

# Data Analysis On Titanic Dataset

```
In [13]: import pandas as pd
import matplotlib as plt
%matplotlib inline
```

```
In [14]: df=pd.read_csv("E:\\DATA SCIENCE\\Project\\python\\titanic.csv")
```

```
In [66]: df.head(50)
```

Out[66]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	8.2500	B96 B98
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	72.2833	C85
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	8.9250	B96 B98
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	54.1000	C123
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	9.0500	B96 B98
5	6	0	3	Moran, Mr. James	male	NaN	0	0	330877	9.4583	B96 B98
6	7	0	1	McCarthy, Mr. Timothy J	male	54.0	0	0	17463	52.8625	E46
7	8	0	3	Palsson, Master. Gosta Leonard	male	2.0	3	1	349909	22.0750	B96 B98
8	9	1	3	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	female	27.0	0	2	347742	12.1333	B96 B98
9	10	1	2	Nasser, Mrs. Nicholas (Adele Achem)	female	14.0	1	0	237736	31.0708	B96 B98

PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	
10	11	1	3	Sandstrom, Miss. Marguerite Rut	female	4.0	1	1	PP 9549	17.7000	G6
11	12	1	1	Bonnell, Miss. Elizabeth	female	58.0	0	0	113783	27.5500	C103
12	13	0	3	Saundercock, Mr. William Henry	male	20.0	0	0	A/5. 2151	9.0500	B96 B98
13	14	0	3	Andersson, Mr. Anders Johan	male	39.0	1	5	347082	32.2750	B96 B98
14	15	0	3	Vestrom, Miss. Hulda Amanda Adolfina	female	14.0	0	0	350406	8.8542	B96 B98
15	16	1	2	Hewlett, Mrs. (Mary D Kingcome)	female	55.0	0	0	248706	17.0000	B96 B98
16	17	0	3	Rice, Master. Eugene	male	2.0	4	1	382652	30.1250	B96 B98
17	18	1	2	Williams, Mr. Charles Eugene	male	NaN	0	0	244373	14.0000	B96 B98
18	19	0	3	Vander Planke, Mrs. Julius (Emelia Maria Vande...	female	31.0	1	0	345763	19.0000	B96 B98
19	20	1	3	Masselmani, Mrs. Fatima	female	NaN	0	0	2649	8.2250	B96 B98
20	21	0	2	Fynney, Mr. Joseph J	male	35.0	0	0	239865	27.0000	B96 B98
21	22	1	2	Beesley, Mr. Lawrence	male	34.0	0	0	248698	14.0000	D56
22	23	1	3	McGowan, Miss. Anna "Annie"	female	15.0	0	0	330923	9.0292	B96 B98
23	24	1	1	Sloper, Mr. William Thompson	male	28.0	0	0	113788	36.5000	A6
24	25	0	3	Palsson, Miss. Torborg Danira	female	8.0	3	1	349909	22.0750	B96 B98

PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	
25	26	1	3	Asplund, Mrs. Carl Oscar (Selma Augusta Emilia...	female	38.0	1	5	347077	32.3875	B96 B98
26	27	0	3	Emir, Mr. Farred Chehab	male	NaN	0	0	2631	8.2250	B96 B98
27	28	0	1	Fortune, Mr. Charles Alexander	male	19.0	3	2	19950	264.0000	C23 C25 C27
28	29	1	3	O'Dwyer, Miss. Ellen "Nellie"	female	NaN	0	0	330959	8.8792	B96 B98
29	30	0	3	Todoroff, Mr. Lallo	male	NaN	0	0	349216	8.8958	B96 B98
30	31	0	1	Uruchurtu, Don. Manuel E	male	40.0	0	0	PC 17601	28.7208	B96 B98
31	32	1	1	Spencer, Mrs. William Augustus (Marie Eugenie)	female	NaN	1	0	PC 17569	147.5208	B78
32	33	1	3	Glynn, Miss. Mary Agatha	female	NaN	0	0	335677	8.7500	B96 B98
33	34	0	2	Wheadon, Mr. Edward H	male	66.0	0	0	C.A. 24579	11.5000	B96 B98
34	35	0	1	Meyer, Mr. Edgar Joseph	male	28.0	1	0	PC 17604	83.1708	B96 B98
35	36	0	1	Holverson, Mr. Alexander Oskar	male	42.0	1	0	113789	53.0000	B96 B98
36	37	1	3	Mamee, Mr. Hanna	male	NaN	0	0	2677	8.2292	B96 B98
37	38	0	3	Cann, Mr. Ernest Charles	male	21.0	0	0	A./5. 2152	9.0500	B96 B98
38	39	0	3	Vander Planke, Miss. Augusta Maria	female	18.0	2	0	345764	19.0000	B96 B98
39	40	1	3	Nicola-Yarred, Miss. Jamila	female	14.0	1	0	2651	12.2417	B96 B98

PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	
40	41	0	3	Ahlin, Mrs. Johan (Johanna Persdotter Larsson)	female	40.0	1	0	7546	10.4750	B96 B98
41	42	0	2	Turpin, Mrs. William John Robert (Dorothy Ann ...)	female	27.0	1	0	11668	22.0000	B96 B98
42	43	0	3	Kraeff, Mr. Theodor	male	NaN	0	0	349253	8.8958	B96 B98
43	44	1	2	Laroche, Miss. Simonne Marie Anne Andree	female	3.0	1	2	SC/Paris 2123	42.5792	B96 B98
44	45	1	3	Devaney, Miss. Margaret Delia	female	19.0	0	0	330958	8.8792	B96 B98
45	46	0	3	Rogers, Mr. William John	male	NaN	0	0	S.C./A.4. 23567	9.0500	B96 B98
46	47	0	3	Lennon, Mr. Denis	male	NaN	1	0	370371	16.5000	B96 B98
47	48	1	3	O'Driscoll, Miss. Bridget	female	NaN	0	0	14311	8.7500	B96 B98
48	49	0	3	Samaan, Mr. Youssef	male	NaN	2	0	2662	22.6792	B96 B98
49	50	0	3	Arnold-Franchi, Mrs. Josef (Josefine Franchi)	female	18.0	1	0	349237	18.8000	B96 B98

# PRINTING THE COMPLETE DETAILS

```
In [11]: df.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
```

## PRINTING THE COLUMNS

```
In [21]: for col in df.columns:
         print(col)
```

```
PassengerId
Survived
Pclass
Name
Sex
Age
SibSp
Parch
Ticket
Fare
Cabin
Embarked
```

## PRINTING THE MODE OF AGE

```
In [26]: df.Age.mode()
```

```
Out[26]: 0    24.0
dtype: float64
```

## PRINTING THE MEAN OF AGE

```
In [29]: df.Age.mean()
```

```
Out[29]: 29.69911764705882
```

## PRINTING THE MEDIAN OF AGE

```
In [30]: df.Age.median()
```

```
Out[30]: 28.0
```

## PRINTING THE UNIQUE AGE

```
In [32]: df.Age.unique()
```

```
Out[32]: array([22. , 38. , 26. , 35. , nan, 54. , 2. , 27. , 14. ,
        4. , 58. , 20. , 39. , 55. , 31. , 34. , 15. , 28. ,
        8. , 19. , 40. , 66. , 42. , 21. , 18. , 3. , 7. ,
        49. , 29. , 65. , 28.5 , 5. , 11. , 45. , 17. , 32. ,
        16. , 25. , 0.83, 30. , 33. , 23. , 24. , 46. , 59. ,
        71. , 37. , 47. , 14.5 , 70.5 , 32.5 , 12. , 9. , 36.5 ,
        51. , 55.5 , 40.5 , 44. , 1. , 61. , 56. , 50. , 36. ,
        45.5 , 20.5 , 62. , 41. , 52. , 63. , 23.5 , 0.92, 43. ,
        60. , 10. , 64. , 13. , 48. , 0.75, 53. , 57. , 80. ,
        70. , 24.5 , 6. , 0.67, 30.5 , 0.42, 34.5 , 74. ])
```

## PRINTING THE COUNT OF NULL VALUES IN AGE COLUMN

```
In [36]: df.Age.isnull().count()
```

```
Out[36]: 891
```

## PRINTING THE COUNT OF NULL VALUES IN AGE COLUMN

```
In [40]: df.Age.count()
```

```
Out[40]: 714
```

## PRINTING THE MAXIMUM VALUE OF EACH COLUMN

```
In [41]: df.max()
```

C:\Users\Pooja\AppData\Local\Temp\ipykernel\_11188\1151452817.py:1: FutureWarning: Dropping of nuisance columns in DataFrame reductions (with 'numeric\_only=None') is deprecated; in a future version this will raise TypeError. Select only valid columns before calling the reduction.

```
df.max()
```

```
Out[41]: PassengerId      891
Survived                1
Pclass                 3
Name      van Melkebeke, Mr. Philemon
Sex                male
Age              80.0
SibSp              8
Parch              6
```

Ticket  
Fare  
dtype: object

WE/P 5735  
512.3292

## PRINTING THE MINIMUM VALUE IN EACH COLUMN

In [42]: `df.min()`

C:\Users\Pooja\AppData\Local\Temp\ipykernel\_11188\3962516015.py:1: FutureWarning: Dropping of nuisance columns in DataFrame reductions (with 'numeric\_only=None') is deprecated; in a future version this will raise TypeError. Select only valid columns before calling the reduction.

`df.min()`

Out[42]:

PassengerId	1
Survived	0
Pclass	1
Name	Abbing, Mr. Anthony
Sex	female
Age	0.42
SibSp	0
Parch	0
Ticket	110152
Fare	0.0

dtype: object

## PRINTING THE SUM OF NULL VALUES IN EACH COLUMN

In [44]: `df.isnull().sum()`

Out[44]:

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

## PRINTING THE COUNT OF NULL VALUE IN EACH COLUMN

In [45]: `df.isnull().count()`

```
Out[45]: PassengerId    891
Survived      891
Pclass        891
Name          891
Sex           891
Age           891
SibSp         891
Parch         891
Ticket        891
Fare          891
Cabin         891
Embarked      891
dtype: int64
```

## PRINTING THE MAXIMUM FARE PAID BY EACH CUSTOMER

```
In [58]: df.groupby('Name').max('Fare')
```

```
Out[58]:
```

	PassengerId	Survived	Pclass	Age	SibSp	Parch	Fare
<b>Name</b>							
<b>Abbing, Mr. Anthony</b>	846	0	3	42.0	0	0	7.5500
<b>Abbott, Mr. Rossmore Edward</b>	747	0	3	16.0	1	1	20.2500
<b>Abbott, Mrs. Stanton (Rosa Hunt)</b>	280	1	3	35.0	1	1	20.2500
<b>Abelson, Mr. Samuel</b>	309	0	2	30.0	1	0	24.0000
<b>Abelson, Mrs. Samuel (Hannah Witosky)</b>	875	1	2	28.0	1	0	24.0000
...	...	...	...	...	...	...	...
<b>de Mulder, Mr. Theodore</b>	287	1	3	30.0	0	0	9.5000
<b>de Pelsmaecker, Mr. Alfons</b>	283	0	3	16.0	0	0	9.5000
<b>del Carlo, Mr. Sebastiano</b>	362	0	2	29.0	1	0	27.7208
<b>van Billiard, Mr. Austin Blyler</b>	154	0	3	40.5	0	2	14.5000
<b>van Melkebeke, Mr. Philemon</b>	869	0	3	NaN	0	0	9.5000

891 rows × 7 columns

## FINDING THE UNIQUE VALUES FROM COLUMN : SEX

```
In [69]: df.Sex.unique()
```

```
Out[69]: array(['male', 'female'], dtype=object)
```



# Describe : Count | Unique | Top | Frequency of Name & Age column

In [71]: `df.Name.describe()`

```
Out[71]: count                891
unique                891
top      Braund, Mr. Owen Harris
freq                1
Name: Name, dtype: object
```

In [72]: `df.Age.describe()`

```
Out[72]: count      714.000000
mean      29.699118
std       14.526497
min        0.420000
25%       20.125000
50%       28.000000
75%       38.000000
max       80.000000
Name: Age, dtype: float64
```

## Displaying and counting all the Categorical value of categorical column : name

In [74]: `df.Name.unique()`

```
Out[74]: array(['Braund, Mr. Owen Harris',
      'Cumings, Mrs. John Bradley (Florence Briggs Thayer)',
      'Heikkinen, Miss. Laina',
      'Futrelle, Mrs. Jacques Heath (Lily May Peel)',
      'Allen, Mr. William Henry', 'Moran, Mr. James',
      'McCarthy, Mr. Timothy J', 'Palsson, Master. Gosta Leonard',
      'Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)',
      'Nasser, Mrs. Nicholas (Adele Achem)',
      'Sandstrom, Miss. Marguerite Rut', 'Bonnell, Miss. Elizabeth',
      'Saunderscock, Mr. William Henry', 'Andersson, Mr. Anders Johan',
      'Vestrom, Miss. Hulda Amanda Adolfina',
      'Hewlett, Mrs. (Mary D Kingcome) ', 'Rice, Master. Eugene',
      'Williams, Mr. Charles Eugene',
      'Vander Planke, Mrs. Julius (Emelia Maria Vandemoortele)',
      'Masselmani, Mrs. Fatima', 'Fynney, Mr. Joseph J',
      'Beesley, Mr. Lawrence', 'McGowan, Miss. Anna "Annie"',
      'Sloper, Mr. William Thompson', 'Palsson, Miss. Torborg Danira',
      'Asplund, Mrs. Carl Oscar (Selma Augusta Emilia Johansson)',
      'Emir, Mr. Farred Chehab', 'Fortune, Mr. Charles Alexander',
      'O'Dwyer, Miss. Ellen "Nellie"', 'Todoroff, Mr. Lalio',
      'Uruchurtu, Don. Manuel E',
      'Spencer, Mrs. William Augustus (Marie Eugenie)',
      'Glynn, Miss. Mary Agatha', 'Wheadon, Mr. Edward H',
      'Meyer, Mr. Edgar Joseph', 'Holverson, Mr. Alexander Oskar',
      'Mamee, Mr. Hanna', 'Cann, Mr. Ernest Charles',
      'Vander Planke, Miss. Augusta Maria',
```

'Nicola-Yarred, Miss. Jamila',  
'Ahlin, Mrs. Johan (Johanna Persdotter Larsson)',  
'Turpin, Mrs. William John Robert (Dorothy Ann Wonnacott)',  
'Kraeff, Mr. Theodor', 'Laroche, Miss. Simonne Marie Anne Andree',  
'Devaney, Miss. Margaret Delia', 'Rogers, Mr. William John',  
'Lennon, Mr. Denis', 'O'Driscoll, Miss. Bridget',  
'Samaan, Mr. Youssef',  
'Arnold-Franchi, Mrs. Josef (Josefine Franchi)',  
'Panula, Master. Juha Niilo', 'Nosworthy, Mr. Richard Cater',  
'Harper, Mrs. Henry Sleeper (Myna Haxtun)',  
'Faunthorpe, Mrs. Lizzie (Elizabeth Anne Wilkinson)',  
'Ostby, Mr. Engelhart Cornelius', 'Woolner, Mr. Hugh',  
'Rugg, Miss. Emily', 'Novel, Mr. Mansouer',  
'West, Miss. Constance Mirium',  
'Goodwin, Master. William Frederick', 'Sirayanian, Mr. Orsen',  
'Icard, Miss. Amelie', 'Harris, Mr. Henry Birkhardt',  
'Skoog, Master. Harald', 'Stewart, Mr. Albert A',  
'Moubarek, Master. Gerios', 'Nye, Mrs. (Elizabeth Ramell)',  
'Crease, Mr. Ernest James', 'Andersson, Miss. Erna Alexandra',  
'Kink, Mr. Vincenz', 'Jenkin, Mr. Stephen Curnow',  
'Goodwin, Miss. Lillian Amy', 'Hood, Mr. Ambrose Jr',  
'Chronopoulos, Mr. Apostolos', 'Bing, Mr. Lee',  
'Moen, Mr. Sigurd Hansen', 'Staneff, Mr. Ivan',  
'Moutal, Mr. Rahamin Haim', 'Caldwell, Master. Alden Gates',  
'Dowdell, Miss. Elizabeth', 'Waelens, Mr. Achille',  
'Sheerlinck, Mr. Jan Baptist', 'McDermott, Miss. Brigdet Delia',  
'Carrau, Mr. Francisco M', 'Ilett, Miss. Bertha',  
'Backstrom, Mrs. Karl Alfred (Maria Mathilda Gustafsson)',  
'Ford, Mr. William Neal', 'Slocovski, Mr. Selman Francis',  
'Fortune, Miss. Mabel Helen', 'Celotti, Mr. Francesco',  
'Christmann, Mr. Emil', 'Andreasson, Mr. Paul Edvin',  
'Chaffee, Mr. Herbert Fuller', 'Dean, Mr. Bertram Frank',  
'Coxon, Mr. Daniel', 'Shorney, Mr. Charles Joseph',  
'Goldschmidt, Mr. George B', 'Greenfield, Mr. William Bertram',  
'Doling, Mrs. John T (Ada Julia Bone)', 'Kantor, Mr. Sinai',  
'Petranec, Miss. Matilda', 'Petroff, Mr. Pastcho ("Pentcho")',  
'White, Mr. Richard Frasar', 'Johansson, Mr. Gustaf Joel',  
'Gustafsson, Mr. Anders Vilhelm', 'Mionoff, Mr. Stoytcho',  
'Salkjelsvik, Miss. Anna Kristine', 'Moss, Mr. Albert Johan',  
'Rekic, Mr. Tido', 'Moran, Miss. Bertha',  
'Porter, Mr. Walter Chamberlain', 'Zabour, Miss. Hileni',  
'Barton, Mr. David John', 'Jussila, Miss. Katriina',  
'Attalah, Miss. Malake', 'Pekoniemi, Mr. Edvard',  
'Connors, Mr. Patrick', 'Turpin, Mr. William John Robert',  
'Baxter, Mr. Quigg Edmond', 'Andersson, Miss. Ellis Anna Maria',  
'Hickman, Mr. Stanley George', 'Moore, Mr. Leonard Charles',  
'Nasser, Mr. Nicholas', 'Webber, Miss. Susan',  
'White, Mr. Percival Wayland', 'Nicola-Yarred, Master. Elias',  
'McMahon, Mr. Martin', 'Madsen, Mr. Fridtjof Arne',  
'Peter, Miss. Anna', 'Ekstrom, Mr. Johan', 'Drazenoic, Mr. Jozef',  
'Coelho, Mr. Domingos Fernandeo',  
'Robins, Mrs. Alexander A (Grace Charity Laury)',  
'Weisz, Mrs. Leopold (Mathilde Francoise Pede)',  
'Sobey, Mr. Samuel James Hayden', 'Richard, Mr. Emile',  
'Newsom, Miss. Helen Monypeny', 'Futrelle, Mr. Jacques Heath',  
'Osen, Mr. Olaf Elon', 'Giglio, Mr. Victor',  
'Boulos, Mrs. Joseph (Sultana)', 'Nysten, Miss. Anna Sofia',  
'Hakkarainen, Mrs. Pekka Pietari (Elin Matilda Dolck)',  
'Burke, Mr. Jeremiah', 'Andrew, Mr. Edgardo Samuel',  
'Nicholls, Mr. Joseph Charles',

'Andersson, Mr. August Edvard ("Wennerstrom")',  
 'Ford, Miss. Robina Maggie "Ruby"',  
 'Navratil, Mr. Michel ("Louis M Hoffman")',  
 'Byles, Rev. Thomas Roussel Davids', 'Bateman, Rev. Robert James',  
 'Pears, Mrs. Thomas (Edith Wearne)', 'Meo, Mr. Alfonzo',  
 'van Billiard, Mr. Austin Blyler', 'Olsen, Mr. Ole Martin',  
 'Williams, Mr. Charles Duane', 'Gilnagh, Miss. Katherine "Katie"',  
 'Corn, Mr. Harry', 'Smiljanic, Mr. Mile',  
 'Sage, Master. Thomas Henry', 'Cribb, Mr. John Hatfield',  
 'Watt, Mrs. James (Elizabeth "Bessie" Inglis Milne)',  
 'Bengtsson, Mr. John Viktor', 'Calic, Mr. Jovo',  
 'Panula, Master. Eino Viljami',  
 'Goldsmith, Master. Frank John William "Frankie"',  
 'Chibnall, Mrs. (Edith Martha Bowerman)',  
 'Skoog, Mrs. William (Anna Bernhardina Karlsson)',  
 'Baumann, Mr. John D', 'Ling, Mr. Lee',  
 'Van der hoef, Mr. Wyckoff', 'Rice, Master. Arthur',  
 'Johnson, Miss. Eleanor Ileen', 'Sivola, Mr. Antti Wilhelm',  
 'Smith, Mr. James Clinch', 'Klasen, Mr. Klas Albin',  
 'Lefebvre, Master. Henry Forbes', 'Isham, Miss. Ann Elizabeth',  
 'Hale, Mr. Reginald', 'Leonard, Mr. Lionel',  
 'Sage, Miss. Constance Gladys', 'Pernot, Mr. Rene',  
 'Asplund, Master. Clarence Gustaf Hugo',  
 'Becker, Master. Richard F', 'Kink-Heilmann, Miss. Luise Gretchen',  
 'Rood, Mr. Hugh Roscoe',  
 'O'Brien, Mrs. Thomas (Johanna "Hannah" Godfrey)',  
 'Romaine, Mr. Charles Hallace ("Mr C Rolmane")',  
 'Bourke, Mr. John', 'Turcin, Mr. Stjepan', 'Pinsky, Mrs. (Rosa)',  
 'Carbines, Mr. William',  
 'Andersen-Jensen, Miss. Carla Christine Nielsine',  
 'Navratil, Master. Michel M',  
 'Brown, Mrs. James Joseph (Margaret Tobin)',  
 'Lurette, Miss. Elise', 'Mernagh, Mr. Robert',  
 'Olsen, Mr. Karl Siegwart Andreas',  
 'Madigan, Miss. Margaret "Maggie"',  
 'Yrois, Miss. Henriette ("Mrs Harbeck")',  
 'Vande Walle, Mr. Nestor Cyriel', 'Sage, Mr. Frederick',  
 'Johanson, Mr. Jakob Alfred', 'Youseff, Mr. Gerious',  
 'Cohen, Mr. Gurshon "Gus"', 'Strom, Miss. Telma Matilda',  
 'Backstrom, Mr. Karl Alfred', 'Albimona, Mr. Nassef Cassem',  
 'Carr, Miss. Helen "Ellen"', 'Blank, Mr. Henry', 'Ali, Mr. Ahmed',  
 'Cameron, Miss. Clear Annie', 'Perkin, Mr. John Henry',  
 'Givard, Mr. Hans Kristensen', 'Kiernan, Mr. Philip',  
 'Newell, Miss. Madeleine', 'Honkanen, Miss. Eliina',  
 'Jacobsohn, Mr. Sidney Samuel', 'Bazzani, Miss. Albina',  
 'Harris, Mr. Walter', 'Sunderland, Mr. Victor Francis',  
 'Bracken, Mr. James H', 'Green, Mr. George Henry',  
 'Nenkoff, Mr. Christo', 'Hoyt, Mr. Frederick Maxfield',  
 'Berglund, Mr. Karl Ivar Sven', 'Mellors, Mr. William John',  
 'Lovell, Mr. John Hall ("Henry")', 'Fahlstrom, Mr. Arne Jonas',  
 'Lefebvre, Miss. Mathilde',  
 'Harris, Mrs. Henry Birkhardt (Irene Wallach)',  
 'Larsson, Mr. Bengt Edvin', 'Sjostedt, Mr. Ernst Adolf',  
 'Asplund, Miss. Lillian Gertrud',  
 'Leyson, Mr. Robert William Norman',  
 'Harknett, Miss. Alice Phoebe', 'Hold, Mr. Stephen',  
 'Collyer, Miss. Marjorie "Lottie"',  
 'Pengelly, Mr. Frederick William', 'Hunt, Mr. George Henry',  
 'Zabour, Miss. Thamine', 'Murphy, Miss. Katherine "Kate"',  
 'Coleridge, Mr. Reginald Charles', 'Maenpaa, Mr. Matti Alexanteri',

'Attalah, Mr. Sleiman', 'Minahan, Dr. William Edward',  
 'Lindahl, Miss. Agda Thorilda Viktoria',  
 'Hamalainen, Mrs. William (Anna)', 'Beckwith, Mr. Richard Leonard',  
 'Carter, Rev. Ernest Courtenay', 'Reed, Mr. James George',  
 'Strom, Mrs. Wilhelm (Elna Matilda Persson)',  
 'Stead, Mr. William Thomas', 'Lobb, Mr. William Arthur',  
 'Rosblom, Mrs. Viktor (Helena Wilhelmina)',  
 'Touma, Mrs. Darwis (Hanne Youssef Razi)',  
 'Thorne, Mrs. Gertrude Maybelle', 'Cherry, Miss. Gladys',  
 'Ward, Miss. Anna', 'Parrish, Mrs. (Lutie Davis)',  
 'Smith, Mr. Thomas', 'Asplund, Master. Edvin Rojj Felix',  
 'Taussig, Mr. Emil', 'Harrison, Mr. William', 'Henry, Miss. Delia',  
 'Reeves, Mr. David', 'Panula, Mr. Ernesti Arvid',  
 'Persson, Mr. Ernst Ulrik',  
 'Graham, Mrs. William Thompson (Edith Junkins)',  
 'Bissette, Miss. Amelia', 'Cairns, Mr. Alexander',  
 'Tornquist, Mr. William Henry',  
 'Mellinger, Mrs. (Elizabeth Anne Maidment)',  
 'Natsch, Mr. Charles H', 'Healy, Miss. Hanora "Nora"',  
 'Andrews, Miss. Kornelia Theodosia',  
 'Lindblom, Miss. Augusta Charlotta', 'Parkes, Mr. Francis "Frank"',  
 'Rice, Master. Eric', 'Abbott, Mrs. Stanton (Rosa Hunt)',  
 'Duane, Mr. Frank', 'Olsson, Mr. Nils Johan Goransson',  
 'de Pelsmaeker, Mr. Alfons', 'Dorking, Mr. Edward Arthur',  
 'Smith, Mr. Richard William', 'Stankovic, Mr. Ivan',  
 'de Mulder, Mr. Theodore', 'Naidenoff, Mr. Penko',  
 'Hosono, Mr. Masabumi', 'Connolly, Miss. Kate',  
 'Barber, Miss. Ellen "Nellie"',  
 'Bishop, Mrs. Dickinson H (Helen Walton)',  
 'Levy, Mr. Rene Jacques', 'Haas, Miss. Aloisia',  
 'Mineff, Mr. Ivan', 'Lewy, Mr. Ervin G', 'Hanna, Mr. Mansour',  
 'Allison, Miss. Helen Loraine', 'Saalfeld, Mr. Adolphe',  
 'Baxter, Mrs. James (Helene DeLaudeniére Chaput)',  
 'Kelly, Miss. Anna Katherine "Annie Kate"', 'McCoy, Mr. Bernard',  
 'Johnson, Mr. William Cahoone Jr', 'Keane, Miss. Nora A',  
 'Williams, Mr. Howard Hugh "Harry"',  
 'Allison, Master. Hudson Trevor', 'Fleming, Miss. Margaret',  
 'Penasco y Castellana, Mrs. Victor de Satode (Maria Josefa Perez de Soto y Vallejo)',  
 'Abelson, Mr. Samuel', 'Francatelli, Miss. Laura Mabel',  
 'Hays, Miss. Margaret Bechstein', 'Ryerson, Miss. Emily Borie',  
 'Lahtinen, Mrs. William (Anna Sylfven)', 'Hendekovic, Mr. Ignjac',  
 'Hart, Mr. Benjamin', 'Nilsson, Miss. Helmina Josefina',  
 'Kantor, Mrs. Sinai (Miriam Sternin)', 'Moraweck, Dr. Ernest',  
 'Wick, Miss. Mary Natalie',  
 'Spedden, Mrs. Frederic Oakley (Margaretta Corning Stone)',  
 'Dennis, Mr. Samuel', 'Danoff, Mr. Yoto',  
 'Slayter, Miss. Hilda Mary',  
 'Caldwell, Mrs. Albert Francis (Sylvia Mae Harbaugh)',  
 'Sage, Mr. George John Jr', 'Young, Miss. Marie Grice',  
 'Nysveen, Mr. Johan Hansen', 'Ball, Mrs. (Ada E Hall)',  
 'Goldsmith, Mrs. Frank John (Emily Alice Brown)',  
 'Hippach, Miss. Jean Gertrude', 'McCoy, Miss. Agnes',  
 'Partner, Mr. Austen', 'Graham, Mr. George Edward',  
 'Vander Planke, Mr. Leo Edmondus',  
 'Frauenthal, Mrs. Henry William (Clara Heinsheimer)',  
 'Denkoff, Mr. Mitto', 'Pears, Mr. Thomas Clinton',  
 'Burns, Miss. Elizabeth Margaret', 'Dahl, Mr. Karl Edwart',  
 'Blackwell, Mr. Stephen Weart', 'Navratil, Master. Edmond Roger',  
 'Fortune, Miss. Alice Elizabeth', 'Collander, Mr. Erik Gustaf',

'Sedgwick, Mr. Charles Frederick Waddington',  
'Fox, Mr. Stanley Hubert', 'Brown, Miss. Amelia "Mildred"',  
'Smith, Miss. Marion Elsie',  
'Davison, Mrs. Thomas Henry (Mary E Finck)',  
'Coutts, Master. William Loch "William"', 'Dimic, Mr. Jovan',  
'Odahl, Mr. Nils Martin', 'Williams-Lambert, Mr. Fletcher Fellows',  
'Elias, Mr. Tannous', 'Arnold-Franchi, Mr. Josef',  
'Yousif, Mr. Wazli', 'Vanden Steen, Mr. Leo Peter',  
'Bowerman, Miss. Elsie Edith', 'Funk, Miss. Annie Clemmer',  
'McGovern, Miss. Mary', 'Mockler, Miss. Helen Mary "Ellie"',  
'Skoog, Mr. Wilhelm', 'del Carlo, Mr. Sebastiano',  
'Barbara, Mrs. (Catherine David)', 'Asim, Mr. Adola',  
'O'Brien, Mr. Thomas', 'Adahl, Mr. Mauritz Nils Martin',  
'Warren, Mrs. Frank Manley (Anna Sophia Atkinson)',  
'Moussa, Mrs. (Mantoura Boulos)', 'Jermyn, Miss. Annie',  
'Aubart, Mme. Leontine Pauline', 'Harder, Mr. George Achilles',  
'Wiklund, Mr. Jakob Alfred', 'Beavan, Mr. William Thomas',  
'Ringhini, Mr. Sante', 'Palsson, Miss. Stina Viola',  
'Meyer, Mrs. Edgar Joseph (Leila Saks)',  
'Landergrén, Miss. Aurora Adelia', 'Widener, Mr. Harry Elkins',  
'Betros, Mr. Tannous', 'Gustafsson, Mr. Karl Gideon',  
'Bidois, Miss. Rosalie', 'Nakid, Miss. Maria ("Mary")',  
'Tikkanen, Mr. Juho',  
'Holverson, Mrs. Alexander Oskar (Mary Aline Towner)',  
'Plotcharsky, Mr. Vasil', 'Davies, Mr. Charles Henry',  
'Goodwin, Master. Sidney Leonard', 'Buss, Miss. Kate',  
'Sadlier, Mr. Matthew', 'Lehmann, Miss. Bertha',  
'Carter, Mr. William Ernest', 'Jansson, Mr. Carl Olof',  
'Gustafsson, Mr. Johan Birger', 'Newell, Miss. Marjorie',  
'Sandstrom, Mrs. Hjalmar (Agnes Charlotta Bengtsson)',  
'Johansson, Mr. Erik', 'Olsson, Miss. Elina',  
'McKane, Mr. Peter David', 'Pain, Dr. Alfred',  
'Trout, Mrs. William H (Jessie L)', 'Niskanen, Mr. Juha',  
'Adams, Mr. John', 'Jussila, Miss. Mari Aina',  
'Hakkarainen, Mr. Pekka Pietari', 'Oreskovic, Miss. Marija',  
'Gale, Mr. Shadrach', 'Widegren, Mr. Carl/Charles Peter',  
'Richards, Master. William Rowe',  
'Birkeland, Mr. Hans Martin Monsen', 'Lefebvre, Miss. Ida',  
'Sdycoff, Mr. Todor', 'Hart, Mr. Henry', 'Minahan, Miss. Daisy E',  
'Cunningham, Mr. Alfred Fleming', 'Sundman, Mr. Johan Julian',  
'Meek, Mrs. Thomas (Annie Louise Rowley)',  
'Drew, Mrs. James Vivian (Lulu Thorne Christian)',  
'Silven, Miss. Lyyli Karoliina', 'Matthews, Mr. William John',  
'Van Impe, Miss. Catharina', 'Gheorgheff, Mr. Stanio',  
'Charters, Mr. David', 'Zimmerman, Mr. Leo',  
'Danbom, Mrs. Ernst Gilbert (Anna Sigrid Maria Brogren)',  
'Rosblom, Mr. Viktor Richard', 'Wiseman, Mr. Phillippe',  
'Clarke, Mrs. Charles V (Ada Maria Winfield)',  
'Phillips, Miss. Kate Florence ("Mrs Kate Louise Phillips Marshall")',  
'Flynn, Mr. James', 'Pickard, Mr. Berk (Berk Trembisky)',  
'Bjornstrom-Steffansson, Mr. Mauritz Hakan',  
'Thorneycroft, Mrs. Percival (Florence Kate White)',  
'Louch, Mrs. Charles Alexander (Alice Adelaide Slow)',  
'Kallio, Mr. Nikolai Erland', 'Silvey, Mr. William Baird',  
'Carter, Miss. Lucile Polk',  
'Ford, Miss. Doolina Margaret "Daisy"',  
'Richards, Mrs. Sidney (Emily Hocking)', 'Fortune, Mr. Mark',  
'Kvillner, Mr. Johan Henrik Johannesson',  
'Hart, Mrs. Benjamin (Esther Ada Bloomfield)', 'Hampe, Mr. Leon',  
'Petterson, Mr. Johan Emil', 'Reynaldo, Ms. Encarnacion',

'Johannesen-Bratthammer, Mr. Bernt', 'Dodge, Master. Washington',  
 'Mellinger, Miss. Madeleine Violet', 'Seward, Mr. Frederic Kimber',  
 'Baclini, Miss. Marie Catherine', 'Peuchen, Major. Arthur Godfrey',  
 'West, Mr. Edwy Arthur', 'Hagland, Mr. Ingvald Olai Olsen',  
 'Foreman, Mr. Benjamin Laventall', 'Goldenberg, Mr. Samuel L',  
 'Peduzzi, Mr. Joseph', 'Jalsevac, Mr. Ivan',  
 'Millet, Mr. Francis Davis', 'Kenyon, Mrs. Frederick R (Marion)',  
 'Toomey, Miss. Ellen', 'O'Connor, Mr. Maurice',  
 'Anderson, Mr. Harry', 'Morley, Mr. William', 'Gee, Mr. Arthur H',  
 'Milling, Mr. Jacob Christian', 'Maisner, Mr. Simon',  
 'Goncalves, Mr. Manuel Estanslas', 'Campbell, Mr. William',  
 'Smart, Mr. John Montgomery', 'Scanlan, Mr. James',  
 'Baclini, Miss. Helene Barbara', 'Keefe, Mr. Arthur',  
 'Cacic, Mr. Luka', 'West, Mrs. Edwy Arthur (Ada Mary Worth)',  
 'Jerwan, Mrs. Amin S (Marie Marthe Thuillard)',  
 'Strandberg, Miss. Ida Sofia', 'Clifford, Mr. George Quincy',  
 'Renouf, Mr. Peter Henry', 'Braund, Mr. Lewis Richard',  
 'Karlsson, Mr. Nils August', 'Hirvonen, Miss. Hildur E',  
 'Goodwin, Master. Harold Victor',  
 'Frost, Mr. Anthony Wood "Archie"', 'Rouse, Mr. Richard Henry',  
 'Turkula, Mrs. (Hedwig)', 'Bishop, Mr. Dickinson H',  
 'Lefebvre, Miss. Jeannie',  
 'Hoyt, Mrs. Frederick Maxfield (Jane Anne Forby)',  
 'Kent, Mr. Edward Austin', 'Somerton, Mr. Francis William',  
 'Coutts, Master. Eden Leslie "Neville"',  
 'Hagland, Mr. Konrad Mathias Reiersen', 'Windelov, Mr. Einar',  
 'Molson, Mr. Harry Markland', 'Artagaveytia, Mr. Ramon',  
 'Stanley, Mr. Edward Roland', 'Yousseff, Mr. Gerious',  
 'Eustis, Miss. Elizabeth Mussey',  
 'Shellard, Mr. Frederick William',  
 'Allison, Mrs. Hudson J C (Bessie Waldo Daniels)',  
 'Svensson, Mr. Olof', 'Calic, Mr. Petar', 'Canavan, Miss. Mary',  
 'O'Sullivan, Miss. Bridget Mary', 'Laitinen, Miss. Kristina Sofia',  
 'Maioni, Miss. Roberta',  
 'Penasco y Castellana, Mr. Victor de Satode',  
 'Quick, Mrs. Frederick Charles (Jane Richards)',  
 'Bradley, Mr. George ("George Arthur Brayton")',  
 'Olsen, Mr. Henry Margido', 'Lang, Mr. Fang',  
 'Daly, Mr. Eugene Patrick', 'Webber, Mr. James',  
 'McGough, Mr. James Robert',  
 'Rothschild, Mrs. Martin (Elizabeth L. Barrett)',  
 'Coleff, Mr. Satio', 'Walker, Mr. William Anderson',  
 'Lemore, Mrs. (Amelia Milley)', 'Ryan, Mr. Patrick',  
 'Angle, Mrs. William A (Florence "Mary" Agnes Hughes)',  
 'Pavlovic, Mr. Stefo', 'Perreault, Miss. Anne', 'Vovk, Mr. Janko',  
 'Lahoud, Mr. Sarkis',  
 'Hippach, Mrs. Louis Albert (Ida Sophia Fischer)',  
 'Kassem, Mr. Fared', 'Farrell, Mr. James', 'Ridsdale, Miss. Lucy',  
 'Farthing, Mr. John', 'Salonen, Mr. Johan Werner',  
 'Hocking, Mr. Richard George', 'Quick, Miss. Phyllis May',  
 'Toufik, Mr. Nakli', 'Elias, Mr. Joseph Jr',  
 'Peter, Mrs. Catherine (Catherine Rizk)', 'Cacic, Miss. Marija',  
 'Hart, Miss. Eva Miriam', 'Butt, Major. Archibald Willingham',  
 'LeRoy, Miss. Bertha', 'Risien, Mr. Samuel Beard',  
 'Frolicher, Miss. Hedwig Margaritha', 'Crosby, Miss. Harriet R',  
 'Andersson, Miss. Ingeborg Constanzia',  
 'Andersson, Miss. Sigrid Elisabeth', 'Beane, Mr. Edward',  
 'Douglas, Mr. Walter Donald', 'Nicholson, Mr. Arthur Ernest',  
 'Beane, Mrs. Edward (Ethel Clarke)', 'Padro y Manent, Mr. Julian',  
 'Goldsmith, Mr. Frank John', 'Davies, Master. John Morgan Jr',

'Thayer, Mr. John Borland Jr', 'Sharp, Mr. Percival James R',  
'O'Brien, Mr. Timothy', 'Leeni, Mr. Fahim ("Philip Zenni")',  
'Ohman, Miss. Velin', 'Wright, Mr. George',  
'Duff Gordon, Lady. (Lucille Christiana Sutherland) ("Mrs Morgan")',  
'Robbins, Mr. Victor', 'Taussig, Mrs. Emil (Tillie Mandelbaum)',  
'de Messemaeker, Mrs. Guillaume Joseph (Emma)',  
'Morrow, Mr. Thomas Rowan', 'Sivic, Mr. Husein',  
'Norman, Mr. Robert Douglas', 'Simmons, Mr. John',  
'Meanwell, Miss. (Marion Ogden)', 'Davies, Mr. Alfred J',  
'Stoytcheff, Mr. Ilia',  
'Palsson, Mrs. Nils (Alma Cornelia Berglund)',  
'Doharr, Mr. Tannous', 'Jonsson, Mr. Carl', 'Harris, Mr. George',  
'Appleton, Mrs. Edward Dale (Charlotte Lamson)',  
'Flynn, Mr. John Irwin ("Irving")', 'Kelly, Miss. Mary',  
'Rush, Mr. Alfred George John', 'Patchett, Mr. George',  
'Garside, Miss. Ethel',  
'Silvey, Mrs. William Baird (Alice Munger)',  
'Caram, Mrs. Joseph (Maria Elias)', 'Jussila, Mr. Eiriik',  
'Christy, Miss. Julie Rachel',  
'Thayer, Mrs. John Borland (Marian Longstreth Morris)',  
'Downton, Mr. William James', 'Ross, Mr. John Hugo',  
'Paulner, Mr. Uscher', 'Taussig, Miss. Ruth',  
'Jarvis, Mr. John Denzil', 'Frolicher-Stehli, Mr. Maxmillian',  
'Gilinski, Mr. Eliezer', 'Murdlin, Mr. Joseph',  
'Rintamaki, Mr. Matti',  
'Stephenson, Mrs. Walter Bertram (Martha Eustis)',  
'Elsbury, Mr. William James', 'Bourke, Miss. Mary',  
'Chapman, Mr. John Henry', 'Van Impe, Mr. Jean Baptiste',  
'Leitch, Miss. Jessie Wills', 'Johnson, Mr. Alfred',  
'Boulos, Mr. Hanna',  
'Duff Gordon, Sir. Cosmo Edmund ("Mr Morgan")',  
'Jacobsohn, Mrs. Sidney Samuel (Amy Frances Christy)',  
'Slabenoff, Mr. Petco', 'Harrington, Mr. Charles H',  
'Torber, Mr. Ernst William', 'Homer, Mr. Harry ("Mr E Haven")',  
'Lindell, Mr. Edvard Bengtsson', 'Karaic, Mr. Milan',  
'Daniel, Mr. Robert Williams',  
'Laroche, Mrs. Joseph (Juliette Marie Louise Lafargue)',  
'Shutes, Miss. Elizabeth W',  
'Andersson, Mrs. Anders Johan (Alfrida Konstantia Brogren)',  
'Jardin, Mr. Jose Neto', 'Murphy, Miss. Margaret Jane',  
'Horgan, Mr. John', 'Brocklebank, Mr. William Alfred',  
'Herman, Miss. Alice', 'Danbom, Mr. Ernst Gilbert',  
'Lobb, Mrs. William Arthur (Cordelia K Stanlick)',  
'Becker, Miss. Marion Louise', 'Gavey, Mr. Lawrence',  
'Yasbeck, Mr. Antoni', 'Kimball, Mr. Edwin Nelson Jr',  
'Nakid, Mr. Sahid', 'Hansen, Mr. Henry Damsgaard',  
'Bowen, Mr. David John "Dai"', 'Sutton, Mr. Frederick',  
'Kirkland, Rev. Charles Leonard', 'Longley, Miss. Gretchen Fiske',  
'Bostandyeff, Mr. Guentcho', 'O'Connell, Mr. Patrick D',  
'Barkworth, Mr. Algernon Henry Wilson',  
'Lundahl, Mr. Johan Svensson', 'Stahelin-Maeglin, Dr. Max',  
'Parr, Mr. William Henry Marsh', 'Skoog, Miss. Mabel',  
'Davis, Miss. Mary', 'Leinonen, Mr. Antti Gustaf',  
'Collyer, Mr. Harvey', 'Panula, Mrs. Juha (Maria Emilia Ojala)',  
'Thorneycroft, Mr. Percival', 'Jensen, Mr. Hans Peder',  
'Sagesser, Mlle. Emma', 'Skoog, Miss. Margit Elizabeth',  
'Foo, Mr. Choong', 'Bacchini, Miss. Eugenie',  
'Harper, Mr. Henry Sleeper', 'Cor, Mr. Liudevit',  
'Simonius-Blumer, Col. Oberst Alfons', 'Willey, Mr. Edward',  
'Stanley, Miss. Amy Zillah Elsie', 'Mitkoff, Mr. Mito',

'Doling, Miss. Elsie', 'Kalvik, Mr. Johannes Halvorsen',  
'O\Leary, Miss. Hanora "Norah"', 'Hegarty, Miss. Hanora "Nora"',  
'Hickman, Mr. Leonard Mark', 'Radeff, Mr. Alexander',  
'Bourke, Mrs. John (Catherine)', 'Eitemiller, Mr. George Floyd',  
'Newell, Mr. Arthur Webster', 'Frauenthal, Dr. Henry William',  
'Badt, Mr. Mohamed', 'Colley, Mr. Edward Pomeroy',  
'Coleff, Mr. Peju', 'Lindqvist, Mr. Eino William',  
'Hickman, Mr. Lewis', 'Butler, Mr. Reginald Fenton',  
'Rommetvedt, Mr. Knud Paust', 'Cook, Mr. Jacob',  
'Taylor, Mrs. Elmer Zebley (Juliet Cummins Wright)',  
'Brown, Mrs. Thomas William Solomon (Elizabeth Catherine Ford)',  
'Davidson, Mr. Thornton', 'Mitchell, Mr. Henry Michael',  
'Wilhelms, Mr. Charles', 'Watson, Mr. Ennis Hastings',  
'Edvardsson, Mr. Gustaf Hjalmar', 'Sawyer, Mr. Frederick Charles',  
'Turja, Miss. Anna Sofia',  
'Goodwin, Mrs. Frederick (Augusta Tyler)',  
'Cardeza, Mr. Thomas Drake Martinez', 'Peters, Miss. Katie',  
'Hassab, Mr. Hammad', 'Olsvigen, Mr. Thor Anderson',  
'Goodwin, Mr. Charles Edward', 'Brown, Mr. Thomas William Solomon',  
'Laroche, Mr. Joseph Philippe Lemercier',  
'Panula, Mr. Jaako Arnold', 'Dakic, Mr. Branko',  
'Fischer, Mr. Eberhard Thelander',  
'Madill, Miss. Georgette Alexandra', 'Dick, Mr. Albert Adrian',  
'Karun, Miss. Manca', 'Lam, Mr. Ali', 'Saad, Mr. Khalil',  
'Weir, Col. John', 'Chapman, Mr. Charles Henry',  
'Kelly, Mr. James', 'Mullens, Miss. Katherine "Katie"',  
'Thayer, Mr. John Borland',  
'Humblen, Mr. Adolf Mathias Nicolai Olsen',  
'Astor, Mrs. John Jacob (Madeleine Talmadge Force)',  
'Silverthorne, Mr. Spencer Victor', 'Barbara, Miss. Saiide',  
'Gallagher, Mr. Martin', 'Hansen, Mr. Henrik Juul',  
'Morley, Mr. Henry Samuel ("Mr Henry Marshall")',  
'Kelly, Mrs. Florence "Fannie"',  
'Calderhead, Mr. Edward Pennington', 'Cleaver, Miss. Alice',  
'Moubarek, Master. Halim Gonios ("William George")',  
'Mayne, Mlle. Berthe Antonine ("Mrs de Villiers")',  
'Klaber, Mr. Herman', 'Taylor, Mr. Elmer Zebley',  
'Larsson, Mr. August Viktor', 'Greenberg, Mr. Samuel',  
'Soholt, Mr. Peter Andreas Lauritz Andersen',  
'Endres, Miss. Caroline Louise',  
'Troutt, Miss. Edwina Celia "Winnie"', 'McEvoy, Mr. Michael',  
'Johnson, Mr. Malkolm Joackim',  
'Harper, Miss. Annie Jessie "Nina"', 'Jensen, Mr. Svend Lauritz',  
'Gillespie, Mr. William Henry', 'Hodges, Mr. Henry Price',  
'Chambers, Mr. Norman Campbell', 'Oreskovic, Mr. Luka',  
'Renouf, Mrs. Peter Henry (Lillian Jefferys)',  
'Mannion, Miss. Margareth', 'Bryhl, Mr. Kurt Arnold Gottfrid',  
'Ilmakangas, Miss. Pieta Sofia', 'Allen, Miss. Elisabeth Walton',  
'Hassan, Mr. Houssein G N', 'Knight, Mr. Robert J',  
'Berriman, Mr. William John', 'Troupiansky, Mr. Moses Aaron',  
'Williams, Mr. Leslie', 'Ford, Mrs. Edward (Margaret Ann Watson)',  
'Lesurer, Mr. Gustave J', 'Ivanoff, Mr. Kanio',  
'Nankoff, Mr. Minko', 'Hawksford, Mr. Walter James',  
'Cavendish, Mr. Tyrell William',  
'Ryerson, Miss. Susan Parker "Suzette"', 'McNamee, Mr. Neal',  
'Stranden, Mr. Juho', 'Crosby, Capt. Edward Gifford',  
'Abbott, Mr. Rossmore Edward', 'Sinkkonen, Miss. Anna',  
'Marvin, Mr. Daniel Warner', 'Connaghton, Mr. Michael',  
'Wells, Miss. Joan', 'Moor, Master. Meier',  
'Vande Velde, Mr. Johannes Joseph', 'Jonkoff, Mr. Lallo',



'Herman, Mrs. Samuel (Jane Laver)', 'Hamalainen, Master. Viljo',  
 'Carlsson, Mr. August Sigfrid', 'Bailey, Mr. Percy Andrew',  
 'Theobald, Mr. Thomas Leonard',  
 'Roths, the Countess. of (Lucy Noel Martha Dyer-Edwards)',  
 'Garfirth, Mr. John', 'Nirva, Mr. Iisakki Antino Aijo',  
 'Barah, Mr. Hanna Assi',  
 'Carter, Mrs. William Ernest (Lucile Polk)',  
 'Eklund, Mr. Hans Linus', 'Hogeboom, Mrs. John C (Anna Andrews)',  
 'Brewer, Dr. Arthur Jackson', 'Mangan, Miss. Mary',  
 'Moran, Mr. Daniel J', 'Gronnestad, Mr. Daniel Danielsen',  
 'Lievens, Mr. Rene Aime', 'Jensen, Mr. Niels Peder',  
 'Mack, Mrs. (Mary)', 'Elias, Mr. Dibo',  
 'Hocking, Mrs. Elizabeth (Eliza Needs)',  
 'Myhrman, Mr. Pehr Fabian Oliver Malkolm', 'Tobin, Mr. Roger',  
 'Emanuel, Miss. Virginia Ethel', 'Kilgannon, Mr. Thomas J',  
 'Robert, Mrs. Edward Scott (Elisabeth Walton McMillan)',  
 'Ayoub, Miss. Banoura',  
 'Dick, Mrs. Albert Adrian (Vera Gillespie)',  
 'Long, Mr. Milton Clyde', 'Johnston, Mr. Andrew G',  
 'Ali, Mr. William', 'Harmer, Mr. Abraham (David Lishin)',  
 'Sjoblom, Miss. Anna Sofia', 'Rice, Master. George Hugh',  
 'Dean, Master. Bertram Vere', 'Guggenheim, Mr. Benjamin',  
 'Keane, Mr. Andrew "Andy"', 'Gaskell, Mr. Alfred',  
 'Sage, Miss. Stella Anna', 'Hoyt, Mr. William Fisher',  
 'Dantcheff, Mr. Ristiu', 'Otter, Mr. Richard',  
 'Leader, Dr. Alice (Farnham)', 'Osman, Mrs. Mara',  
 'Ibrahim Shawah, Mr. Yousseff',  
 'Van Impe, Mrs. Jean Baptiste (Rosalie Paula Govaert)',  
 'Ponesell, Mr. Martin',  
 'Collyer, Mrs. Harvey (Charlotte Annie Tate)',  
 'Carter, Master. William Thornton II',  
 'Thomas, Master. Assad Alexander', 'Hedman, Mr. Oskar Arvid',  
 'Johansson, Mr. Karl Johan', 'Andrews, Mr. Thomas Jr',  
 'Pettersson, Miss. Ellen Natalia', 'Meyer, Mr. August',  
 'Chambers, Mrs. Norman Campbell (Bertha Griggs)',  
 'Alexander, Mr. William', 'Lester, Mr. James',  
 'Slemen, Mr. Richard James', 'Andersson, Miss. Ebba Iris Alfrida',  
 'Tomlin, Mr. Ernest Portage', 'Fry, Mr. Richard',  
 'Heininen, Miss. Wendla Maria', 'Mallet, Mr. Albert',  
 'Holm, Mr. John Fredrik Alexander', 'Skoog, Master. Karl Thorsten',  
 'Hays, Mrs. Charles Melville (Clara Jennings Gregg)',  
 'Lulic, Mr. Nikola', 'Reuchlin, Jonkheer. John George',  
 'Moor, Mrs. (Beila)', 'Panula, Master. Urho Abraham',  
 'Flynn, Mr. John', 'Lam, Mr. Len', 'Mallet, Master. Andre',  
 'McCormack, Mr. Thomas Joseph',  
 'Stone, Mrs. George Nelson (Martha Evelyn)',  
 'Yasbeck, Mrs. Antoni (Selini Alexander)',  
 'Richards, Master. George Sibley', 'Saad, Mr. Amin',  
 'Augustsson, Mr. Albert', 'Allum, Mr. Owen George',  
 'Compton, Miss. Sara Rebecca', 'Pasic, Mr. Jakob',  
 'Sirota, Mr. Maurice', 'Chip, Mr. Chang', 'Marechal, Mr. Pierre',  
 'Alhomaki, Mr. Ilmari Rudolf', 'Mudd, Mr. Thomas Charles',  
 'Serepeca, Miss. Augusta', 'Lemberopolous, Mr. Peter L',  
 'Culumovic, Mr. Jeso', 'Abbing, Mr. Anthony',  
 'Sage, Mr. Douglas Bullen', 'Markoff, Mr. Marin',  
 'Harper, Rev. John',  
 'Goldenberg, Mrs. Samuel L (Edwiga Grabowska)',  
 'Andersson, Master. Sigvard Harald Elias', 'Svensson, Mr. Johan',  
 'Boulos, Miss. Nourelain', 'Lines, Miss. Mary Conover',  
 'Carter, Mrs. Ernest Courtenay (Lilian Hughes)',

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'Aks, Mrs. Sam (Leah Rosen)',
'Wick, Mrs. George Dennick (Mary Hitchcock)',
'Daly, Mr. Peter Denis ', 'Baclini, Mrs. Solomon (Latifa Qurban)',
'Razi, Mr. Raihed', 'Hansen, Mr. Claus Peter',
'Giles, Mr. Frederick Edward',
'Swift, Mrs. Frederick Joel (Margaret Welles Barron)',
'Sage, Miss. Dorothy Edith "Dolly"', 'Gill, Mr. John William',
'Bystrom, Mrs. (Karolina)', 'Duran y More, Miss. Asuncion',
'Roebing, Mr. Washington Augustus II',
'van Melkebeke, Mr. Philemon', 'Johnson, Master. Harold Theodor',
'Balkic, Mr. Cerin',
'Beckwith, Mrs. Richard Leonard (Sallie Monypeny)',
'Carlsson, Mr. Frans Olof', 'Vander Cruyssen, Mr. Victor',
'Abelson, Mrs. Samuel (Hannah Wizosky)',
'Najib, Miss. Adele Kiamie "Jane"',
'Gustafsson, Mr. Alfred Ossian', 'Petroff, Mr. Nedelio',
'Laleff, Mr. Kristo',
'Potter, Mrs. Thomas Jr (Lily Alexenia Wilson)',
'Shelley, Mrs. William (Imanita Parrish Hall)',
'Markun, Mr. Johann', 'Dahlberg, Miss. Gerda Ulrika',
'Banfield, Mr. Frederick James', 'Sutehall, Mr. Henry Jr',
'Rice, Mrs. William (Margaret Norton)', 'Montvila, Rev. Juozas',
'Graham, Miss. Margaret Edith',
'Johnston, Miss. Catherine Helen "Carrie"',
'Behr, Mr. Karl Howell', 'Dooley, Mr. Patrick'], dtype=object)
```

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In [78]: df.Name.nunique()
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Out[78]: 891
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## Mode of Categorical Values of Name Column

```
In [79]: df.Name.mode()
```

```
Out[79]: 0          Abbing, Mr. Anthony
1          Abbott, Mr. Rossmore Edward
2          Abbott, Mrs. Stanton (Rosa Hunt)
3          Abelson, Mr. Samuel
4          Abelson, Mrs. Samuel (Hannah Wizosky)
...
886         de Mulder, Mr. Theodore
887         de Pelsmaecker, Mr. Alfons
888         del Carlo, Mr. Sebastiano
889         van Billiard, Mr. Austin Blyler
890         van Melkebeke, Mr. Philemon
Length: 891, dtype: object
```

## Finding the number of unique values in Fare Column

```
In [87]: df.Fare.nunique()
```

```
Out[87]: 248
```

## Number Of Rows and Columns

In [115... `df.shape`

Out[115... (891, 12)

## Customer Paid Highest Amount of Fare

```
In [130... fare=pd.DataFrame(df.groupby('Name').max(numeric_only=True)['Fare'])
fare.sort_values(by=['Fare'],ascending=False, inplace = True)
fare.head(1)
```

Out[130... **Fare**

Name
Ward, Miss. Anna 512.3292

## Customer Paid Lowest Amount of Fare

```
In [133... fare=pd.DataFrame(df.groupby('Name').min(numeric_only=True)['Fare'])
fare.sort_values(by=['Fare'],ascending=False, inplace = True)
fare.tail(1)
```

Out[133... **Fare**

Name
Knight, Mr. Robert J 0.0

## Customer having highest age who Paid Lowest Amount of Fare

```
In [144... fare=pd.DataFrame(df.groupby('Age').min(numeric_only=True)['Fare'])
fare.sort_values(by=['Fare'],ascending=False, inplace = True)
fare.tail(1)
```

Out[144... **Fare**

Age
36.0 0.0

```
In [146... fare=pd.DataFrame(df.groupby('Age').max(numeric_only=True)['Fare'])
fare.sort_values(by=['Fare'],ascending=False, inplace = True)
```

```
fare.head(1)
```

```
Out[146...      Fare
      Age
36.0  512.3292
```

We found the passengers from same age has paid both maximum and minimum Fare.

## Displaying The Person and respective age who paid maximum Fare.

```
In [155... fare=pd.DataFrame(df.groupby(['Name','Age']).max(numeric_only=True)['Fare'])
fare.sort_values(by=['Fare'],ascending=False, inplace = True)
fare.head(1)
```

```
Out[155...      Fare
      Name  Age
Ward, Miss. Anna  35.0  512.3292
```

## Displaying The Person and respective age who paid minimum Fare.

```
In [156... fare=pd.DataFrame(df.groupby(['Name','Age']).min(numeric_only=True)['Fare'])
fare.sort_values(by=['Fare'],ascending=False, inplace = True)
fare.tail(1)
```

```
Out[156...      Fare
      Name  Age
Tornquist, Mr. William Henry  25.0  0.0
```

## Removing all the Null/NaN/NaT Values

```
In [157... df.dropna()
```

```
Out[157... PassengerId  Survived  Pclass     Name     Sex  Age  SibSp  Parch  Ticket   Fare  Cabin  Embarked
1            2         1         1  Cumings, Mrs. John Bradley (Florence Briggs Th... female  38.0    1    0    PC 17599   71.2833   C85        S
```

PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000	C123
6	7	0	1	McCarthy, Mr. Timothy J	male	54.0	0	0	17463	51.8625	E46
10	11	1	3	Sandstrom, Miss. Marguerite Rut	female	4.0	1	1	PP 9549	16.7000	G6
11	12	1	1	Bonnell, Miss. Elizabeth	female	58.0	0	0	113783	26.5500	C103
...	...	...	...	...	...	...	...	...	...	...	...
871	872	1	1	Beckwith, Mrs. Richard Leonard (Sallie Monypeny)	female	47.0	1	1	11751	52.5542	D35
872	873	0	1	Carlsson, Mr. Frans Olof	male	33.0	0	0	695	5.0000	B51 B53 B55
879	880	1	1	Potter, Mrs. Thomas Jr (Lily Alexenia Wilson)	female	56.0	0	1	11767	83.1583	C50
887	888	1	1	Graham, Miss. Margaret Edith	female	19.0	0	0	112053	30.0000	B42
889	890	1	1	Behr, Mr. Karl Howell	male	26.0	0	0	111369	30.0000	C148

183 rows × 12 columns



# Dropping All Columns with Any Missing Value

```
In [159... df.dropna(axis=1)
```

PassengerId	Survived	Pclass	Name	Sex	SibSp	Parch	Ticket	Fare
-------------	----------	--------	------	-----	-------	-------	--------	------

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

891 rows × 9 columns

# Drop Row/Column Only if All the Values are Null

In [164...

```
df1 = df.dropna(how='all', axis=1)
print(df1)
```

	PassengerId	Survived	Pclass	\		Name	Sex	Age	SibSp	\
0	1	0	3		0	Braund, Mr. Owen Harris	male	22.0	1	
1	2	1	1		1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	
2	3	1	3		2	Heikkinen, Miss. Laina	female	26.0	0	
3	4	1	1							
4	5	0	3							
..	...	...	...							
886	887	0	2							
887	888	1	1							
888	889	0	3							
889	890	1	1							
890	891	0	3							

3	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1
4	Allen, Mr. William Henry	male	35.0	0
..	...	...	...	...
886	Montvila, Rev. Juozas	male	27.0	0
887	Graham, Miss. Margaret Edith	female	19.0	0
888	Johnston, Miss. Catherine Helen "Carrie"	female	NaN	1
889	Behr, Mr. Karl Howell	male	26.0	0
890	Dooley, Mr. Patrick	male	32.0	0

	Parch	Ticket	Fare	Cabin	Embarked
0	0	A/5 21171	7.2500	NaN	S
1	0	PC 17599	71.2833	C85	C
2	0	STON/O2. 3101282	7.9250	NaN	S
3	0	113803	53.1000	C123	S
4	0	373450	8.0500	NaN	S
..	...	...	...	...	...
886	0	211536	13.0000	NaN	S
887	0	112053	30.0000	B42	S
888	2	W./C. 6607	23.4500	NaN	S
889	0	111369	30.0000	C148	C
890	0	370376	7.7500	NaN	Q

[891 rows x 12 columns]

# Deleting all duplicates & Null/NaN/NaT Values & Missing Values

```
In [169... df.dropna().drop_duplicates(keep=False).dropna(axis=1)
#drop_duplicates(keep=False) - Drop Duplicates
#dropna(axis=1) - Drop Missing Values
```

Out[169...	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Err
	1	2	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	71.2833	C85	
	3	4	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000	C123	
	6	7	0	McCarthy, Mr. Timothy J	male	54.0	0	0	17463	51.8625	E46	
	10	11	1	Sandstrom, Miss. Marguerite Rut	female	4.0	1	1	PP 9549	16.7000	G6	
	11	12	1	Bonnell, Miss. Elizabeth	female	58.0	0	0	113783	26.5500	C103	

PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
...	...	...	...	...	...	...	...	...	...	...	...
871	872	1	1	Beckwith, Mrs. Richard Leonard (Sallie Monypeny)	female	47.0	1	1	11751	52.5542	D35
872	873	0	1	Carlsson, Mr. Frans Olof	male	33.0	0	0	695	5.0000	B51 B53 B55
879	880	1	1	Potter, Mrs. Thomas Jr (Lily Alexenia Wilson)	female	56.0	0	1	11767	83.1583	C50
887	888	1	1	Graham, Miss. Margaret Edith	female	19.0	0	0	112053	30.0000	B42
889	890	1	1	Behr, Mr. Karl Howell	male	26.0	0	0	111369	30.0000	C148

183 rows × 12 columns



## FILLING ALL THE NAN VALUES WITH 0

```
In [58]: df.fillna(0)
```

Out[58]:

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	8.2500	B96 B98
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	72.2833	C85
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	8.9250	B96 B98



PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	54.1000	C123
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	9.0500	B96 B98
...	...	...	...	...	...	...	...	...	...	...	...
886	887	0	2	Montvila, Rev. Juozas	male	27.0	0	0	211536	14.0000	B96 B98
887	888	1	1	Graham, Miss. Margaret Edith	female	19.0	0	0	112053	31.0000	B42
888	889	0	3	Johnston, Miss. Catherine Helen "Carrie"	female	0.0	1	2	W./C. 6607	24.4500	B96 B98
889	890	1	1	Behr, Mr. Karl Howell	male	26.0	0	0	111369	31.0000	C148
890	891	0	3	Dooley, Mr. Patrick	male	32.0	0	0	370376	8.7500	B96 B98

891 rows × 12 columns



# REPLACING NULL VALUES WITH THE MODE IN CABIN COLUMN

```
In [60]: a=df.Fare.fillna(df.Fare.mode()[0],inplace=True) #inplace is to make the changes perman
print(a)
```

None  
we are getting none coz : we dont have any null value here.

```
In [51]: df.isnull()
```

Out[51]:	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
0	False	False	False	False	False	False	False	False	False	False	False	False

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
1	False	False	False	False	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False	False	False	False	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	False	False
...	...	...	...	...	...	...	...	...	...	...	...	...
886	False	False	False	False	False	False	False	False	False	False	False	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	False	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	False	False

891 rows × 12 columns

# Removing the Duplicates from Name & Age Column

In [171...

df.drop\_duplicates(subset=['Name', 'Age'])

Out[171...

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	I
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.2500	NaN	
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	71.2833	C85	
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.9250	NaN	
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000	C123	
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	8.0500	NaN	
...	...	...	...	...	...	...	...	...	...	...	...	...

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	I
886	887	0	2	Montvila, Rev. Juozas	male	27.0	0	0	211536	13.0000	NaN	
887	888	1	1	Graham, Miss. Margaret Edith	female	19.0	0	0	112053	30.0000	B42	
888	889	0	3	Johnston, Miss. Catherine Helen "Carrie"	female	NaN	1	2	W./C. 6607	23.4500	NaN	
889	890	1	1	Behr, Mr. Karl Howell	male	26.0	0	0	111369	30.0000	C148	
890	891	0	3	Dooley, Mr. Patrick	male	32.0	0	0	370376	7.7500	NaN	

891 rows × 12 columns



In [178...

```
df.groupby(['Name']).Fare.agg(['mean', 'count'])
```

Out[178...

	mean	count	sum
Name			
Abbing, Mr. Anthony	7.5500	1	7.5500
Abbott, Mr. Rossmore Edward	20.2500	1	20.2500
Abbott, Mrs. Stanton (Rosa Hunt)	20.2500	1	20.2500
Abelson, Mr. Samuel	24.0000	1	24.0000
Abelson, Mrs. Samuel (Hannah Wizosky)	24.0000	1	24.0000
...	...	...	...
de Mulder, Mr. Theodore	9.5000	1	9.5000
de Pelsmaecker, Mr. Alfons	9.5000	1	9.5000
del Carlo, Mr. Sebastiano	27.7208	1	27.7208
van Billiard, Mr. Austin Blyler	14.5000	1	14.5000
van Melkebeke, Mr. Philemon	9.5000	1	9.5000

891 rows × 3 columns

# Setting PassengerId as an Index or Row Label.

In [184...

```
df.set_index('PassengerId')
```

Out[184...

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

891 rows × 11 columns



# Reseting the assigned index earlier.

In [43]:

```
df.reset_index()
```

Out[43]:

	index	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin
0	0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	8.2500	
1	1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...)	female	38.0	1	0	PC 17599	72.2833	
2	2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	8.9250	
3	3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	54.1000	
4	4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	9.0500	
...	...	...	...	...	...	...	...	...	...	...	...	...
886	886	887	0	2	Montvila, Rev. Juozas	male	27.0	0	0	211536	14.0000	
887	887	888	1	1	Graham, Miss. Margaret Edith	female	19.0	0	0	112053	31.0000	
888	888	889	0	3	Johnston, Miss. Catherine Helen "Carrie"	female	NaN	1	2	W./C. 6607	24.4500	
889	889	890	1	1	Behr, Mr. Karl Howell	male	26.0	0	0	111369	31.0000	
890	890	891	0	3	Dooley, Mr. Patrick	male	32.0	0	0	370376	8.7500	

891 rows × 13 columns



# DISPLAYING NEW INDEX

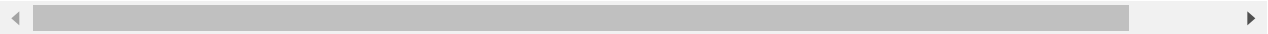
In [44]:

```
df.reset_index(drop=True)
```

Out[44]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	I
0	1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	8.2500	NaN	
1	2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	72.2833	C85	
2	3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	8.9250	NaN	
3	4	1	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	54.1000	C123	
4	5	0	3	Allen, Mr. William Henry	male	35.0	0	0	373450	9.0500	NaN	
...	...	...	...	...	...	...	...	...	...	...	...	
886	887	0	2	Montvila, Rev. Juozas	male	27.0	0	0	211536	14.0000	NaN	
887	888	1	1	Graham, Miss. Margaret Edith	female	19.0	0	0	112053	31.0000	B42	
888	889	0	3	Johnston, Miss. Catherine Helen "Carrie"	female	NaN	1	2	W./C. 6607	24.4500	NaN	
889	890	1	1	Behr, Mr. Karl Howell	male	26.0	0	0	111369	31.0000	C148	
890	891	0	3	Dooley, Mr. Patrick	male	32.0	0	0	370376	8.7500	NaN	

891 rows × 12 columns



# Displaying Name and Fare column and number of rows as desired.

```
In [20]: df.loc[0:4, ["Name", "Fare"]]
```

Out[20]:

	Name	Fare
0	Braund, Mr. Owen Harris	7.2500
1	Cumings, Mrs. John Bradley (Florence Briggs Th...	71.2833
2	Heikkinen, Miss. Laina	7.9250
3	Futrelle, Mrs. Jacques Heath (Lily May Peel)	53.1000
4	Allen, Mr. William Henry	8.0500

# DISPLAYING FARE PAID BY PARTICULAR CUSTOMER

```
In [21]: df.loc[3, 'Fare']
```

Out[21]: 53.1

# DISPLAYING PARTICULAR COLUMN RANGE

```
In [26]: df.loc[0:4, 'Name': 'Fare'] #0:4=> ROW and column name range: 1st column is name will go
```

Out[26]:

	Name	Sex	Age	SibSp	Parch	Ticket	Fare
0	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.2500
1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	71.2833
2	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.9250
3	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000
4	Allen, Mr. William Henry	male	35.0	0	0	373450	8.0500

```
In [33]: df.iloc[0:5, 3:10]
```

Out[33]:

	Name	Sex	Age	SibSp	Parch	Ticket	Fare
0	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.2500
1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38.0	1	0	PC 17599	71.2833

	Name	Sex	Age	SibSp	Parch	Ticket	Fare
2	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.9250
3	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35.0	1	0	113803	53.1000
4	Allen, Mr. William Henry	male	35.0	0	0	373450	8.0500

## USING .iloc & .loc

In [35]:

```
df.iloc[3,9]
```

Out[35]: 53.1

In [36]:

```
df.loc[3, 'Fare']
```

Out[36]: 53.1

## DISPLAYING PARTICULAR COLUMN

In [28]:

```
df.iloc[1:4,3:4]
```

Out[28]:

	Name
1	Cumings, Mrs. John Bradley (Florence Briggs Th...
2	Heikkinen, Miss. Laina
3	Futrelle, Mrs. Jacques Heath (Lily May Peel)

## SORTING WHOLE DATAFRAME VALUE BY FARE

In [29]:

```
df.sort_values(by=['Fare'])
```

Out[29]:

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
271	272	1	3	Tornquist, Mr. William Henry	male	25.0	0	0	LINE	0.0000	NaN	
597	598	0	3	Johnson, Mr. Alfred	male	49.0	0	0	LINE	0.0000	NaN	



	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
302	303	0	3	Johnson, Mr. William Cahoon Jr	male	19.0	0	0	LINE	0.0000	NaN	
633	634	0	1	Parr, Mr. William Henry Marsh	male	NaN	0	0	112052	0.0000	NaN	
277	278	0	2	Parkes, Mr. Francis "Frank"	male	NaN	0	0	239853	0.0000	NaN	
...	...	...	...	...	...	...	...	...	...	...	...	
438	439	0	1	Fortune, Mr. Mark	male	64.0	1	4	19950	263.0000	C23 C25 C27	
341	342	1	1	Fortune, Miss. Alice Elizabeth	female	24.0	3	2	19950	263.0000	C23 C25 C27	
737	738	1	1	Lesurer, Mr. Gustave J	male	35.0	0	0	PC 17755	512.3292	B101	
258	259	1	1	Ward, Miss. Anna	female	35.0	0	0	PC 17755	512.3292	NaN	
679	680	1	1	Cardeza, Mr. Thomas Drake Martinez	male	36.0	0	1	PC 17755	512.3292	B51 B53 B55	

891 rows × 12 columns



# Adding 1 to everyone's Fare that they have paid.

```
In [38]: df['Fare'].apply(lambda x: x+1)
```

```
Out[38]: 0      9.2500
1     73.2833
2      9.9250
3     55.1000
4     10.0500
...
886    15.0000
```

```

887    32.0000
888    25.4500
889    32.0000
890     9.7500
Name: Fare, Length: 891, dtype: float64

```

## REPLACING THE 'MALE&FEMALE' with '1 & 0' RESPECTIVELY.

### Map Function is used.

```
In [42]: df['Sex'].map({'male':1,'female':0})
```

```

Out[42]: 0      1
         1      0
         2      0
         3      0
         4      1
         ..
        886     1
        887     0
        888     0
        889     1
        890     1
Name: Sex, Length: 891, dtype: int64

```

## ENCODING BY USING MAP FUNCTION: REPLACING FARE <=50 :0 , 50< : 1

```
In [79]: def my_function(x):
         if x <= 50:
             return('0')
         if x > 50:
             return ('1')
         df["Fare"].map(my_function)
```

```

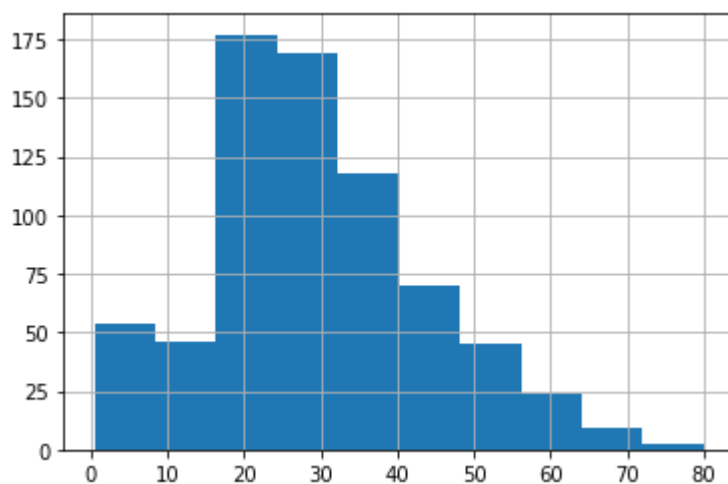
Out[79]: 0      0
         1      1
         2      0
         3      1
         4      0
         ..
        886     0
        887     0
        888     0
        889     0
        890     0
Name: Fare, Length: 891, dtype: object

```

## Age distribution of Titanic Passengers

```
In [76]: df.Age.hist()
```

```
Out[76]: <AxesSubplot:>
```



```
In [ ]:
```