

heart

Dataset Name: heart

Shape: 303 rows, 14 columns

Missing Values in Dataset:

Column Name	Missing Values
age	0
sex	0
cp	0
trestbps	0
chol	0
fbs	0
restecg	0
thalach	0
exang	0
oldpeak	0
slope	0
ca	0
thal	0
target	0

Dataset Description:

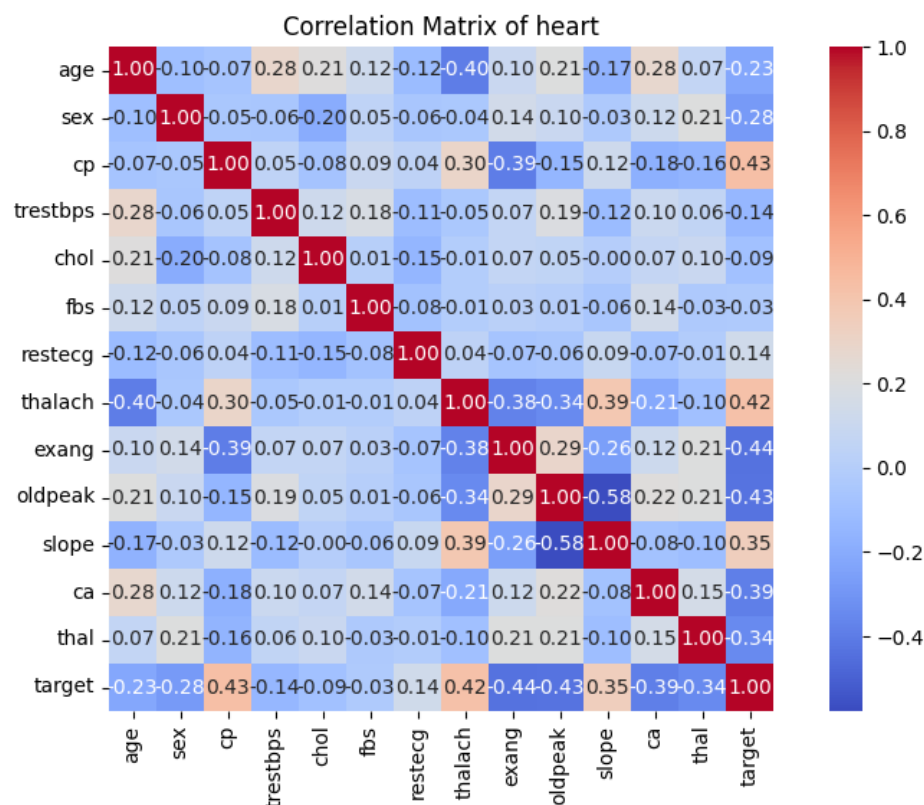
Statistic	age	sex	cp	trestbps
count	303.00	303.00	303.00	303.00
mean	54.37	0.68	0.97	131.62
std	9.08	0.47	1.03	17.54
min	29.00	0.00	0.00	94.00
25%	47.50	0.00	0.00	120.00
50%	55.00	1.00	1.00	130.00
75%	61.00	1.00	2.00	140.00
max	77.00	1.00	3.00	200.00

Statistic	chol	fbs	restecg	thalach
count	303.00	303.00	303.00	303.00
mean	246.26	0.15	0.53	149.65
std	51.83	0.36	0.53	22.91
min	126.00	0.00	0.00	71.00
25%	211.00	0.00	0.00	133.50
50%	240.00	0.00	1.00	153.00
75%	274.50	0.00	1.00	166.00
max	564.00	1.00	2.00	202.00

Statistic	exang	oldpeak	slope	ca
count	303.00	303.00	303.00	303.00
mean	0.33	1.04	1.40	0.73
std	0.47	1.16	0.62	1.02
min	0.00	0.00	0.00	0.00
25%	0.00	0.00	1.00	0.00
50%	0.00	0.80	1.00	0.00
75%	1.00	1.60	2.00	1.00
max	1.00	6.20	2.00	4.00

Statistic	thal	target
count	303.00	303.00
mean	2.31	0.54
std	0.61	0.50
min	0.00	0.00
25%	2.00	0.00
50%	2.00	1.00
75%	3.00	1.00
max	3.00	1.00

Correlation Plot:



Suggested Optimization Techniques and Models:

Optimization Techniques:

1. Linear Programming:

- Linear programming is used to find the best outcome in a mathematical model with linear relationships.

2. Integer Programming:

- Integer programming restricts some or all of the decision variables to be integers, useful for discrete choices.

Suggested Models based on Numeric Columns:

- Regression Analysis: Use when predicting a continuous outcome based on one or more predictors.

Based on the dataset's characteristics, suitable models could be:

- Linear Regression for continuous numeric outcomes.
- Logistic Regression for binary outcomes.
- Decision Trees or Random Forests for both regression and classification.