

Diagnosing Cardiovascular Disease

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Cardiovascular diseases have always been one of the most common causes of death globally. According to the World Health Organization (An estimated 17.9 million people died from CVDs in 2019, representing 32% of all global deaths.).

Project Goal

Diagnosing the cardiovascular disease based on several features and symptoms given by the client I will use the features to determine if the disease exists or not in order to be able to warn the client and notify him either way.



Project Dataset

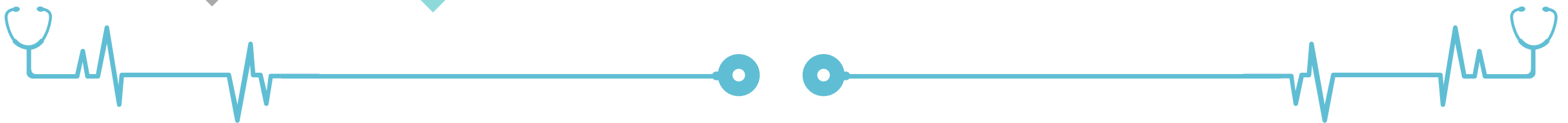
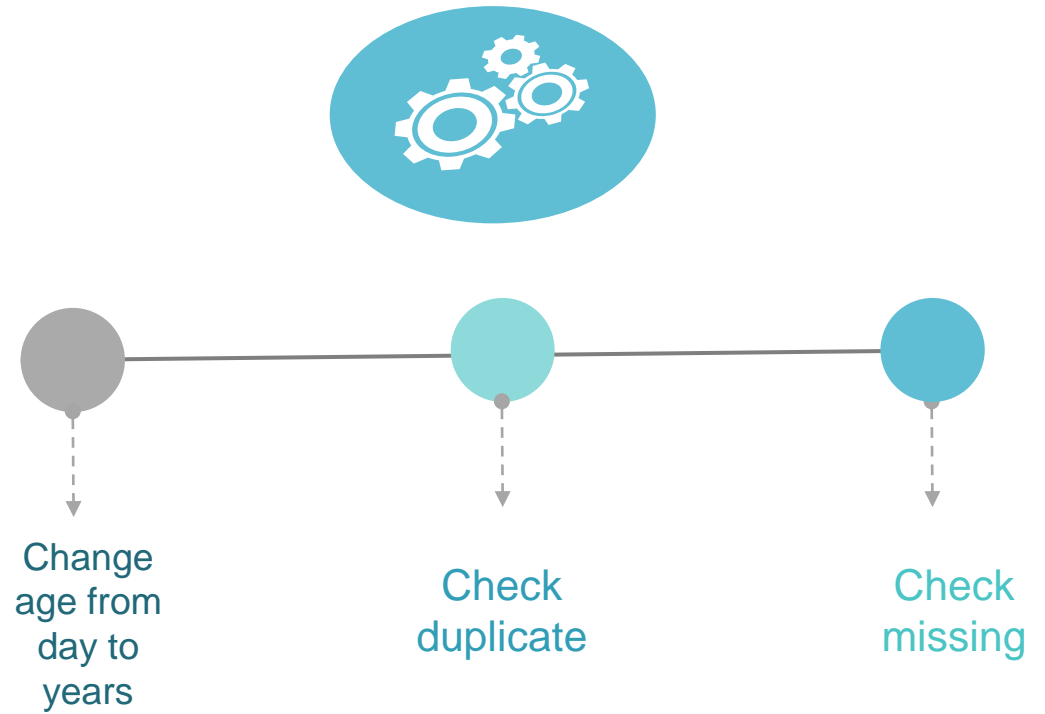
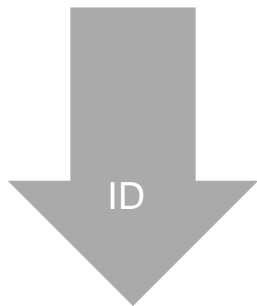
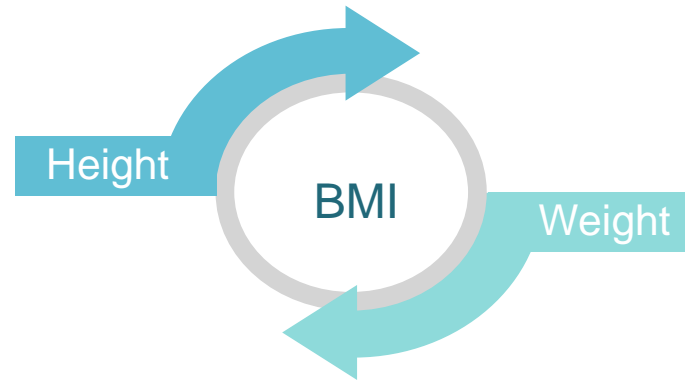
Feature	Type of Feature	name for Feature in data	Data type
ID	Objective	Id	int
Age	Objective	age	int (days)
Height	Objective	height	int (cm)
Weight	Objective	weight	float (kg)
Gender	Objective	gender	categorical
Systolic blood pressure	Examination	ap_hi	int
Diastolic blood pressure	Examination	ap_lo	int
Cholesterol	Examination	cholesterol	1: normal, 2: above normal, 3: well above normal
Glucose	Examination	gluc	1: normal, 2: above normal, 3: well above normal
Smoking	Subjective	smoke	binary
Alcohol intake	Subjective	alco	binary
Physical activity	Subjective	active	binary
Presence or absence of cardiovascular disease	Target	cardio	binary

-The dataset from medical examination which were collected at the moment of medical examination.

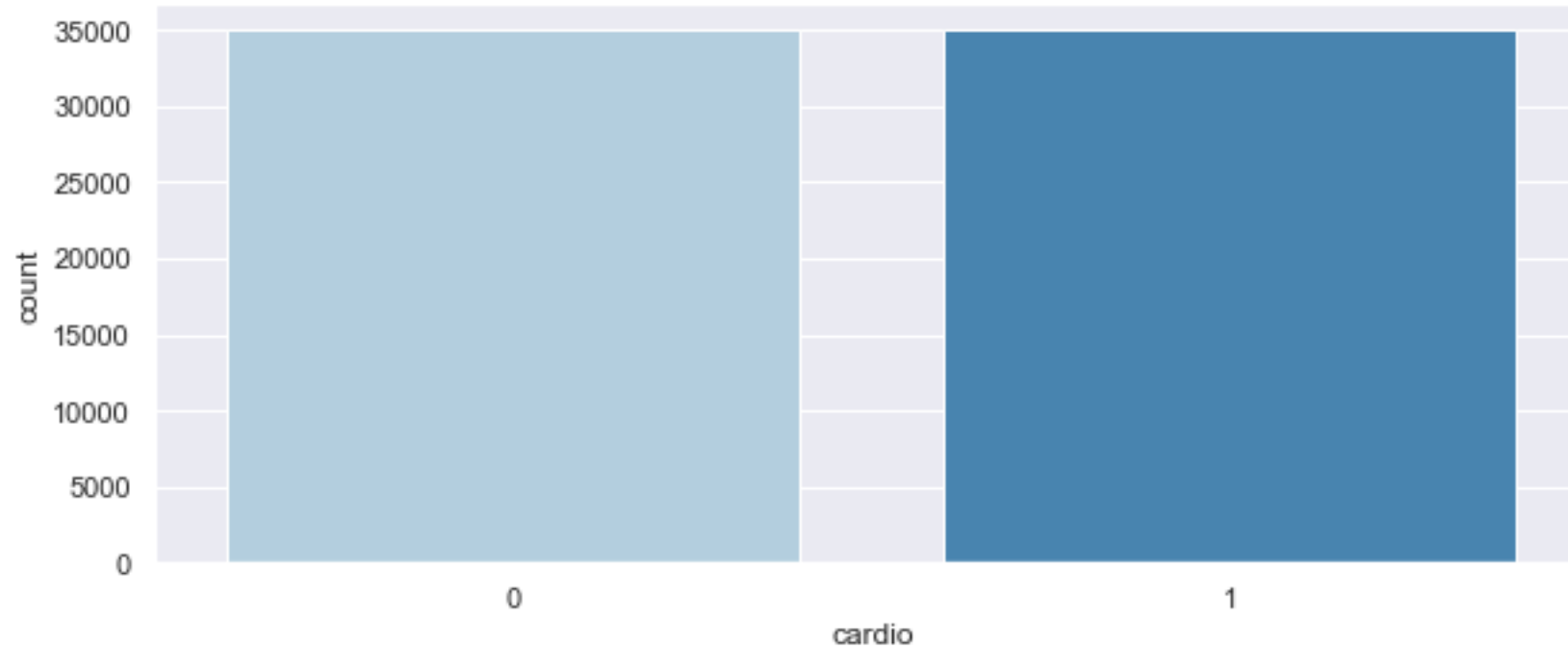
-Dataset consists of 70000 records of patients data, 11 features + target [link](#)



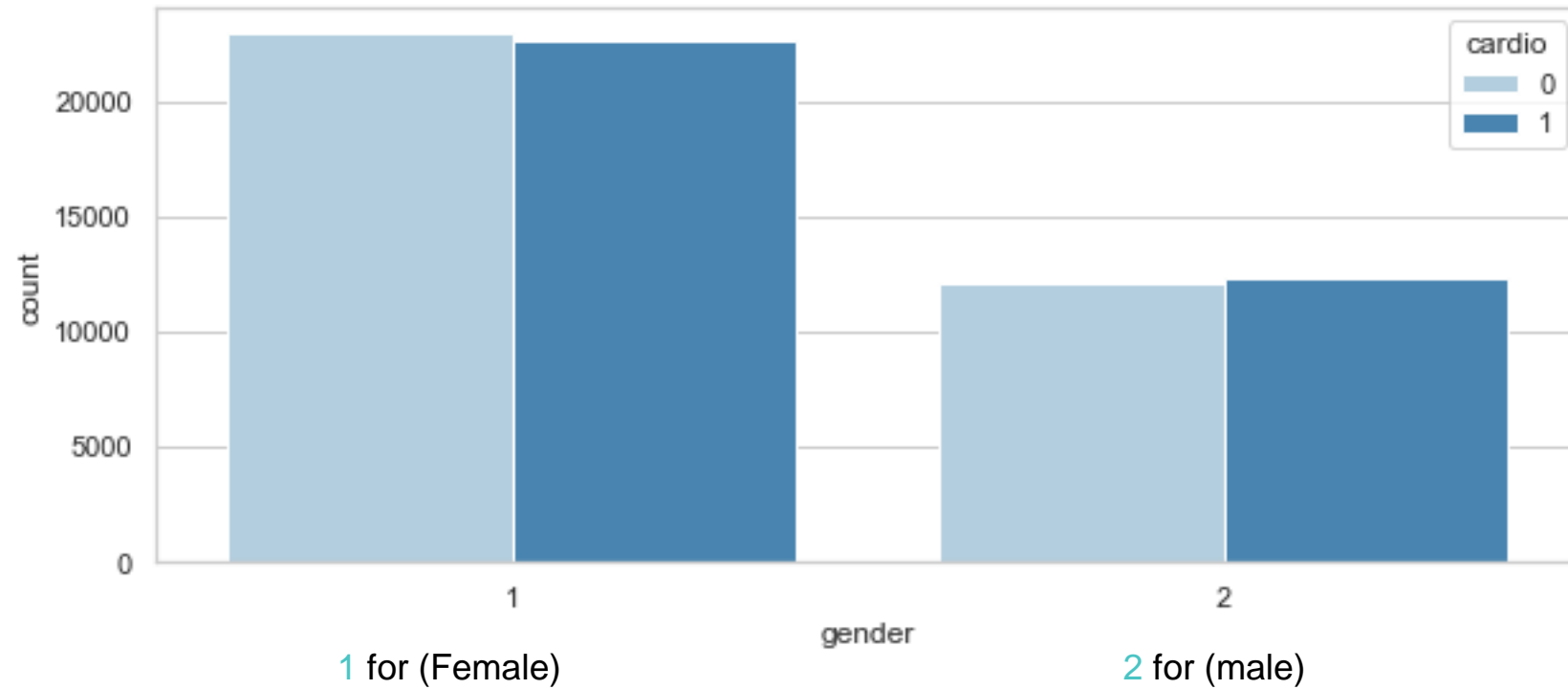
Data Cleaning

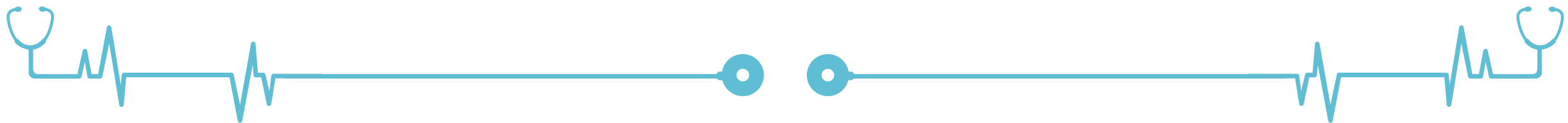
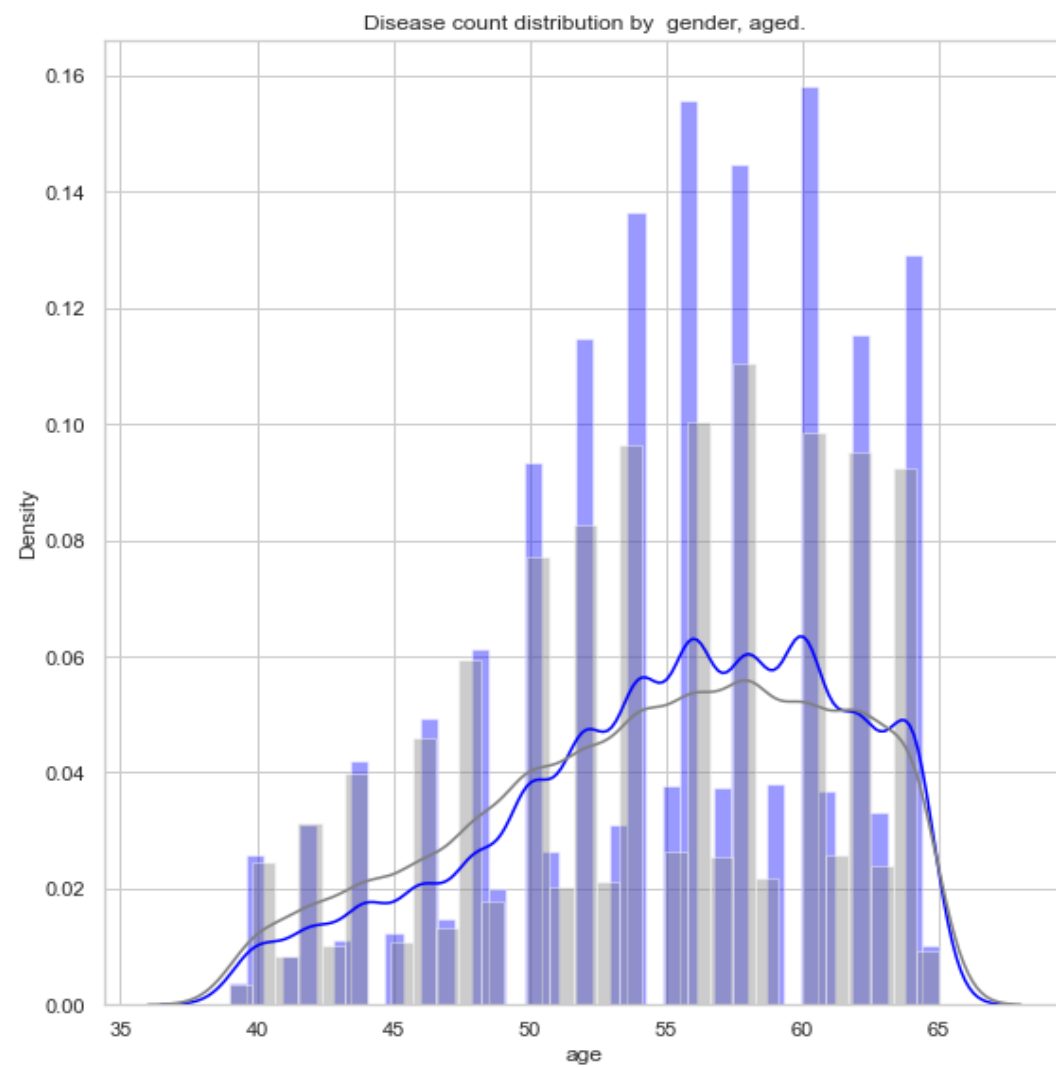
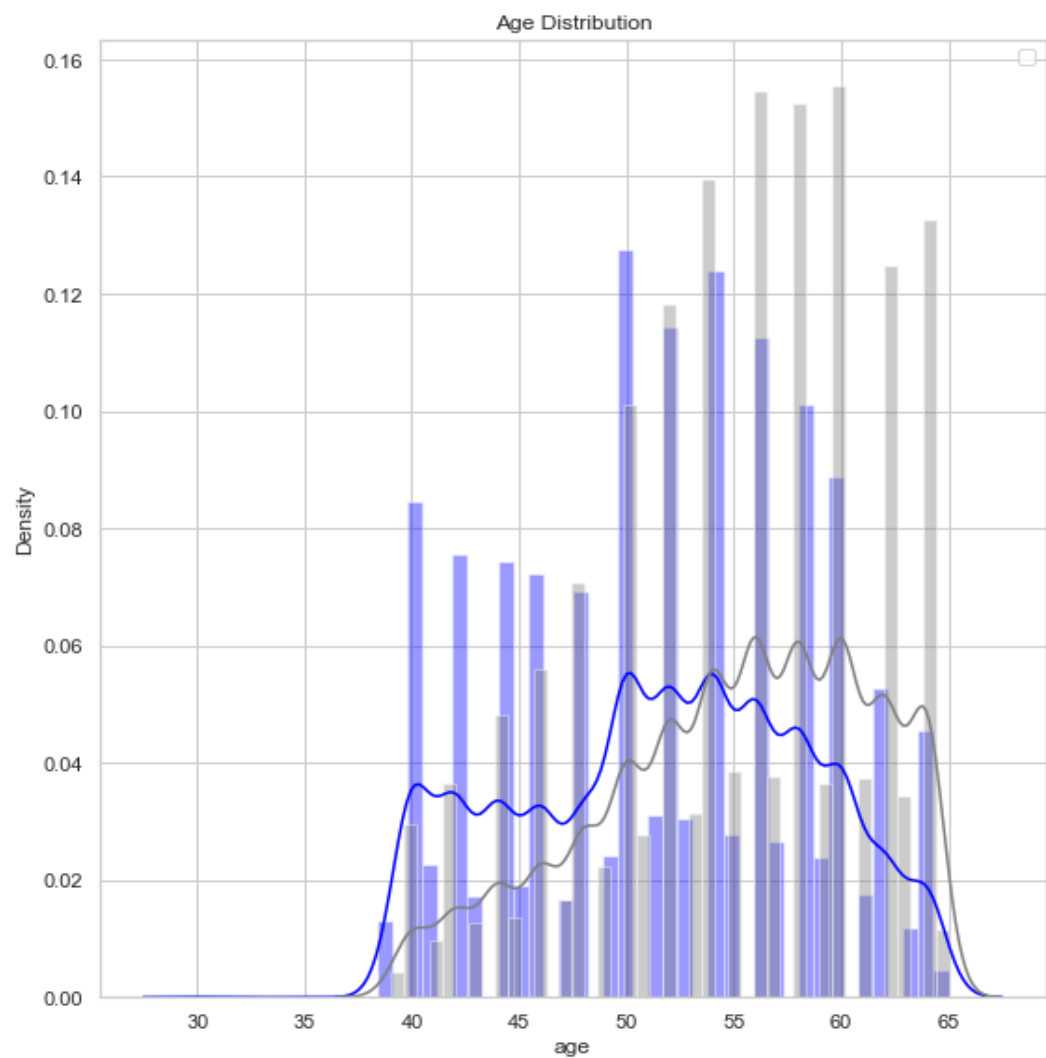


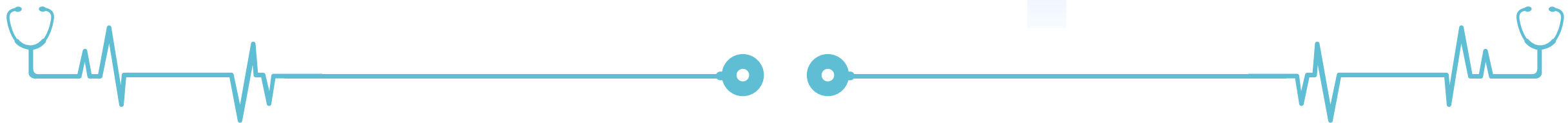
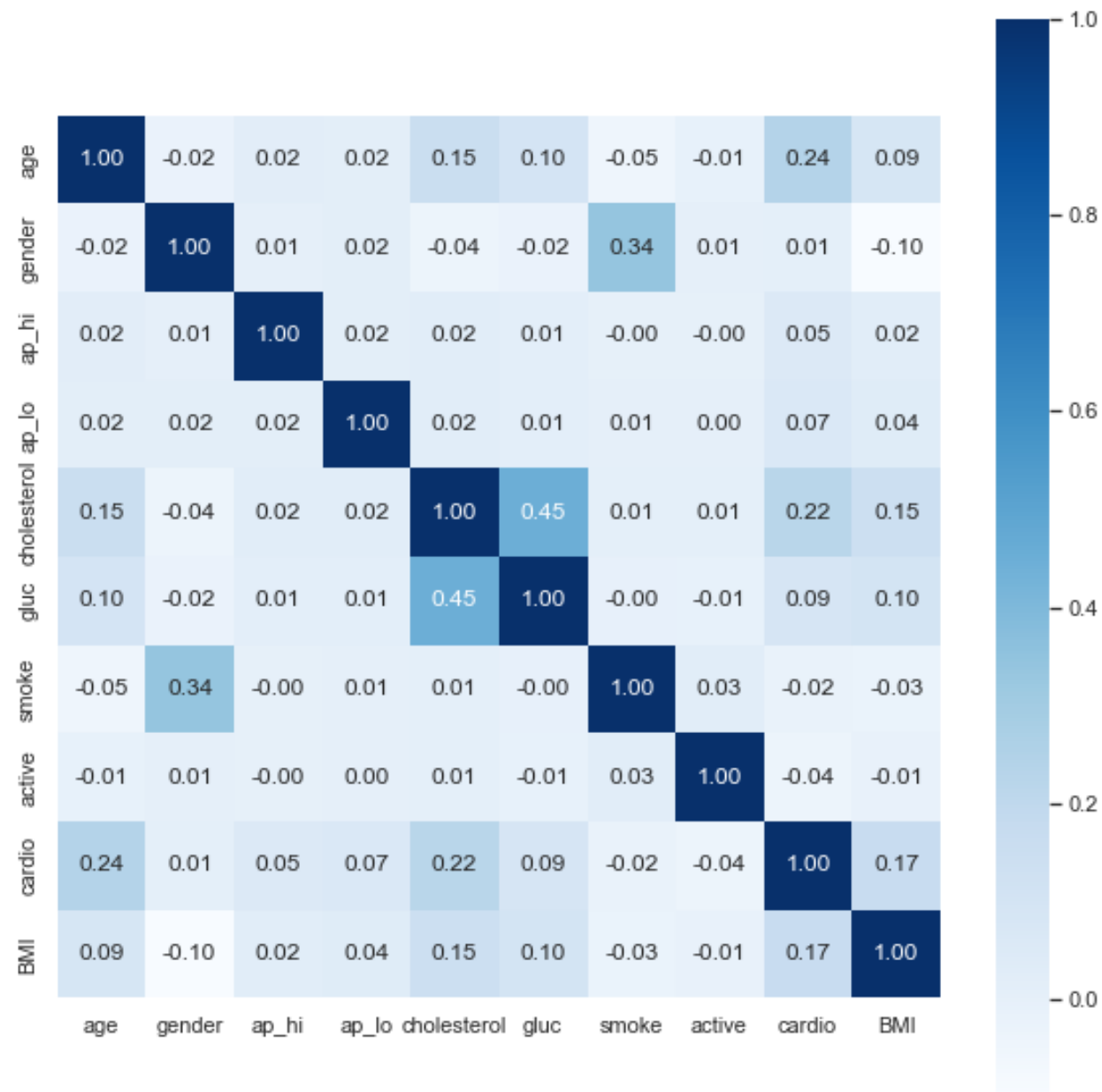
Cardiovascular Disease Cases count



Cardiovascular Disease Cases count







MODELLING



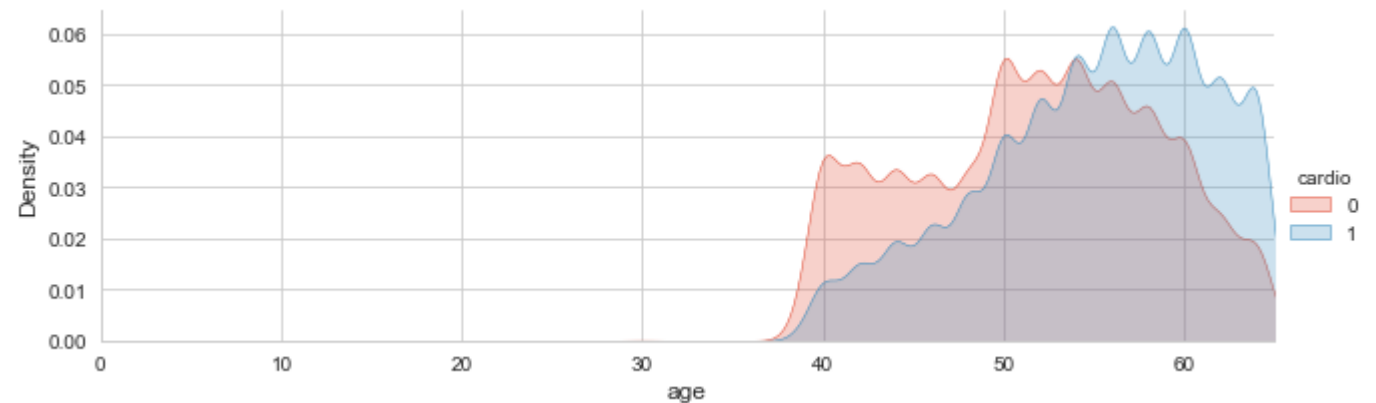
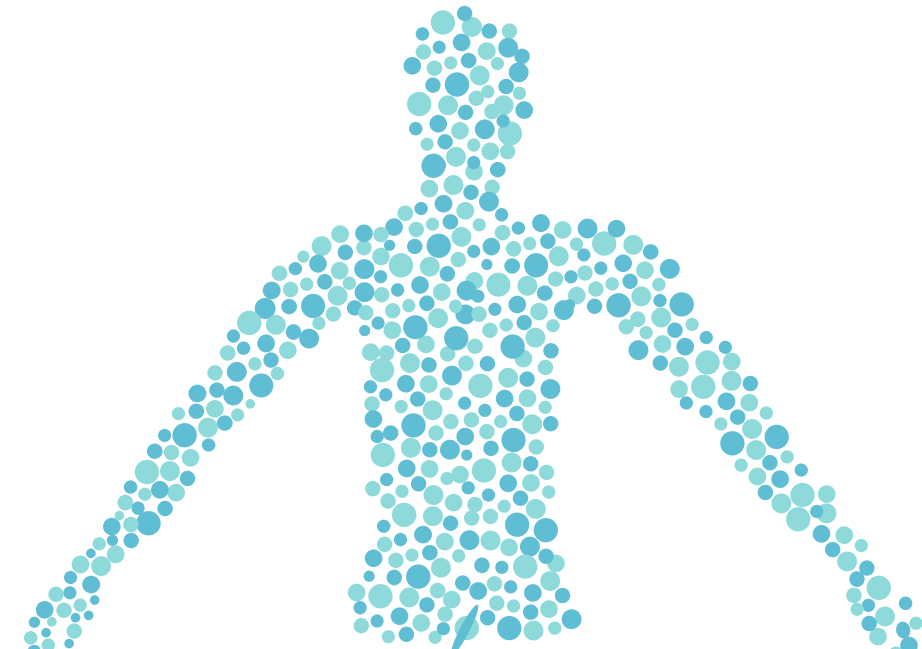


Model	Accuracy
Decision Tree	64%
Bagging	68%
Random Forest	72%
Logistic Regression	72%
XGBoost	74%



CONCLUSION

- The best model was **XGBoost**
- Knowing the features that cause the disease helps reduce the injury by treating these features.
- In the future, all age groups should be added because of the recent spread of Cardiovascular Disease in age groups under 39.



An illustration featuring two grey hands, one at the top left and one at the bottom right, reaching towards each other. In the center, there is a light blue heart with a pulse line passing through it. The text "Thank You" is written in a teal color across the middle of the heart.

Thank You