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Titanic Missing Values Handling

Problem statement:

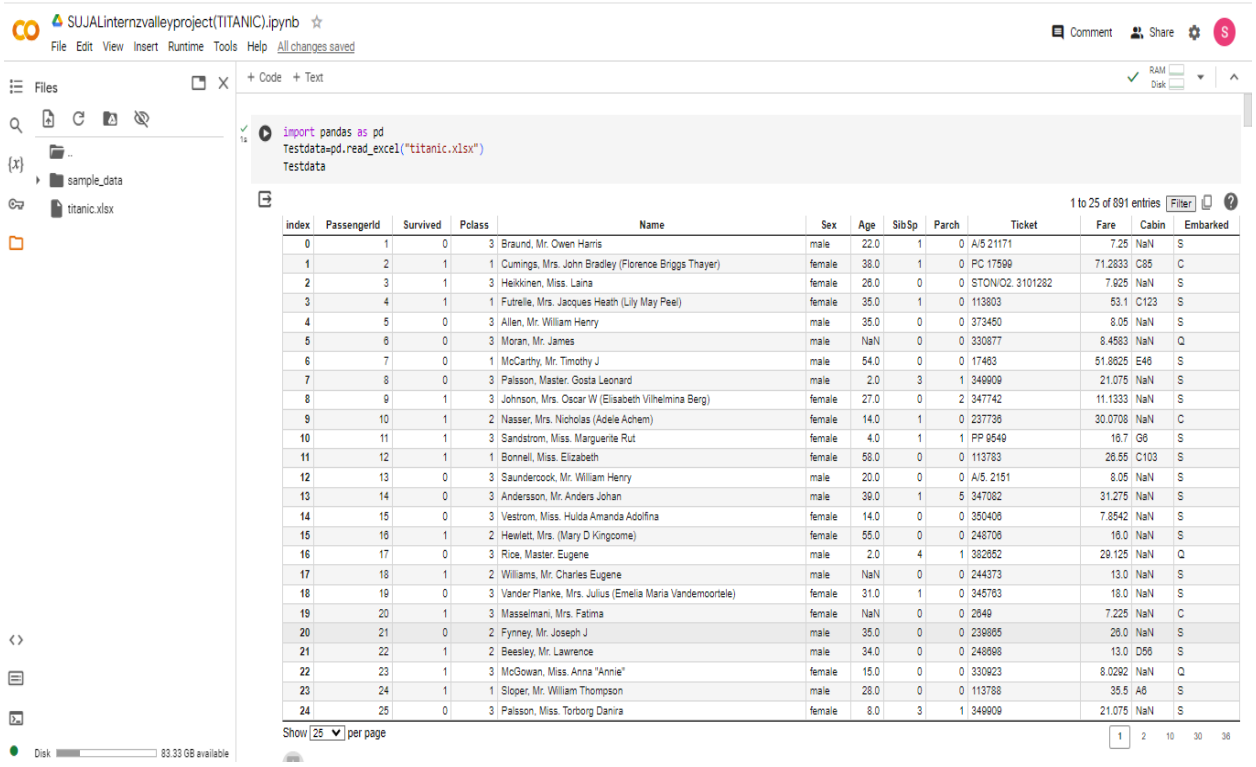
In the given Titanic dataset, perform basic data exploration and analysis to gain insights into the demographics of passengers onboard the Titanic. The project involves tasks such as data cleaning, visualization, and basic statistical analysis to understand various aspects of the passengers, such as their demographics, ticket fares, and family relations, and also effectively handle missing values in this dataset using various techniques in Python

SOLUTION:

Using google colab for the operation

File link:

SUJALinternzvalleyproject(TITANIC).ipynb



1 to 25 of 891 entries Filter

index	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.25	NaN	S
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Thayer)	female	38.0	1	0	PC 17599	71.2833	C85	C
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.925	NaN	S
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1	C123	S
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	8.05	NaN	S
5	6	0	3	Moran, Mr. James	male	NaN	0	0	330877	8.4583	NaN	Q
6	7	0	1	McCarthy, Mr. Timothy J	male	54.0	0	0	17463	51.8625	E46	S
7	8	0	3	Palsson, Master. Gosta Leonard	male	2.0	3	1	349909	21.075	NaN	S
8	9	1	3	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	female	27.0	0	2	347742	11.1333	NaN	S
9	10	1	2	Nasser, Mrs. Nicholas (Adele Achem)	female	14.0	1	0	237736	30.0708	NaN	C
10	11	1	3	Sandstrom, Miss. Marguerite Rut	female	4.0	1	1	PP 9549	16.7	G6	S
11	12	1	1	Bonnell, Miss. Elizabeth	female	58.0	0	0	113783	26.55	C103	S
12	13	0	3	Saundercock, Mr. William Henry	male	20.0	0	0	A/5. 2151	8.05	NaN	S
13	14	0	3	Andersson, Mr. Anders Johan	male	39.0	1	5	347082	31.275	NaN	S
14	15	0	3	Vestrom, Miss. Hulda Amanda Adolfina	female	14.0	0	0	350406	7.8542	NaN	S
15	16	1	2	Hewlett, Mrs. (Mary D Kingcome)	female	55.0	0	0	248706	16.0	NaN	S
16	17	0	3	Rice, Master. Eugene	male	2.0	4	1	382652	29.125	NaN	Q
17	18	1	2	Williams, Mr. Charles Eugene	male	NaN	0	0	244373	13.0	NaN	S
18	19	0	3	Vander Planke, Mrs. Julius (Emelia Maria Vandemoortele)	female	31.0	1	0	345763	18.0	NaN	S
19	20	1	3	Masselmani, Mrs. Fatima	female	NaN	0	0	2649	7.225	NaN	C
20	21	0	2	Fynney, Mr. Joseph J	male	35.0	0	0	239865	26.0	NaN	S
21	22	1	2	Beesley, Mr. Lawrence	male	34.0	0	0	248698	13.0	D56	S
22	23	1	3	McGowan, Miss. Anna "Annie"	female	15.0	0	0	330923	8.0292	NaN	Q
23	24	1	1	Sloper, Mr. William Thompson	male	28.0	0	0	113788	35.5	A6	S
24	25	0	3	Palsson, Miss. Torborg Danira	female	8.0	3	1	349909	21.075	NaN	S

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```
Testdata.describe()
```

1 to 8 of 8 entries Filter

index	PassengerId	Survived	Pclass	Age	SibSp	Parch	Fare
count	891.0	891.0	891.0	714.0	891.0	891.0	891.0
mean	446.0	0.3838383838383838	2.308641975308642	29.69911764705882	0.5230078563411896	0.3815937149270482	32.204207968574636
std	257.3538420152301	0.4865924542648575	0.836071240977049	14.526497332334042	1.1027434322934317	0.8060572211299483	49.6934285971809
min	1.0	0.0	1.0	0.42	0.0	0.0	0.0
25%	223.5	0.0	2.0	20.125	0.0	0.0	7.9104
50%	446.0	0.0	3.0	28.0	0.0	0.0	14.4542
75%	668.5	1.0	3.0	38.0	1.0	0.0	31.0
max	891.0	1.0	3.0	80.0	8.0	6.0	512.3292

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```
[4]  Testdata.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 891 entries, 0 to 890
Data columns (total 12 columns):
 #   Column       Non-Null Count  Dtype
---  ------       --------------  -----
 0   PassengerId  891 non-null    int64
 1   Survived     891 non-null    int64
 2   Pclass       891 non-null    int64
 3   Name         891 non-null    object
 4   Sex          891 non-null    object
 5   Age          714 non-null    float64
 6   SibSp        891 non-null    int64
 7   Parch        891 non-null    int64
 8   Ticket       891 non-null    object
 9   Fare         891 non-null    float64
 10  Cabin        204 non-null    object
 11  Embarked     889 non-null    object
dtypes: float64(2), int64(5), object(5)
memory usage: 83.7+ KB
```

```
[24]  print("The no of passengers in the given dataset are:" ,Testdata["PassengerId"].count())
```

```
The no of passengers in the given dataset are: 891
```

```
print("Mean age of passengers on the ship was: ",round(Testdata["Age"].mean(),2),"years old")
```

```
Mean age of passengers on the ship was:  29.7 Years old
```

```
[14] print("The youngest person on the ship was :",round(Testdata["Age"].min(),2),"years old")
```

```
The youngest person on the ship was : 0.42 years old
```

```
[15] print("The seniormost person on the ship in terms of age was :",round(Testdata["Age"].max(),2),"years old")
```

```
The seniormost person on the ship in terms of age was : 80.0 years old
```

```
[20]  print("The no of males on the ship were:", Testdata[Testdata["Sex"]=="male"]["Sex"].count())
```

```
The no of males on the ship were: 577
```

```
[21] print("The no of females on the ship were:", Testdata[Testdata["Sex"]=="female"]["Sex"].count())
```

```
The no of females on the ship were: 314
```

```
[26] print("Average ticket fare was",round(Testdata["Fare"].mean(),3))
```

```
Average ticket fare was 32.204
```

```
[28] print("Costliest ticket was priced at",round(Testdata["Fare"].max(),3))
```

```
Costliest ticket was priced at 512.329
```

```
[29] print("Cheapest ticket was priced at",round(Testdata["Fare"].min(),3),"which means free tickets were handed out too")
```

```
Cheapest ticket was priced at 0.0 which means free tickets were handed out too
```

```
[36] print("Excluding the free tickets the cheapest ticket fared at " ,Testdata[Testdata["Fare"]!=0]["Fare"].min())
```

```
Excluding the free tickets the cheapest ticket fared at  4.0125
```

```
[41] print("Maximum number of people were travelling in :",Testdata["Pclass"].max(),"class")
```

```
Maximum number of people were travelling in : 3 class
```

```
[38] print("No of people travelling in 1st class were:", Testdata[Testdata["Pclass"]==1]["Pclass"].count() )
```

```
No of people travelling in 1st class were: 216
```

```
[39] print("No of people travelling in 2nd class were:", Testdata[Testdata["Pclass"]==2]["Pclass"].count() )
```

```
No of people travelling in 2nd class were: 184
```

```
[40] print("No of people travelling in 3rd class were:", Testdata[Testdata["Pclass"]==3]["Pclass"].count() )
```

```
No of people travelling in 3rd class were: 491
```

```
[44] print("The no of people who survived the shipwreck were:", Testdata[Testdata['Survived']==1]['Survived'].count())
```

```
The no of people who survived the shipwreck were: 342
```

```
Testdata.isnull()
```

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
0	False	False	False	False	False	False	False	False	False	False	True	False
1	False	False	False	False	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False	False	False	True	False
3	False	False	False	False	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False	False	False	True	False
...	...	...	...	...	...	...	...	...	...	...	...	...
886	False	False	False	False	False	False	False	False	False	False	True	False
887	False	False	False	False	False	False	False	False	False	False	False	False
888	False	False	False	False	False	True	False	False	False	False	True	False
889	False	False	False	False	False	False	False	False	False	False	False	False
890	False	False	False	False	False	False	False	False	False	False	True	False

891 rows × 12 columns

```
Testdata.isnull().any()
```

```
PassengerId    False
Survived       False
Pclass         False
Name           False
Sex            False
Age             True
SibSp          False
Parch          False
Ticket         False
Fare           False
Cabin           True
Embarked        True
dtype: bool
```

```
[53] Testdata.isnull().sum()
```

```
PassengerId      0
Survived         0
Pclass           0
Name             0
Sex              0
Age            177
SibSp            0
Parch            0
Ticket           0
Fare             0
Cabin          687
Embarked         2
dtype: int64
```

```
[59] #We can either terminate the whole record containing the missing values or substitue them with a variable
     Newsample=Testdata.dropna()
     Newsample
```

1 to 25 of 183 entries Filter

index	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Thayer)	female	38.0	1	0	PC 17599	71.2833	C85	C
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1	C123	S
6	7	0	1	McCarthy, Mr. Timothy J	male	54.0	0	0	17463	51.8625	E46	S
10	11	1	3	Sandstrom, Miss. Marguerite Rut	female	4.0	1	1	PP 9549	16.7	G6	S
11	12	1	1	Bonnell, Miss. Elizabeth	female	58.0	0	0	113783	26.55	C103	S
21	22	1	2	Beesley, Mr. Lawrence	male	34.0	0	0	248698	13.0	D56	S
23	24	1	1	Sloper, Mr. William Thompson	male	28.0	0	0	113788	35.5	A6	S
27	28	0	1	Fortune, Mr. Charles Alexander	male	19.0	3	2	19950	263.0	C23 C25 C27	S
52	53	1	1	Harper, Mrs. Henry Sleeper (Myna Haxtun)	female	49.0	1	0	PC 17572	76.7292	D33	C
54	55	0	1	Ostby, Mr. Engelhart Cornelius	male	65.0	0	1	113509	61.9792	B30	C
62	63	0	1	Harris, Mr. Henry Birkhardt	male	45.0	1	0	36973	83.475	C83	S
66	67	1	2	Nye, Mrs. (Elizabeth Ramell)	female	29.0	0	0	C.A. 29395	10.5	F33	S
75	76	0	3	Moen, Mr. Sigurd Hansen	male	25.0	0	0	348123	7.65	F G73	S
88	89	1	1	Fortune, Miss. Mabel Helen	female	23.0	3	2	19950	263.0	C23 C25 C27	S
92	93	0	1	Chaffee, Mr. Herbert Fuller	male	46.0	1	0	W.E.P. 5734	61.175	E31	S
96	97	0	1	Goldschmidt, Mr. George B	male	71.0	0	0	PC 17754	34.6542	A5	C
97	98	1	1	Greenfield, Mr. William Bertram	male	23.0	0	1	PC 17759	63.3583	D10 D12	C
102	103	0	1	White, Mr. Richard Frasar	male	21.0	0	1	35281	77.2875	D26	S
110	111	0	1	Porter, Mr. Walter Chamberlain	male	47.0	0	0	110465	52.0	C110	S
118	119	0	1	Baxter, Mr. Quigg Edmond	male	24.0	0	1	PC 17558	247.5208	B58 B60	C
123	124	1	2	Webber, Miss. Susan	female	32.5	0	0	27267	13.0	E101	S
124	125	0	1	White, Mr. Percival Wayland	male	54.0	0	1	35281	77.2875	D26	S
136	137	1	1	Newsom, Miss. Helen Monypeny	female	19.0	0	2	11752	26.2833	D47	S
137	138	0	1	Futrelle, Mr. Jacques Heath	male	37.0	1	0	113803	53.1	C123	S
139	140	0	1	Giglio, Mr. Victor	male	24.0	0	0	PC 17593	79.2	B86	C

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1 2 3 4 5 6 7 8

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```
[61] Sample2=Testdata.fillna("-")
     Sample2
```

1 to 25 of 891 entries Filter

index	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
0	1	0	3	Braund, Mr. Owen Harris	male	22	1	0	A/5 21171	7.25	-	S
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Thayer)	female	38	1	0	PC 17599	71.2833	C85	C
2	3	1	3	Heikkinen, Miss. Laina	female	26	0	0	STON/O2. 3101282	7.925	-	S
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35	1	0	113803	53.1	C123	S
4	5	0	3	Allen, Mr. William Henry	male	35	0	0	373450	8.05	-	S
5	6	0	3	Moran, Mr. James	male	-	0	0	330877	8.4583	-	Q
6	7	0	1	McCarthy, Mr. Timothy J	male	54	0	0	17463	51.8625	E46	S
7	8	0	3	Palsson, Master. Gosta Leonard	male	2	3	1	349909	21.075	-	S
8	9	1	3	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	female	27	0	2	347742	11.1333	-	S
9	10	1	2	Nasser, Mrs. Nicholas (Adele Achem)	female	14	1	0	237736	30.0708	-	C
10	11	1	3	Sandstrom, Miss. Marguerite Rut	female	4	1	1	PP 9549	16.7	G6	S
11	12	1	1	Bonnell, Miss. Elizabeth	female	58	0	0	113783	26.55	C103	S
12	13	0	3	Saundercock, Mr. William Henry	male	20	0	0	A/5. 2151	8.05	-	S
13	14	0	3	Andersson, Mr. Anders Johan	male	39	1	5	347082	31.275	-	S
14	15	0	3	Vestrom, Miss. Hulda Amanda Adolfina	female	14	0	0	350406	7.8542	-	S
15	16	1	2	Hewlett, Mrs. (Mary D Kingcome)	female	55	0	0	248706	16.0	-	S
16	17	0	3	Rice, Master. Eugene	male	2	4	1	382652	29.125	-	Q
17	18	1	2	Williams, Mr. Charles Eugene	male	-	0	0	244373	13.0	-	S
18	19	0	3	Vander Planke, Mrs. Julius (Emelia Maria Vandemoortele)	female	31	1	0	345763	18.0	-	S
19	20	1	3	Masselmani, Mrs. Fatima	female	-	0	0	2649	7.225	-	C
20	21	0	2	Fynney, Mr. Joseph J	male	35	0	0	239865	26.0	-	S
21	22	1	2	Beesley, Mr. Lawrence	male	34	0	0	248698	13.0	D56	S
22	23	1	3	McGowan, Miss. Anna "Annie"	female	15	0	0	330923	8.0292	-	Q
23	24	1	1	Sloper, Mr. William Thompson	male	28	0	0	113788	35.5	A6	S
24	25	0	3	Palsson, Miss. Torborg Danira	female	8	3	1	349909	21.075	-	S

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```
Sample3=Testdata.fillna({"Age":"*"})
Sample3
```

1 to 25 of 891 entries Filter

index	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
0	1	0	3	Braund, Mr. Owen Harris	male	22	1	0	A/5 21171	7.25	NaN	S
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Thayer)	female	38	1	0	PC 17599	71.2833	C85	C
2	3	1	3	Heikkinen, Miss. Laina	female	26	0	0	STON/O2. 3101282	7.925	NaN	S
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35	1	0	113803	53.1	C123	S
4	5	0	3	Allen, Mr. William Henry	male	35	0	0	373450	8.05	NaN	S
5	6	0	3	Moran, Mr. James	male	*	0	0	330877	8.4583	NaN	Q
6	7	0	1	McCarthy, Mr. Timothy J	male	54	0	0	17463	51.8625	E46	S
7	8	0	3	Palsson, Master. Gosta Leonard	male	2	3	1	349909	21.075	NaN	S
8	9	1	3	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	female	27	0	2	347742	11.1333	NaN	S
9	10	1	2	Nasser, Mrs. Nicholas (Adele Achem)	female	14	1	0	237736	30.0708	NaN	C
10	11	1	3	Sandstrom, Miss. Marguerite Rut	female	4	1	1	PP 9549	16.7	G6	S
11	12	1	1	Bonnell, Miss. Elizabeth	female	58	0	0	113783	26.55	C103	S
12	13	0	3	Saundercock, Mr. William Henry	male	20	0	0	A/5. 2151	8.05	NaN	S
13	14	0	3	Andersson, Mr. Anders Johan	male	39	1	5	347082	31.275	NaN	S
14	15	0	3	Vestrom, Miss. Hulda Amanda Adolfina	female	14	0	0	350406	7.8542	NaN	S
15	16	1	2	Hewlett, Mrs. (Mary D Kingcome)	female	55	0	0	248706	16.0	NaN	S
16	17	0	3	Rice, Master. Eugene	male	2	4	1	382652	29.125	NaN	Q
17	18	1	2	Williams, Mr. Charles Eugene	male	*	0	0	244373	13.0	NaN	S
18	19	0	3	Vander Planke, Mrs. Julius (Emelia Maria Vandemoortele)	female	31	1	0	345763	18.0	NaN	S
19	20	1	3	Masselmani, Mrs. Fatima	female	*	0	0	2649	7.225	NaN	C
20	21	0	2	Fynney, Mr. Joseph J	male	35	0	0	239865	26.0	NaN	S
21	22	1	2	Beesley, Mr. Lawrence	male	34	0	0	248698	13.0	D56	S
22	23	1	3	McGowan, Miss. Anna "Annie"	female	15	0	0	330923	8.0292	NaN	Q
23	24	1	1	Sloper, Mr. William Thompson	male	28	0	0	113788	35.5	A6	S
24	25	0	3	Palsson, Miss. Torborg Danira	female	8	3	1	349909	21.075	NaN	S

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```
Sample4=Testdata.fillna({"Cabin":"!"})
Sample4
```

1 to 25 of 891 entries Filter

index	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.25	!	S
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Thayer)	female	38.0	1	0	PC 17599	71.2833	C85	C
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.925	!	S
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1	C123	S
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	8.05	!	S
5	6	0	3	Moran, Mr. James	male	NaN	0	0	330877	8.4583	!	Q
6	7	0	1	McCarthy, Mr. Timothy J	male	54.0	0	0	17463	51.8625	E46	S
7	8	0	3	Palsson, Master. Gosta Leonard	male	2.0	3	1	349909	21.075	!	S
8	9	1	3	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	female	27.0	0	2	347742	11.1333	!	S
9	10	1	2	Nasser, Mrs. Nicholas (Adele Achem)	female	14.0	1	0	237736	30.0708	!	C
10	11	1	3	Sandstrom, Miss. Marguerite Rut	female	4.0	1	1	PP 9549	16.7	G6	S
11	12	1	1	Bonnell, Miss. Elizabeth	female	58.0	0	0	113783	26.55	C103	S
12	13	0	3	Saundercock, Mr. William Henry	male	20.0	0	0	A/5. 2151	8.05	!	S
13	14	0	3	Andersson, Mr. Anders Johan	male	39.0	1	5	347082	31.275	!	S
14	15	0	3	Vestrom, Miss. Hulda Amanda Adolfina	female	14.0	0	0	350406	7.8542	!	S
15	16	1	2	Hewlett, Mrs. (Mary D Kingcome)	female	55.0	0	0	248706	16.0	!	S
16	17	0	3	Rice, Master. Eugene	male	2.0	4	1	382652	29.125	!	Q
17	18	1	2	Williams, Mr. Charles Eugene	male	NaN	0	0	244373	13.0	!	S
18	19	0	3	Vander Planke, Mrs. Julius (Emelia Maria Vandemoortele)	female	31.0	1	0	345763	18.0	!	S
19	20	1	3	Masselmani, Mrs. Fatima	female	NaN	0	0	2649	7.225	!	C
20	21	0	2	Fynney, Mr. Joseph J	male	35.0	0	0	239865	26.0	!	S
21	22	1	2	Beesley, Mr. Lawrence	male	34.0	0	0	248698	13.0	D56	S
22	23	1	3	McGowan, Miss. Anna "Annie"	female	15.0	0	0	330923	8.0292	!	Q
23	24	1	1	Sloper, Mr. William Thompson	male	28.0	0	0	113788	35.5	A6	S
24	25	0	3	Palsson, Miss. Torborg Danira	female	8.0	3	1	349909	21.075	!	S

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Next steps: View recommended plots

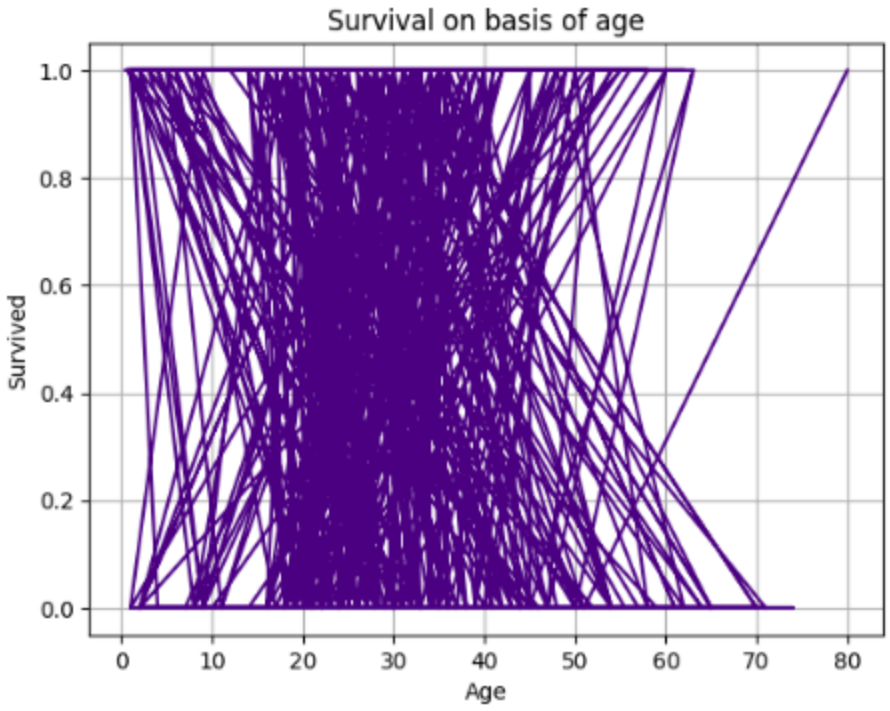
```
[65] Sample5=Testdata.fillna({"Embarked":"Na"})
     Sample5
```

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.2500	NaN	S
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	71.2833	C85	C
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.9250	NaN	S
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000	C123	S
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	8.0500	NaN	S
...	...	...	...	...	...	...	...	...	...	...	...	...
886	887	0	2	Montvila, Rev. Juozas	male	27.0	0	0	211536	13.0000	NaN	S
887	888	1	1	Graham, Miss. Margaret Edith	female	19.0	0	0	112053	30.0000	B42	S
888	889	0	3	Johnston, Miss. Catherine Helen "Carrie"	female	NaN	1	2	W./C. 6607	23.4500	NaN	S
889	890	1	1	Behr, Mr. Karl Howell	male	26.0	0	0	111369	30.0000	C148	C
890	891	0	3	Dooley, Mr. Patrick	male	32.0	0	0	370376	7.7500	NaN	Q

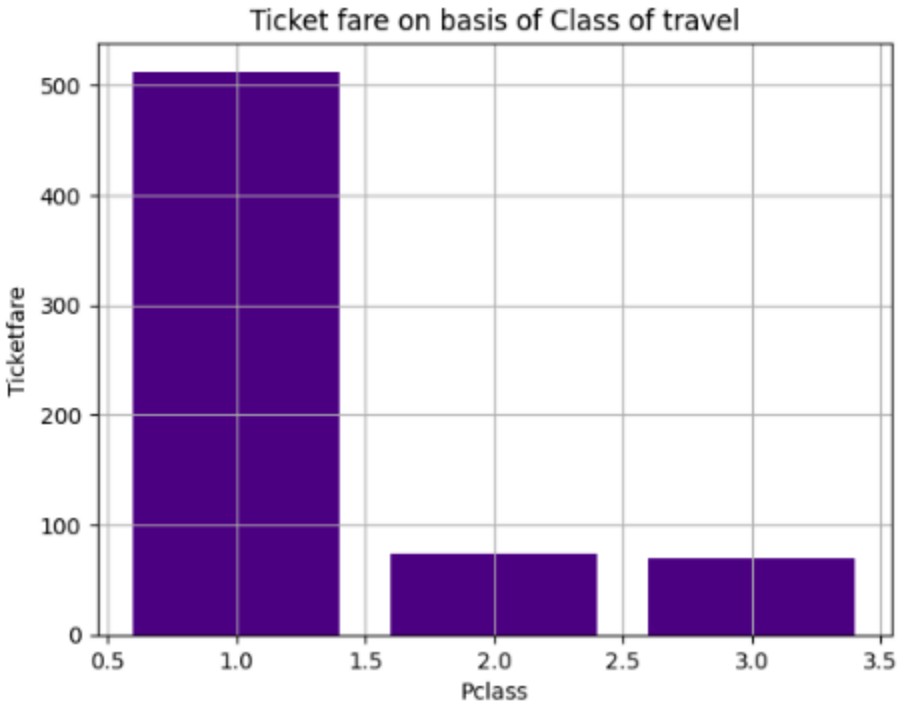
891 rows × 12 columns

Next steps: View recommended plots

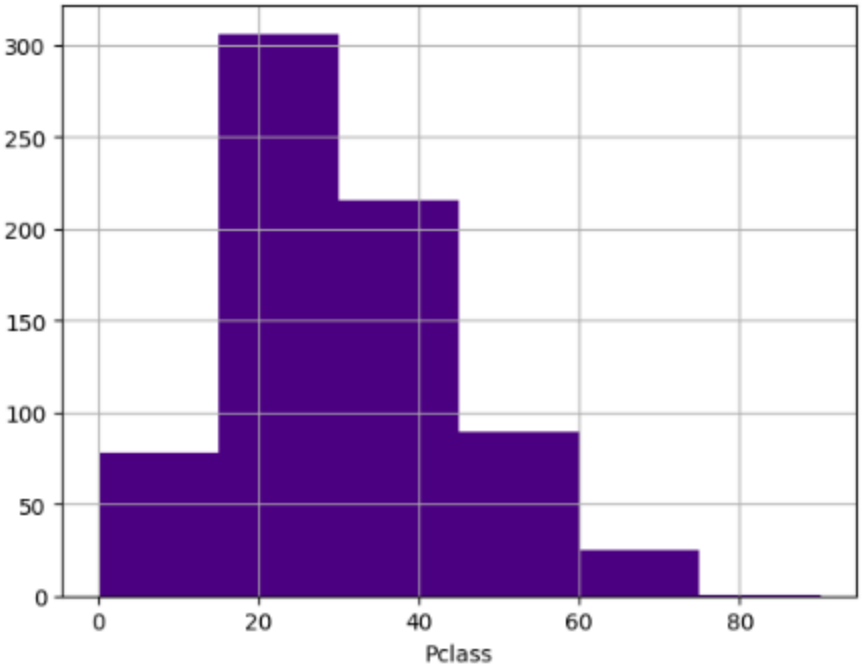
```
import matplotlib.pyplot as plt
plt.plot(Testdata["Age"],Testdata["Survived"],color="indigo")
plt.title("Survival on basis of age")
plt.xlabel("Age")
plt.ylabel("Survived")
plt.grid()
plt.show()
```



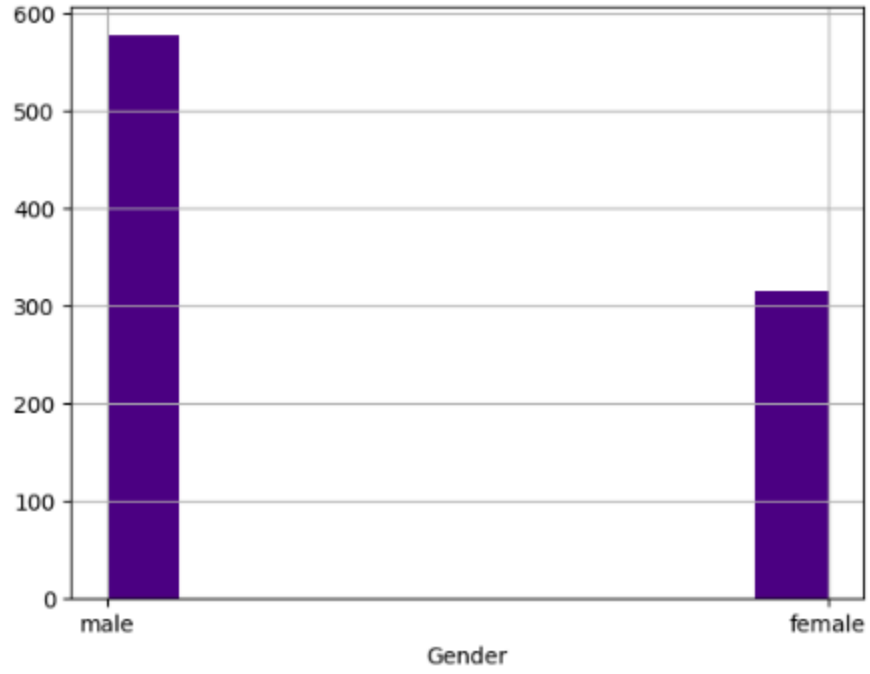
```
import matplotlib.pyplot as plt
plt.bar(Testdata["Pclass"],Testdata["Fare"],color="indigo")
plt.title("Ticket fare on basis of Class of travel")
plt.xlabel("Pclass")
plt.ylabel("Ticketfare")
plt.grid()
plt.show()
```



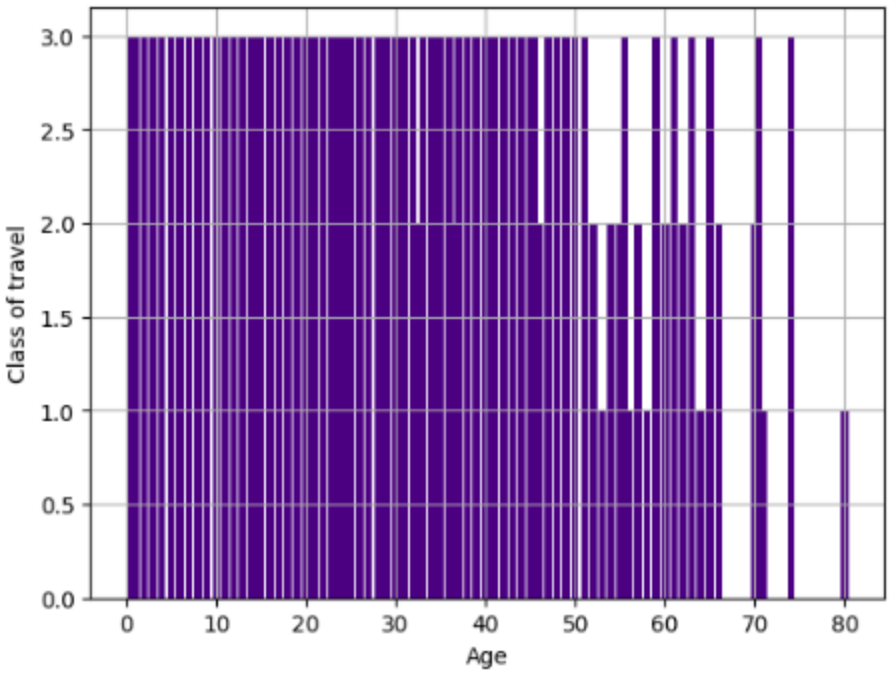
```
import matplotlib.pyplot as plt
plt.hist(Testdata["Age"],bins=[0,15,30,45,60,75,90],color="indigo")

plt.xlabel("Pclass")

plt.grid()
plt.show()
```



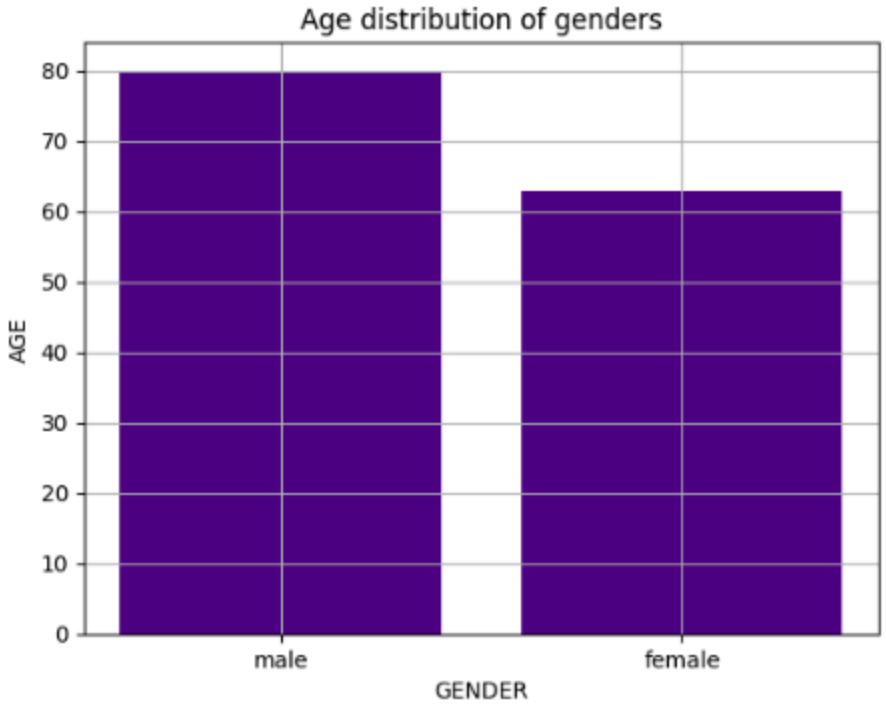
```
[94] import matplotlib.pyplot as plt
     plt.hist(Testdata["Sex"],color="indigo")

     plt.xlabel("Gender")

     plt.grid()
     plt.show()
```



```
import matplotlib.pyplot as plt
plt.bar(Testdata["Age"],Testdata["Pclass"],color="indigo")

plt.xlabel("Age")
plt.ylabel("Class of travel")
plt.grid()
plt.show()
```



```
import matplotlib.pyplot as plt
plt.bar(Testdata["Sex"],Testdata["Age"],color="indigo")
plt.title("Age distribution of genders")
plt.xlabel("GENDER")
plt.ylabel("AGE")

plt.grid()
plt.show()
```



```
import matplotlib.pyplot as plt
plt.hist(Testdata["Survived"],label="0=did not survive\n 1=survived",color="indigo")
plt.legend()
plt.xlabel("Survived")

plt.grid()
plt.show()
```