ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

<u>TITLE:</u> Predicting Cardiovascular Risk: A Machine Learning Framework for Heart Disease

Team Number: **Section 2B**

Team Members:

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<u>PROBLEM STATEMENT:</u>

Heart disease is a primary reason for death globally, with numerous instances going undetected until they advance significantly. This project seeks to create an online tool using machine learning to forecast the probability of heart disease using health information provided by the user. Through the use of different predictive models, the tool aims to aid in detecting and intervening earlier, which could lead to a decrease in severe outcomes and a better overall outcome for patients.

<u>ALGORITHM</u>:

1. Identifying key risk factors that contribute to cardiovascular disease, such as hypertension, hyperlipidaemia, smoking habits, and family medical history.

2. Decision Making- Using decision trees and predefined clinical protocols to predict the likelihood of cardiovascular disease and its severity level.

3. Respond Execution — Providing real-time guidance on preventive measures, access to medical services, and regular updates on disease progression and treatment outcomes to mitigate cardiovascular risk.

<u>PROJECT IMPLEMENTATION OVERVIEW:</u>

- This project leverages machine learning to create a valuable tool for predicting cardiovascular risk, enabling timely interventions and better patient outcomes. The Heart Disease Detection Model will forecast a person's risk level (High, Medium, Low, or No Risk) with a probability score (0-1) and provide tailored suggestions for future actions based on the predicted risk level. Goal is to improved patient outcomes through personalized risk assessments and to interface user-friendly for easy data input and result interpretation.