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1 C:\Users\kavan\PyCharmMiscProject\.venv\Scripts\python.exe "C:\Users\kavan\
  PyCharmMiscProject\AI ML INTERNSHIP\task7.py"
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```
2 Dataset loaded successfully!
```

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3
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```
4      survived  pclass    sex    age    ...  embark_town  alive  alone
5 0           0        3   male  22.0  ...      Southampton    no   False
6 1           1        1  female  38.0  ...              C      yes   False
7 2           1        3  female  26.0  ...      Southampton    yes   True
8 3           1        1  female  35.0  ...              C      yes   False
9 4           0        3   male  35.0  ...      Southampton    no   True
```

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10
```

```
11 [5 rows x 15 columns]
```

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12
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```
13 Dataset Info:
```

```
14 <class 'pandas.core.frame.DataFrame'>
```

```
15 RangeIndex: 891 entries, 0 to 890
```

```
16 Data columns (total 15 columns):
```

```
17 #      Column      Non-Null Count  Dtype
18 ---  -
19 0      survived      891 non-null      int64
20 1      pclass          891 non-null      int64
21 2      sex             891 non-null      object
22 3      age             714 non-null      float64
23 4      sibsp          891 non-null      int64
24 5      parch          891 non-null      int64
25 6      fare            891 non-null      float64
26 7      embarked       889 non-null      object
```

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27 8 class 891 non-null category
28 9 who 891 non-null object
29 10 adult_male 891 non-null bool
30 11 deck 203 non-null category
31 12 embark_town 889 non-null object
32 13 alive 891 non-null object
33 14 alone 891 non-null bool
34 dtypes: bool(2), category(2), float64(2), int64(4), object(5)
35 memory usage: 80.7+ KB
36 None
37
38 Missing Values:
39 survived 0
40 pclass 0
41 sex 0
42 age 177
43 sibsp 0
44 parch 0
45 fare 0
46 embarked 2
47 class 0
48 who 0
49 adult_male 0
50 deck 688
51 embark_town 2
52 alive 0
53 alone 0

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54 dtype: int64
55 C:\Users\kavan\PyCharmMiscProject\AIML INTERNSHIP\task7.py:24: FutureWarning: A
    value is trying to be set on a copy of a DataFrame or Series through chained
    assignment using an inplace method.
56 The behavior will change in pandas 3.0. This inplace method will never work because
    the intermediate object on which we are setting values always behaves as a copy.
57
58 For example, when doing 'df[col].method(value, inplace=True)', try using 'df.method
    ({col: value}, inplace=True)' or df[col] = df[col].method(value) instead, to perform
    the operation inplace on the original object.
59
60
61 df["age"].fillna(df["age"].median(), inplace=True)
62 C:\Users\kavan\PyCharmMiscProject\AIML INTERNSHIP\task7.py:25: FutureWarning: A
    value is trying to be set on a copy of a DataFrame or Series through chained
    assignment using an inplace method.
63 The behavior will change in pandas 3.0. This inplace method will never work because
    the intermediate object on which we are setting values always behaves as a copy.
64
65 For example, when doing 'df[col].method(value, inplace=True)', try using 'df.method
    ({col: value}, inplace=True)' or df[col] = df[col].method(value) instead, to perform
    the operation inplace on the original object.
66
67
68 df["embark_town"].fillna(df["embark_town"].mode()[0], inplace=True)
69
70 Train size: (712, 10)
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71 Test size : (179, 10)
72
73 Logistic Regression model trained successfully!
74
75 Evaluation Metrics:
76 Accuracy : 0.8044692737430168
77 Precision: 0.7931034482758621
78 Recall   : 0.6666666666666666
79 F1 Score : 0.7244094488188977
80
81 Confusion Matrix:
82 [[98 12]
83  [23 46]]
84
85 AUC Score: 0.844137022397892
86
87 Task 7 Completed Successfully!
88
89 Process finished with exit code 0
90
```