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1 C:\Users\kavan\PyCharmMiscProject\.venv\Scripts\python.exe "C:\Users\kavan\
  PyCharmMiscProject\AIML INTERNSHIP\task5.py"
```

```
2 Dataset loaded successfully!
```

```
3
```

```
4      age  sex  cp  trestbps  chol  fbs  ...  exang  oldpeak  slope  ca  thal  target
5 0    63    1    3    145    233    1  ...    0    2.3    0    0    1    1
6 1    37    1    2    130    250    0  ...    0    3.5    0    0    2    1
7 2    41    0    1    130    204    0  ...    0    1.4    2    0    2    1
8 3    56    1    1    120    236    0  ...    0    0.8    2    0    2    1
9 4    57    0    0    120    354    0  ...    1    0.6    2    0    2    1
```

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10
```

```
11 [5 rows x 14 columns]
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12
```

```
13 Features shape: (20, 13)
```

```
14 Target shape: (20,)
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```
15
```

```
16 Training data size: (16, 13)
```

```
17 Testing data size: (4, 13)
```

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18
```

```
19 Logistic Regression model trained successfully!
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20
```

```
21 Model Evaluation Metrics:
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22 Accuracy : 0.75
```

```
23 Precision: 1.0
```

```
24 Recall   : 0.75
```

```
25
```

```
26 Confusion Matrix:
```

```
27 [[0 0]
28  [1 3]]
29
30 Confusion Matrix Explanation:
31 True Negatives : 0
32 False Positives: 0
33 False Negatives: 1
34 True Positives : 3
35
36 Interpretation:
37 - Accuracy shows overall correctness of the model.
38 - Precision shows how reliable positive predictions are.
39 - Recall shows how well the model detects heart disease cases.
40 - Confusion matrix explains prediction distribution.
41
42 Task 5 Completed Successfully!
43
44 Process finished with exit code 0
45
```