1. Executive Summary:

This project aims to predict the likelihood of a heart attack using healthcare data. By leveraging machine learning techniques, this predictive model aims to assist healthcare professionals in identifying individuals at risk of experiencing a heart attack. The model will consider factors such as medical history, lifestyle habits, and demographic information to provide accurate predictions.

2. Problem Statement:

- Problem Statement: Predicting heart attacks is crucial for early intervention and prevention, yet it remains challenging due to the complexity of healthcare data.

- Objective: Develop a predictive model to estimate the probability of a heart attack based on patient data.

- Scope: This project will utilize a dataset containing information on patients' medical history, lifestyle factors, and demographic details. Machine learning algorithms will be employed to build and evaluate the predictive model, aiming to provide actionable insights for healthcare professionals.

3. Source:

  Health care: Heart attack possibility (kaggle.com)

4. Methodology:

- Data Collection: Utilize a dataset from a reputable source containing relevant features for heart attack prediction.

- Data Preparation: Clean and pre-process the data, addressing missing values and standardizing formats.

- Analysis Techniques: Employ classification algorithms such as logistic regression, decision trees, and ensemble methods to build the predictive model.

- Tools: Utilize Python programming language along with libraries like pandas, sci-kit-learn, and Tensor Flow for data manipulation, modelling, and evaluation.

5. Expected Outcomes:

The project aims to deliver a robust predictive model capable of accurately assessing the likelihood of a heart attack based on individual patient profiles. Additionally, the model is expected to provide

insights into the significant factors contributing to heart attack risk, enabling proactive healthcare interventions.

6. Risks and Challenges:

- Data Quality: Ensuring the accuracy and completeness of the dataset is essential to the reliability of the predictive model.

- Model Interpretability: Striving for a balance between model complexity and interpretability to facilitate understanding and trust among healthcare professionals.

- Generalization and Robustness: Addressing potential issues of overfitting or underfitting to ensure the model's performance on unseen data and its resilience to various scenarios.

7. Conclusion:

In conclusion, this project endeavours to develop a predictive model for assessing the likelihood of a heart attack, leveraging machine learning techniques and healthcare data analysis. By providing actionable insights, this model has the potential to assist healthcare professionals in early detection and prevention efforts, ultimately contributing to improved patient outcomes and healthcare management.