Project group name: The Prediction Wizards

Group Member Names: Nikitha Rajendran, Benedict Antonio Mervyn, Venkata Dheeraj Bhogi

Project Title: Heart Attack Prediction

Project summary: Cardiovascular diseases (CVDs) remain the world's leading cause of mortality, claiming approximately 17.9 million lives annually according to the World Health Organization. Heart attacks and strokes account for over 80% of these deaths, with a significant portion occurring in individuals under the age of 70. Early detection and intervention for patients at risk of a heart attack can be life-saving. This project aims to develop a predictive machine learning model to classify a patient's risk of experiencing a heart attack based on a range of clinical and demographic factors.

Our dataset, composed of 1,319 samples, includes nine key variables: age, gender, heart rate, systolic blood pressure, diastolic blood pressure, blood sugar levels, CK-MB (creatine kinase-MB), and Test-Troponin levels. These eight features serve as input variables, while the output variable indicates the presence or absence of a heart attack. By utilizing these diverse characteristics, we aim to construct a robust classification model to identify high-risk individuals with accuracy. To achieve this, we will employ multiple models such as random forest, decision tree, logistic regression and more enabling us to compare the performance and classification accuracy of each model. This comparison will allow us to identify the most effective approach, thereby equipping medical practitioners to implement timely preventive measures and develop personalized treatment plans for improved patient outcomes.

Link to dataset: https://www.kaggle.com/datasets/thxogg/heart-attack-classification-training-dataset