' (Machine learning algorithms like SVM, Naive Bayes, k nearest neighbour, Decision Tree are used for classification), which leads to 'USING MACHINE LEARNING ALGORITHM TO PREDICT HEART DISEASE' (Identification of heart disease with highest accuracy using suitable algorithm and decision making by using analytics). Finally, the process ends with 'VISUALIZATION' (Visualizing predicted results using interactive dashboard), represented by a laptop icon.</p> |
| 6. | Scalability of the Solution | <p>The system will be faster and reduce the cost and time complexity of doctors. It can reduce the risk of critical factors.</p> |