The dataset includes:

- ***Target variable***: Indicates the presence or absence of heart disease.
- ***Features*:** Patient-related factors, such as age, blood pressure, cholesterol, and other clinical measurements.

Common Factors in Heart Disease Datasets

Factor	***Description***	***Significance***
Age	Patient's age in years.	Older age increases the risk of heart disease.
Sex	Gender of the patient (e.g., 1 = male, 0 = female).	Males tend to have a higher risk of heart disease than pre-menopausal females.
Chest Pain Type	Type of chest pain experienced (e.g., typical angina, atypical angina, non-anginal pain).	Specific chest pain types (e.g., typical angina) are strong indicators of heart-related issues.
Resting Blood Pressure	Resting blood pressure in mmHg.	High blood pressure is a risk factor for heart disease.
Cholesterol Level	Serum cholesterol in mg/dL.	Elevated cholesterol is associated with plaque buildup in arteries, leading to heart disease.
Fasting Blood Sugar	Blood sugar levels after fasting (>120 mg/dL is significant).	High fasting blood sugar can indicate diabetes, which is a risk factor for heart disease.
Resting ECG Results	Electrocardiogram results (e.g., normal, abnormal, showing ST-T wave abnormality).	Abnormal ECG readings can indicate previous heart attacks or stress on the heart.

Max Heart Rate	Maximum heart rate achieved during physical stress.	Lower max heart rates may suggest poor heart function or blockage in arteries.
Exercise-Induced Angina	Whether the patient experiences angina during exercise.	Indicates the heart's ability to handle physical stress; angina during exercise is a strong predictor.
ST Depression	Change in the ST segment of an ECG after exercise.	ST depression suggests reduced blood flow to the heart muscle during stress.
Slope of ST Segment	Slope of the ST segment during peak exercise.	A flat or downsloping ST segment is associated with ischemia (reduced blood flow).
Number of Major Vessels	Number of blood vessels with significant narrowing (from fluoroscopy).	Indicates the severity of arterial blockage; more blocked vessels increase risk.
Thalassemia	A blood disorder variable (e.g., normal, fixed defect, or reversible defect in the heart).	A fixed or reversible defect can indicate heart issues such as reduced oxygen supply to the heart.

How These Factors Predict Heart Disease

Each feature provides information about the patient's cardiovascular health. For example:

- ***Cholesterol and blood pressure*:** High values indicate potential blockages in blood vessels.
- ***Exercise-induced angina*:** Shows whether the heart struggles to pump blood under physical stress.
- ***ST depression***: Suggests areas of the heart muscle that may not receive enough oxygen.

Example Analysis

Patient A (Input Data):

- Age: 55 years
- Cholesterol: 250 mg/dL
- Chest Pain Type: Atypical Angina
- ST Depression: 2.5
- Number of Major Vessels: 2

Model Prediction:

The model might classify Patient A as "high risk" based on:

- High cholesterol levels.
- Abnormal ST depression.
- Multiple blocked vessels.