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[3]: # 1. Import libraries
import pandas as pd #1
from sklearn.preprocessing import LabelEncoder #2

# 2. Load Titanic dataset from URL
url = 'https://raw.githubusercontent.com/datasciencedojo/datasets/master/titanic.csv' #3
df = pd.read_csv(url) #4

# 3. Handle missing "Age" values (fill with median)
df.fillna(df['Age'].median(), inplace=True) #5

# 4. Label encode the "Sex" column
le = LabelEncoder() #6
df['Sex'] = le.fit_transform(df['Sex']) #7

# 5. One-hot encode the "Embarked" column (handle missing values too)
df.fillna(df['Embarked'].mode(), inplace=True) #8
embarked_dummies = pd.get_dummies(df['Embarked'], prefix='Embarked') #9
df = pd.concat([df, embarked_dummies], axis=1) #10
df.drop('Embarked', axis=1, inplace=True) #11

# 6. Save the cleaned dataset
df.to_csv('titanic_cleaned.csv', index=False) #12
```


titanic_cleaned.csv X

C: > Users > aditya > PycharmProjects > PythonProject2 > titanic_cleaned.csv > data

```
1 PassengerId,Survived,Pclass,Name,Sex,Age,SibSp,Parch,Ticket,Fare,Cabin,Embarked_28.0,Embarked_C,Embarked_Q,Embarked_S
35 34,0,2,"Wheadon, Mr. Edward H",1,66.0,0,0,C.A. 24579,10.5,28.0,False,False,False,True
36 35,0,1,"Meyer, Mr. Edgar Joseph",1,28.0,1,0,PC 17604,82.1708,28.0,False,True,False,False
37 36,0,1,"Holmerson, Mr. Alexander Oskar",1,42.0,1,0,113789,52.0,28.0,False,False,False,True
38 37,1,3,"Mamee, Mr. Hanna",1,28.0,0,0,2677,7.2292,28.0,False,True,False,False
39 38,0,3,"Cann, Mr. Ernest Charles",1,21.0,0,0,A./5. 2152,8.05,28.0,False,False,False,True
40 39,0,3,"Vander Planke, Miss. Augusta Maria",0,18.0,2,0,345764,18.0,28.0,False,False,False,True
41 40,1,3,"Nicola-Yarred, Miss. Jamila",0,14.0,1,0,2651,11.2417,28.0,False,True,False,False
42 41,0,3,"Ahlin, Mrs. Johan (Johanna Persdotter Larsson)",0,40.0,1,0,7546,9.475,28.0,False,False,False,True
43 42,0,2,"Turpin, Mrs. William John Robert (Dorothy Ann Wonnacott)",0,27.0,1,0,11668,21.0,28.0,False,False,False,True
44 43,0,3,"Kraeff, Mr. Theodor",1,28.0,0,0,349253,7.8958,28.0,False,True,False,False
45 44,1,2,"Laroche, Miss. Simonne Marie Anne Andree",0,3.0,1,2,SC/Paris 2123,41.5792,28.0,False,True,False,False
46 45,1,3,"Devaney, Miss. Margaret Delia",0,19.0,0,0,330958,7.8792,28.0,False,False,True,False
47 46,0,3,"Rogers, Mr. William John",1,28.0,0,0,S.C./A.4. 23567,8.05,28.0,False,False,False,True
48 47,0,3,"Lennon, Mr. Denis",1,28.0,1,0,370371,15.5,28.0,False,False,True,False
49 48,1,3,"O'Driscoll, Miss. Bridget",0,28.0,0,0,14311,7.75,28.0,False,False,True,False
50 49,0,3,"Samaan, Mr. Youssef",1,28.0,2,0,2662,21.6792,28.0,False,True,False,False
51 50,0,3,"Arnold-Franchi, Mrs. Josef (Josefine Franchi)",0,18.0,1,0,349237,17.8,28.0,False,False,False,True
52 51,0,3,"Panula, Master. Juha Niilo",1,7.0,4,1,3101295,39.6875,28.0,False,False,False,True
53 52,0,3,"Nosworthy, Mr. Richard Cater",1,21.0,0,0,A/4. 39886,7.8,28.0,False,False,False,True
54 53,1,1,"Harper, Mrs. Henry Sleeper (Myna Haxtun)",0,49.0,1,0,PC 17572,76.7292,D33,False,True,False,False
55 54,1,2,"Faunthorpe, Mrs. Lizzie (Elizabeth Anne Wilkinson)",0,29.0,1,0,2926,26.0,28.0,False,False,False,True
56 55,0,1,"Ostby, Mr. Engelhart Cornelius",1,65.0,0,1,113509,61.9792,B30,False,True,False,False
57 56,1,1,"Woolner, Mr. Hugh",1,28.0,0,0,19947,35.5,C52,False,False,False,True
58 57,1,2,"Rugg, Miss. Emily",0,21.0,0,0,C.A. 31026,10.5,28.0,False,False,False,True
59 58,0,3,"Novel, Mr. Mansouer",1,28.5,0,0,2697,7.2292,28.0,False,True,False,False
60 59,1,2,"West, Miss. Constance Mirium",0,5.0,1,2,C.A. 34651,27.75,28.0,False,False,False,True
61 60,0,3,"Goodwin, Master. William Frederick",1,11.0,5,2,CA 2144,46.9,28.0,False,False,False,True
62 61,0,3,"Sirayanian, Mr. Orsen",1,22.0,0,0,2669,7.2292,28.0,False,True,False,False
63 62,1,1,"Icard, Miss. Amelie",0,38.0,0,0,113572,80.0,B28,True,False,False,False
64 63,0,1,"Harris, Mr. Henry Birkhardt",1,45.0,1,0,36973,83.475,C83,False,False,False,True
65 64,0,3,"Skoog, Master. Harald",1,4.0,3,2,347088,27.9,28.0,False,False,False,True
66 65,0,1,"Stewart, Mr. Albert A",1,28.0,0,0,PC 17605,27.7208,28.0,False,True,False,False
67 66,1,3,"Moubarek, Master. Gerios",1,28.0,1,1,2661,15.2458,28.0,False,True,False,False
68 67,1,2,"Nye, Mrs. (Elizabeth Ramell)",0,29.0,0,0,C.A. 29395,10.5,F33,False,False,False,True
69 68,0,3,"Crease, Mr. Ernest James",1,19.0,0,0,S.P. 3464,8.1583,28.0,False,False,False,True
70 69,1,3,"Andersson, Miss. Erna Alexandra",0,17.0,4,2,3101281,7.925,28.0,False,False,False,True
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titanic_cleaned.csv X

C: > Users > adity > PycharmProjects > PythonProject2 > titanic_cleaned.csv > data

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1 PassengerId,Survived,Pclass,Name,Sex,Age,SibSp,Parch,Ticket,Fare,Cabin,Embarked_28.0,Embarked_C,Embarked_Q,Embarked_S
2 1,0,3,"Braund, Mr. Owen Harris",1,22.0,1,0,A/5 21171,7.25,28.0,False,False,False,True
3 2,1,1,"Cumings, Mrs. John Bradley (Florence Briggs Thayer)",0,38.0,1,0,PC 17599,71.2833,C85,False,True,False,False
4 3,1,3,"Heikkinen, Miss. Laina",0,26.0,0,0,STON/O2. 3101282,7.925,28.0,False,False,False,True
5 4,1,1,"Futrelle, Mrs. Jacques Heath (Lily May Peel)",0,35.0,1,0,113803,53.1,C123,False,False,False,True
6 5,0,3,"Allen, Mr. William Henry",1,35.0,0,0,373450,8.05,28.0,False,False,False,True
7 6,0,3,"Moran, Mr. James",1,28.0,0,0,330877,8.4583,28.0,False,False,True,False
8 7,0,1,"McCarthy, Mr. Timothy J",1,54.0,0,0,17463,51.8625,E46,False,False,False,True
9 8,0,3,"Palsson, Master. Gosta Leonard",1,2.0,3,1,349909,21.075,28.0,False,False,False,True
10 9,1,3,"Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)",0,27.0,0,2,347742,11.1333,28.0,False,False,False,True
11 10,1,2,"Nasser, Mrs. Nicholas (Adele Achem)",0,14.0,1,0,237736,30.0708,28.0,False,True,False,False
12 11,1,3,"Sandstrom, Miss. Marguerite Rut",0,4.0,1,1,PP 9549,16.7,G6,False,False,False,True
13 12,1,1,"Bonnell, Miss. Elizabeth",0,58.0,0,0,113783,26.55,C103,False,False,False,True
14 13,0,3,"Saunderscock, Mr. William Henry",1,20.0,0,0,A/5. 2151,8.05,28.0,False,False,False,True
15 14,0,3,"Andersson, Mr. Anders Johan",1,39.0,1,5,347082,31.275,28.0,False,False,False,True
16 15,0,3,"Vestrom, Miss. Hulda Amanda Adolfina",0,14.0,0,0,350406,7.8542,28.0,False,False,False,True
17 16,1,2,"Hewlett, Mrs. (Mary D Kingcome) ",0,55.0,0,0,248706,16.0,28.0,False,False,False,True
18 17,0,3,"Rice, Master. Eugene",1,2.0,4,1,382652,29.125,28.0,False,False,True,False
19 18,1,2,"Williams, Mr. Charles Eugene",1,28.0,0,0,244373,13.0,28.0,False,False,False,True
20 19,0,3,"Vander Planke, Mrs. Julius (Emelia Maria Vandemoortele)",0,31.0,1,0,345763,18.0,28.0,False,False,False,True
21 20,1,3,"Masselmani, Mrs. Fatima",0,28.0,0,0,2649,7.225,28.0,False,True,False,False
22 21,0,2,"Fynney, Mr. Joseph J",1,35.0,0,0,239865,26.0,28.0,False,False,False,True
23 22,1,2,"Beesley, Mr. Lawrence",1,34.0,0,0,248698,13.0,D56,False,False,False,True
24 23,1,3,"McGowan, Miss. Anna ""Annie""",0,15.0,0,0,330923,8.0292,28.0,False,False,True,False
25 24,1,1,"Sloper, Mr. William Thompson",1,28.0,0,0,113788,35.5,A6,False,False,False,True
26 25,0,3,"Palsson, Miss. Torborg Danira",0,8.0,3,1,349909,21.075,28.0,False,False,False,True
27 26,1,3,"Asplund, Mrs. Carl Oscar (Selma Augusta Emilia Johansson)",0,38.0,1,5,347077,31.3875,28.0,False,False,False,True
28 27,0,3,"Emir, Mr. Farred Chehab",1,28.0,0,0,2631,7.225,28.0,False,True,False,False
29 28,0,1,"Fortune, Mr. Charles Alexander",1,19.0,3,2,19950,263.0,C23 C25 C27,False,False,False,True
30 29,1,3,"O'Dwyer, Miss. Ellen ""Nellie""",0,28.0,0,0,330959,7.8792,28.0,False,False,True,False
31 30,0,3,"Todoroff, Mr. Lalio",1,28.0,0,0,349216,7.8958,28.0,False,False,False,True
32 31,0,1,"Uruchurtu, Don. Manuel E",1,40.0,0,0,PC 17601,27.7208,28.0,False,True,False,False
33 32,1,1,"Spencer, Mrs. William Augustus (Marie Eugenie)",0,28.0,1,0,PC 17569,146.5208,B78,False,True,False,False
34 33,1,3,"Glynn, Miss. Mary Agatha",0,28.0,0,0,335677,7.75,28.0,False,False,True,False
35 34,0,2,"Wheaddon, Mr. Edward H",1,66.0,0,0,C.A. 24579,10.5,28.0,False,False,False,True
36 35,0,1,"Meyer, Mr. Edgar Joseph",1,28.0,1,0,PC 17604,82.1708,28.0,False,True,False,False
37 36,0,1,"Holverson, Mr. Alexander Oskar",1,42.0,1,0,113789,52.0,28.0,False,False,False,True
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