Heart Attack Analysis & Prediction

Heart attack predictionWhat is Heart Attack ?
 A heart attack happens when the flow of oxygen-rich blood in one or more of the coronary arteries, which supply the heart muscle, suddenly becomes blocked, and a section of heart muscle can't get enough oxygen. The blockage is usually caused when a plaque ruptures. If blood flow isn't restored quickly, either by a medicine that dissolves the blockage or a catheter placed within the artery that physically opens the blockage, the section of heart muscle begins to die.

Description
This project object is to detect whether patients have heart disease or not by given several features from patients. The motivation of this project is to save human resources in medical centers and improve accuracy of diagnosis. In our project we use different methods to detect heart disease such as Logistic Regression, SVM, Naïve Bayes, Random Forest and Artificial neural network. And among all these algorithms Random Forest gives us the best accuracy of 91.8%

Research Objectives
1- Is to detect whether patients have heart disease or not with respect to various features such as id, gender, age, hypertension, heart disease, ever married, avg glucose level, bmi, smoking status, stroke.
2- To check the heart disease use different methods like as Logistic Regression, SVM, Naïve Bayes, Random Forest and Artificial neural network .

Data
I propose to work on the heart attack prediction dataset from Kaggle. This dataset and the relative problem is of health and the likelihood of patients to suffer heart attack. The context of the data is that given certain variables, is one able to build a model that will correctly predict if a patient will suffer a heart attack.
And the dataset contains 10 features and 5111 rows
URL: https://www.kaggle.com/fedesoriano/stroke-prediction-dataset
2 features have been excluded which are Work type and Residence type.

Problem Statment
What is the problem you want to solve?
Being able to predict the likelihood of Heart attacks for patients.

Who is your client and why do they care about this problem?
Clients would include patients, hospitals, doctors, family members, care givers, health care providers etc.

Tools
✓ Jupyter Notebook
✓ Python
✓ NumPy
✓ Pandas
✓ Matplotlib
✓ Seaborn