AIM:

To load titanic dataset from esv, handle missing values using simple imputer, analyze key possenger features, filter passenger based on condidates, and prepare data for medel training and testing.

## Proceduse / Algorithm:

Step 1: Load titanic. CSV into a dataframe Step 2: Explore dataset shape, info and Summary statistics.

Step3: use simple Imputer to fill missing Age.

Step 4: Fill missing calin with "unknown" and embaced with mode.

Step 5: visualize passenger class

Step 6: Filter Passangers by genders, Survival, class, age far embancation, tamily abroad, and survival status.

Step 7: Identity top oldest survivors and geros - fore passangers

Step 8: Split training and testing sets.

Passanger class distribution STOND FROM DAMES Towns intounce in the values main primer 29mbov 60powser your partures, file et uta paragray by o teta ilmini Pclass White housest in was simple temperation Perissim Just . 18 per show in interest

```
COULKHIA:
  import pandas as pol
   import seaborn as sos
    import matplotlib. pyplot as plt
    from Sklean. impute import simple Imputer
    from Sklearn model - selection import train-
    at = sns. load -dataset ('titanic')
    dt ['age'] = Simple Imputer (Strategy = 'mean')
              tit_transform (dt[['age']])
     at ['deck'] = dt ['deck']. (ate. add_ categories ('unkno con')
     dt ['deck] = df ['deck']. fillna ('unknown')
     of ['embanced'] = dt ['embancod'] - till na
          (at ['embanced'] . mode()[0])
    Sns. count plot (x = /pclass', data=dt) Attitle
         ( Passanger class distribution)
        Plt-show()
     Print ["Females who survived:"; df [(df,
       Sex = 'female') & (dt. survived ==1)].inde
                                   to list(1)
     Print (" 3rd class passangers under 18: ",
```

Print("  $3^{*d}$  class passangers under 18:")  $at[(dt \cdot plass == 3) = (dd = age < 18)].$ index. tolist() Passangers who paid zero tax: 15 passanger

Training set size: 712 hord taxini

Testing set size = 174 hord tagent

Testing set size = 174 hord tagent

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at [ age ] - simple Impudes [ Stockery = me

([[ cape]]) to motion ( It [[ cape]])

Print (" (1st class passangers older than "

older than 40

print (" 1st class passangers older than 40

ender than 40

who survived: ", off [(df. Pclass ==1) e(df age)

40) e (df-survived ==1) J.index. to list())

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RESULT:
The Program Successfully indiffertifies

Presaugers with zero for and efficiently

splits the datasets into 80% training and

20% testing sets, ensuring reproducibility

and readiness for machine learning tasks.