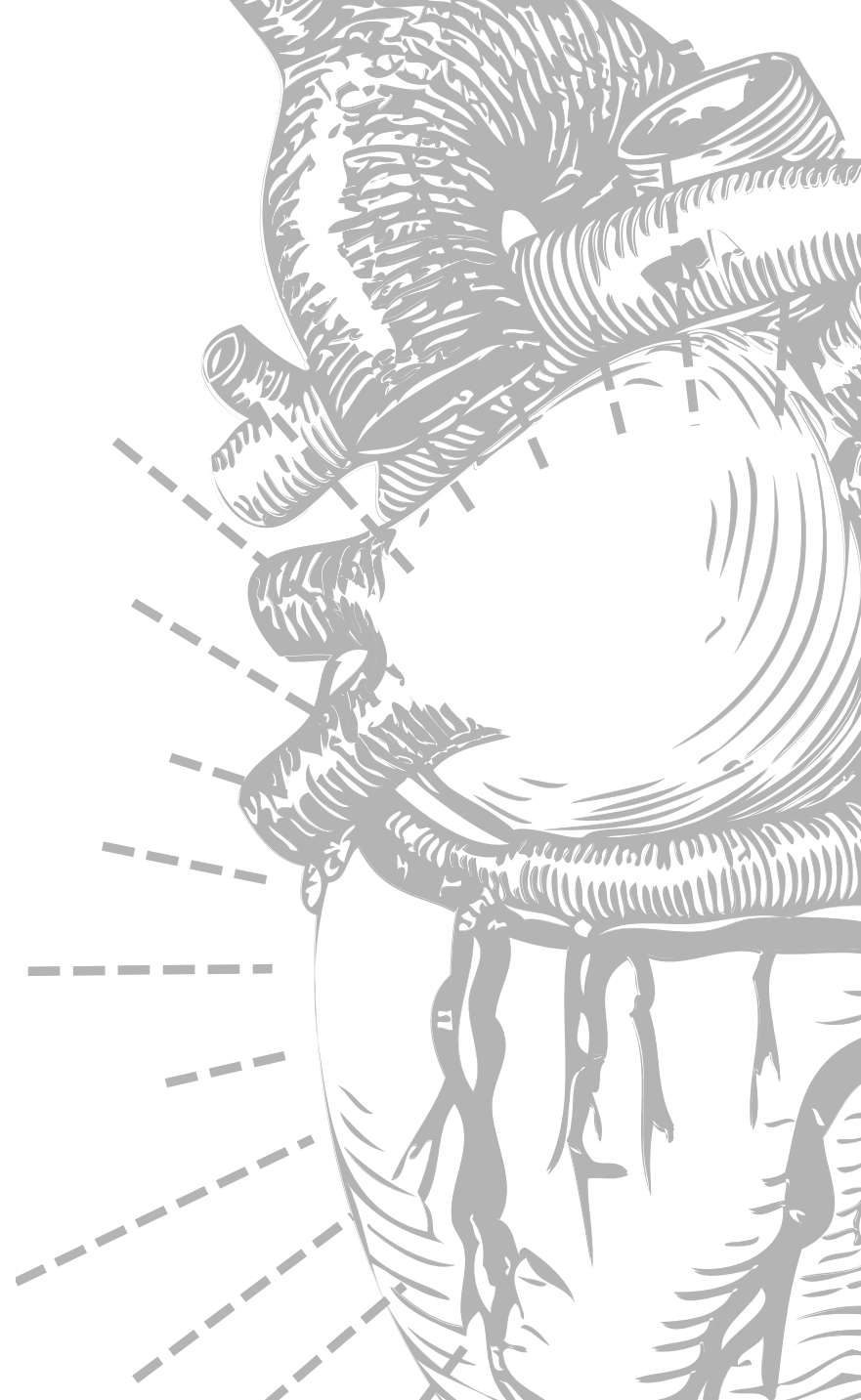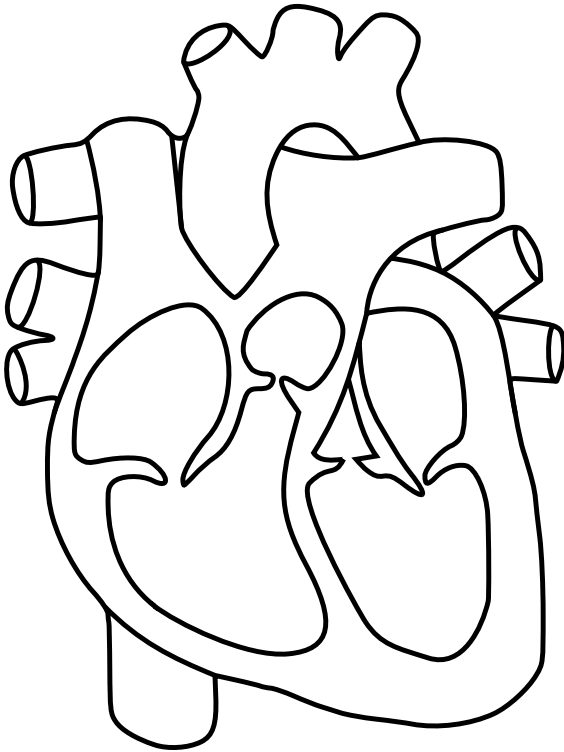# CARDIOVASCULAR DISEASE

Written by

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Mukhtar Al Bin Hamad
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WHAT WE'LL DISCUSS TODAY

Cardiovascular Disease Guide

- Introduction
- Preprocessing
- Visualisation
- Models
- Important Features
- Demo
- Conclusions

INTRODUCTION

**Cardiovascular diseases are conditions that affect the structures or function of your heart,**

Sush as :

- Abnormal heart rhythms, or arrhythmias
- Aorta disease and Marfan syndrome
- Congenital heart disease
- Coronary artery disease (narrowing of the arteries)
- Deep vein thrombosis and pulmonary embolism
- Heart attack
- Heart failure
- Heart muscle disease (cardiomyopathy)
- Heart valve disease
- Pericardial disease
- Peripheral vascular disease
- Rheumatic heart disease
- Stroke
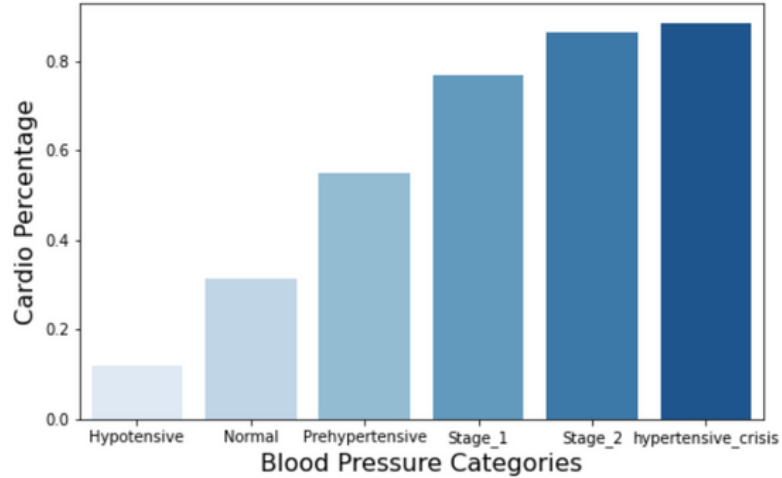- Vascular disease (blood vessel disease)

PRE PROCESSING

- **Calculated the Age by years**

- **Calculated the BMI by dividing the weight in kilograms by the height in meters squared**

- **Removed the un-useful data within the data analysis process which is the ID column**
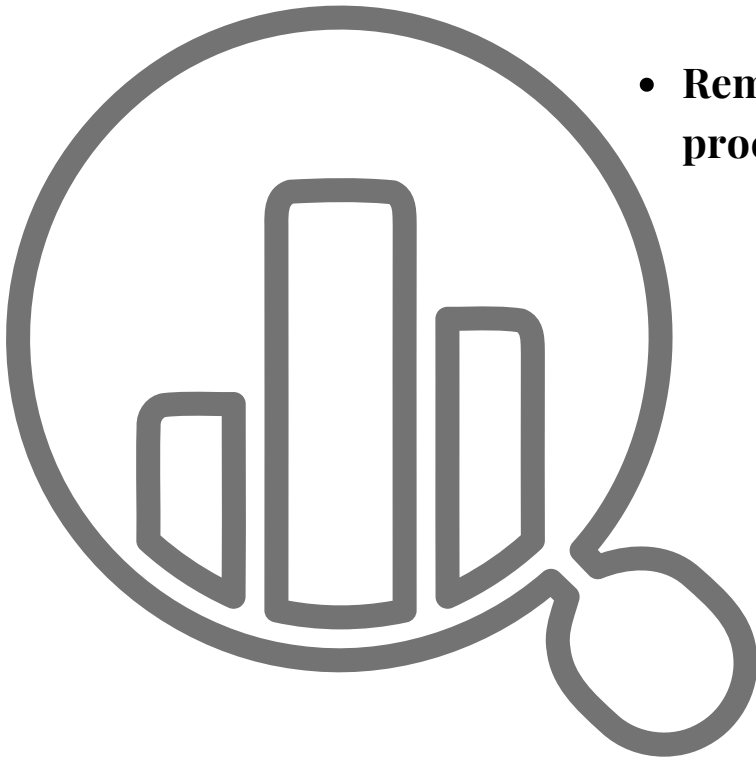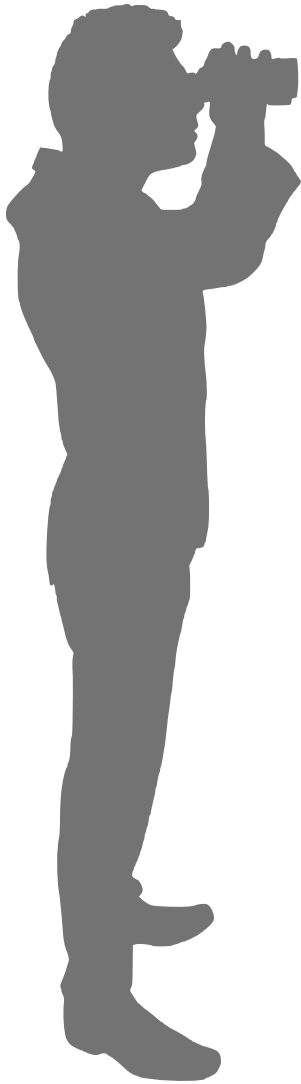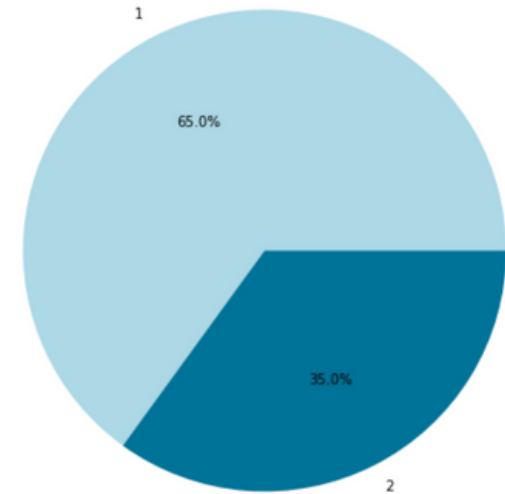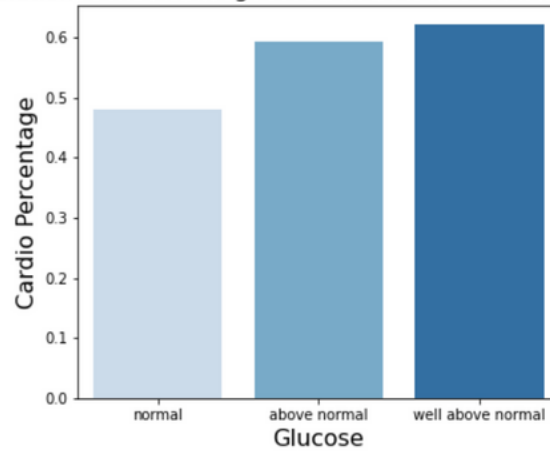
VISUALISATION THE DATA

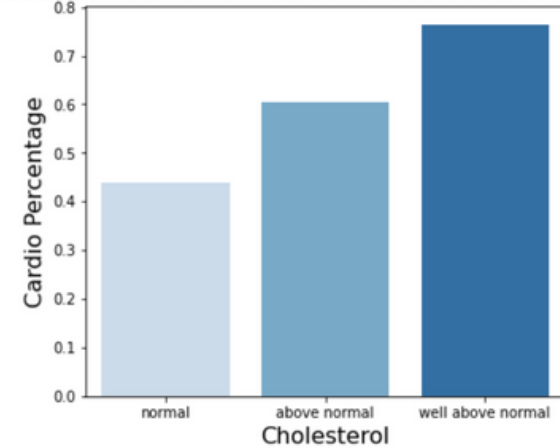Relation between the blood pressure and cardiovascular diseases

Distribution of Genders

Relation between the glucose and cardiovascular diseases

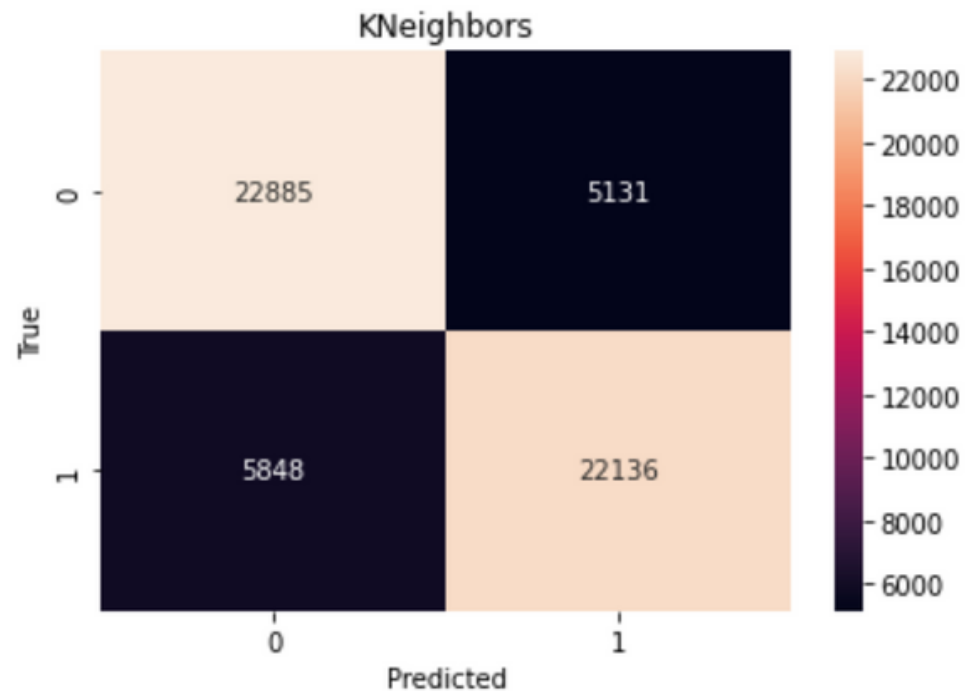Relation between the cholesterol and cardiovascular diseases

MODELS

	Recall	Accuracy	Precision
Knn	0.79	0.80	0.81
D.T.	0.95	0.97	0.99
Logistic	0.67	0.72	0.74
R.F.	0.96	0.97	0.98
XGB	0.68	0.73	0.76
LGBM	0.70	0.74	0.76

KNEIGHBORS CLASSIFIER

Def : Classify point based on k-nearest neighbors based on their distances
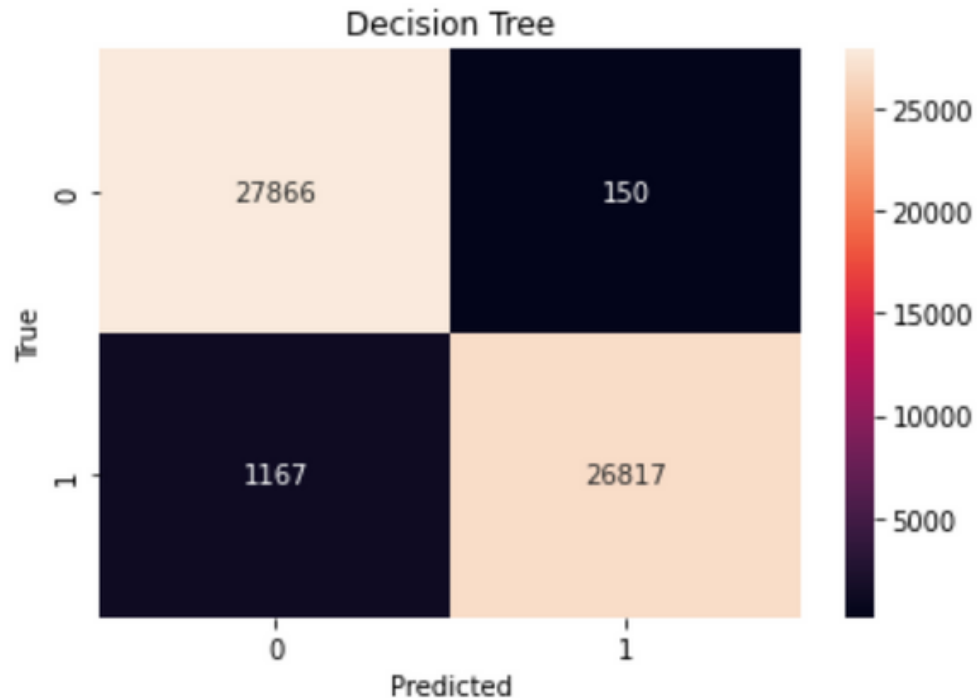
Recall : 0.79

KNeighbors

DECISION TREE

Def : Decision tree builds classification or regression models in the form of a tree structure.
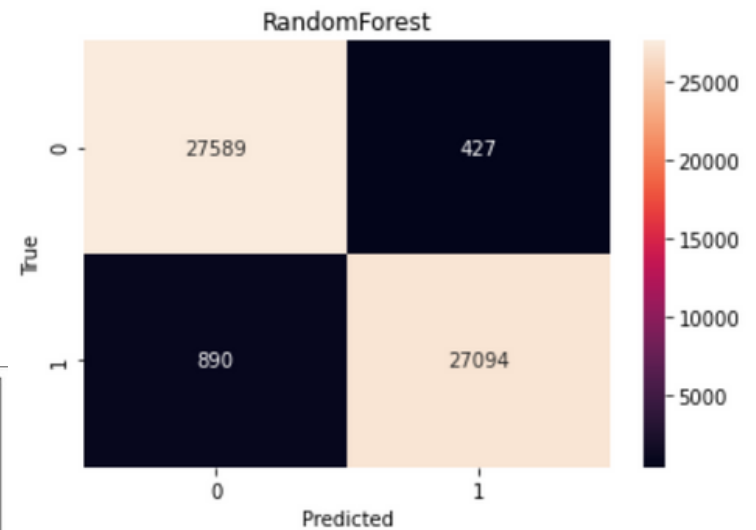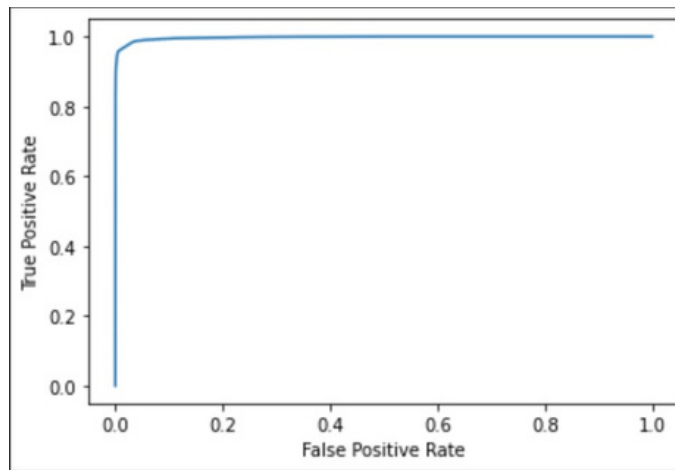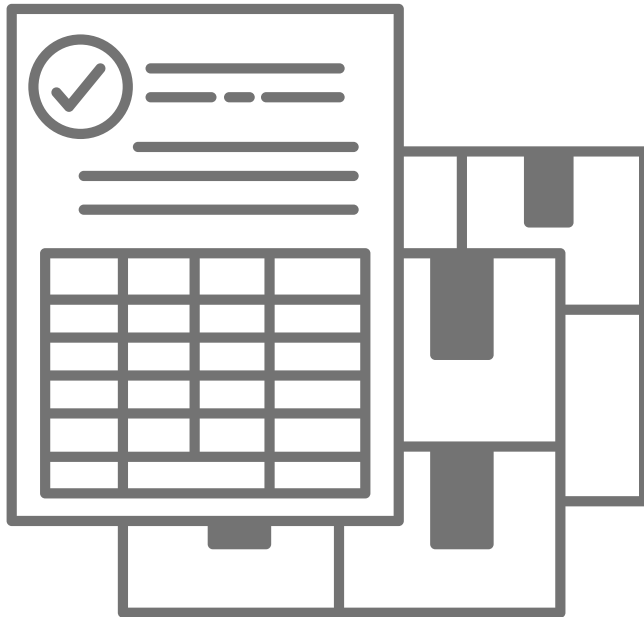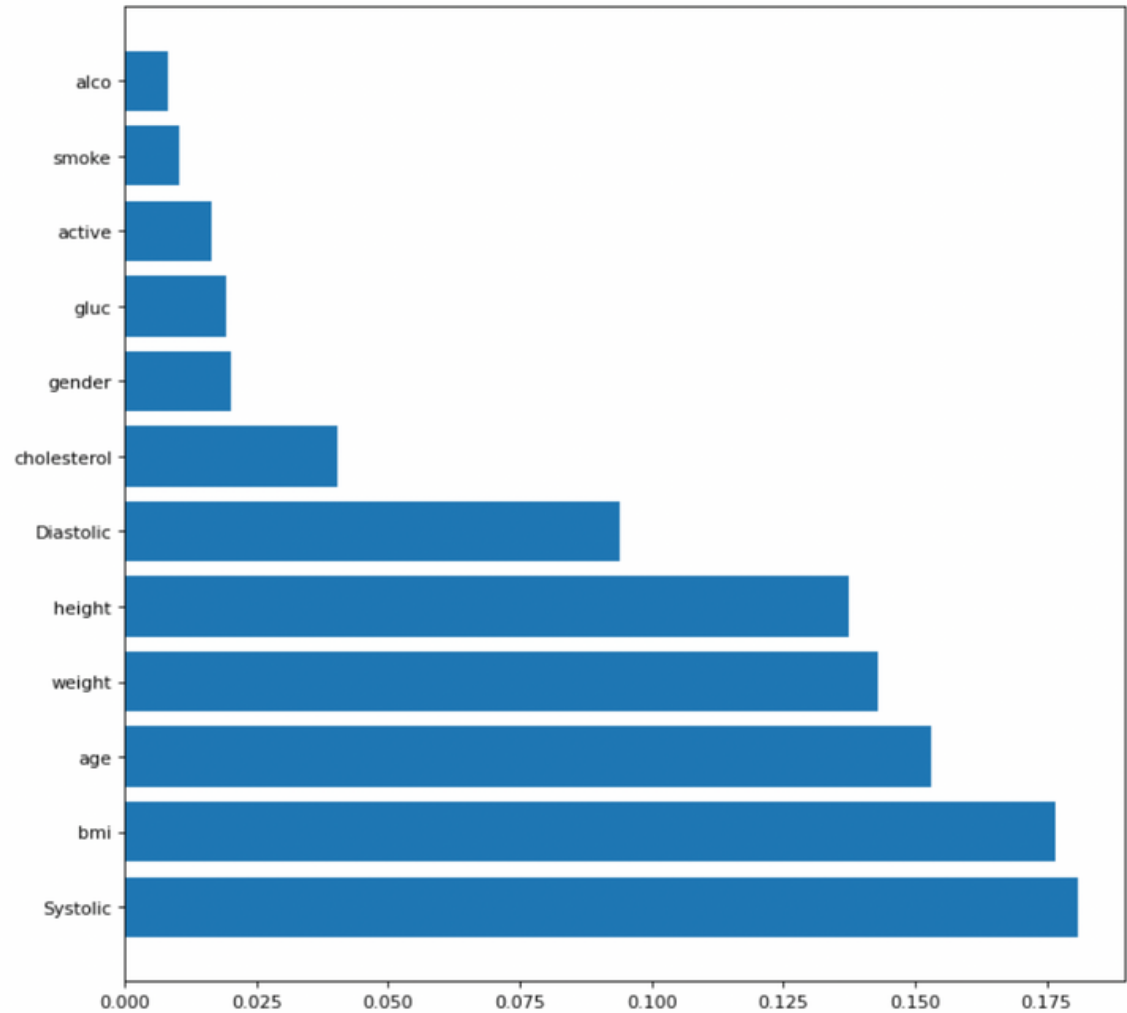Recall : 0.95

RANDOM FOREST

Def : Randomly creates and merges multiple decision trees into one "forest" .
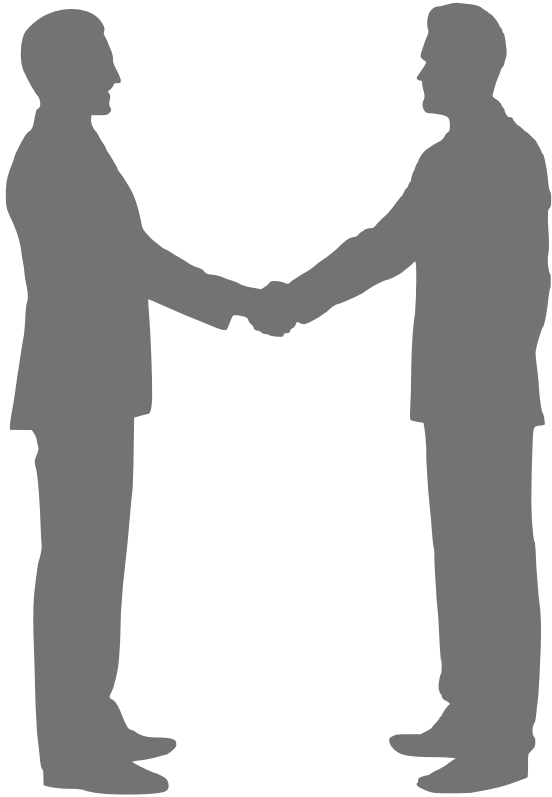Recall : 0.96

IMPORTANT FEATURES

CONCLUSIONS

PREDICTIONS CAN STRONGLY AID IN THE MEDICAL FIELD FOR EARLY ASSESSMENT AND INTERVENTIONS TO DELIVER THE PROPER CARE POSSIBLE FOR PATIENTS.

BY IMPROVING THEIR LIFESTYLE AND ACTIVITY, EATING HABITS, DIET CONTROL, WEIGHT CONTROL, REGULAR CHECKUPS, AND EARLY DETECTION AND PREDICTION OF CVD CASES CAN BE CONTROLLED AND WELL-TREATED.

IT IS HEALTH THAT IS REAL WEALTH AND NOT PIECES OF GOLD.

MAHATMA GANDHI

THANK YOU