day-4-pandas-part-2

January 4, 2023

[34]:
```
import pandas as pd
```

[35]:
```
movie=pd.read_csv("/content/movies.csv")
```

Add new row in data frame

[36]:
```
dic = {
    "Name":['Rohit',"Verma","Pushpa","Ankit"],
    "Roll_No" : [2128,2128,2124,2104],
    "Education" :["M.sc","M.sc","M.sc","M.sc"]
}
d=pd.DataFrame(dic)
```

[37]:
```
new_person=pd.Series(["Piyush",2129,"M.
 ↪sc"],index=['Name',"Roll_No",'Education'])
```

[38]:
```
d.append(new_person,ignore_index=True)
```

[38]:
```
     Name  Roll_No Education
0   Rohit     2128      M.sc
1   Verma     2128      M.sc
2  Pushpa     2124      M.sc
3   Ankit     2104      M.sc
4  Piyush     2129      M.sc
```

[39]:
```
new=pd.Series(["Vishal",2139,"M.sc"])
```

[40]:
```
new
```

[40]:
```
0    Vishal
1      2139
2      M.sc
dtype: object
```

[41]:
```
d.append(new,ignore_index=True)
```

[41]:
```
     Name  Roll_No Education       0       1     2
0   Rohit   2128.0      M.sc     NaN     NaN   NaN
```

```
1   Verma   2128.0      M.sc     NaN     NaN   NaN
2  Pushpa   2124.0      M.sc     NaN     NaN   NaN
3   Ankit   2104.0      M.sc     NaN     NaN   NaN
4     NaN      NaN       NaN  Vishal  2139.0  M.sc
```

[42]:

```
new=pd.Series(["Money",2125,"M.sc"],index=["Name","Roll_No","Education"])
```

[43]:

```
d.append(new,ignore_index=True)
```

[43]:

```
     Name  Roll_No Education
0   Rohit     2128      M.sc
1   Verma     2128      M.sc
2  Pushpa     2124      M.sc
3   Ankit     2104      M.sc
4   Money     2125      M.sc
```

Rename the columns

[44]:

```
d.rename(columns={"Name":"NAME"})
```

[44]:

```
     NAME  Roll_No Education
0   Rohit     2128      M.sc
1   Verma     2128      M.sc
2  Pushpa     2124      M.sc
3   Ankit     2104      M.sc
```

[45]:

```
d.rename(columns={"NAME":"Name","Education":"Education"})
```

[45]:

```
     Name  Roll_No Education
0   Rohit     2128      M.sc
1   Verma     2128      M.sc
2  Pushpa     2124      M.sc
3   Ankit     2104      M.sc
```

Select a multiple and Indivisual Data Or sclice of a DataFrame

[46]:

```
movie
```

[46]:

```
                                   title_x     imdb_id  \
0                Uri: The Surgical Strike   tt8291224
1                           Battalion 609   tt9472208
2     The Accidental Prime Minister (film)   tt6986710
3                         Why Cheat India   tt8108208
4                         Evening Shadows   tt6028796
…                                         …           …
1624                Tera Mera Saath Rahen   tt0301250
1625                 Yeh Zindagi Ka Safar   tt0298607
1626                      Sabse Bada Sukh   tt0069204
```

```
1627                                 Daaka  tt10833860
1628                              Humsafar   tt2403201

                                            poster_path  \
0     https://upload.wikimedia.org/wikipedia/en/thum…
1                                                   NaN
2     https://upload.wikimedia.org/wikipedia/en/thum…
3     https://upload.wikimedia.org/wikipedia/en/thum…
4                                                   NaN
…                                                 …
1624  https://upload.wikimedia.org/wikipedia/en/2/2b…
1625  https://upload.wikimedia.org/wikipedia/en/thum…
1626                                                NaN
1627  https://upload.wikimedia.org/wikipedia/en/thum…
1628  https://upload.wikimedia.org/wikipedia/en/thum…

                                              wiki_link  \
0     https://en.wikipedia.org/wiki/Uri:_The_Surgica…
1           https://en.wikipedia.org/wiki/Battalion_609
2     https://en.wikipedia.org/wiki/The_Accidental_P…
3         https://en.wikipedia.org/wiki/Why_Cheat_India
4         https://en.wikipedia.org/wiki/Evening_Shadows
…                                                 …
1624  https://en.wikipedia.org/wiki/Tera_Mera_Saath_…
1625  https://en.wikipedia.org/wiki/Yeh_Zindagi_Ka_S…
1626      https://en.wikipedia.org/wiki/Sabse_Bada_Sukh
1627                https://en.wikipedia.org/wiki/Daaka
1628             https://en.wikipedia.org/wiki/Humsafar

                            title_y                 original_title  is_adult  \
0          Uri: The Surgical Strike       Uri: The Surgical Strike         0
1                     Battalion 609                  Battalion 609         0
2     The Accidental Prime Minister  The Accidental Prime Minister         0
3                   Why Cheat India                Why Cheat India         0
4                   Evening Shadows                Evening Shadows         0
…                             …                             …       …
1624          Tera Mera Saath Rahen          Tera Mera Saath Rahen         0
1625           Yeh Zindagi Ka Safar           Yeh Zindagi Ka Safar         0
1626                Sabse Bada Sukh                Sabse Bada Sukh         0
1627                          Daaka                          Daaka         0
1628                       Humsafar                       Humsafar         0

      year_of_release runtime            genres  imdb_rating  imdb_votes  \
0                2019     138  Action|Drama|War          8.4       35112
1                2019     131               War          4.1          73
2                2019     112   Biography|Drama          6.1        5549
3                2019     121       Crime|Drama          6.0        1891
```

```
4                2018     102             Drama          7.3         280
…               …     …               …          …         …
1624             2001     148             Drama          4.9         278
1625             2001     146             Drama          3.0         133
1626             2018      \N      Comedy|Drama          6.1          13
1627             2019     136            Action          7.4          38
1628             2011      35     Drama|Romance          9.0        2968

                                                   story  \
0     Divided over five chapters  the film chronicle…
1     The story revolves around a cricket match betw…
2     Based on the memoir by Indian policy analyst S…
3     The movie focuses on existing malpractices in …
4     While gay rights and marriage equality has bee…
…                                                   …
1624  Raj Dixit lives with his younger brother  Rahu…
1625  Hindi pop-star  Sarina Devan  lives a wealthy …
1626  Village born Lalloo re-locates to Bombay  and …
1627  Shinda tries robbing a bank so he can be wealt…
1628  Sara and Ashar are childhood friends who share…

                                                 summary tagline  \
0     Indian army special forces execute a covert op…     NaN
1     The story of Battalion 609 revolves around a c…     NaN
2     Explores Manmohan Singh's tenure as the Prime …     NaN
3     The movie focuses on existing malpractices in …     NaN
4     Under the 'Evening Shadows'  truth often plays…     NaN
…                                                   …     …
1624  A man is torn between his handicapped brother …     NaN
1625  A singer finds out she was adopted when the ed…     NaN
1626  Village born Lalloo re-locates to Bombay  and …     NaN
1627  Shinda tries robbing a bank so he can be wealt…     NaN
1628  Ashar and Khirad are forced to get married due…     NaN

                                                  actors  \
0     Vicky Kaushal|Paresh Rawal|Mohit Raina|Yami Ga…
1     Vicky Ahuja|Shoaib Ibrahim|Shrikant Kamat|Elen…
2     Anupam Kher|Akshaye Khanna|Aahana Kumra|Atul S…
3     Emraan Hashmi|Shreya Dhanwanthary|Snighdadeep …
4     Mona Ambegaonkar|Ananth Narayan Mahadevan|Deva…
…                                                   …
1624  Ajay Devgn|Sonali Bendre|Namrata Shirodkar|Pre…
1625  Ameesha Patel|Jimmy Sheirgill|Nafisa Ali|Gulsh…
1626  Vijay Arora|Asrani|Rajni Bala|Kumud Damle|Utpa…
1627                           Gippy Grewal|Zareen Khan|
1628                                         Fawad Khan|
            wins_nominations              release_date
0                     4 wins     11 January 2019 (USA)
1                        NaN   11 January 2019 (India)
2                        NaN     11 January 2019 (USA)
3                        NaN     18 January 2019 (USA)
4     17 wins & 1 nomination   11 January 2019 (India)
…                      …                        …
1624                     NaN   7 November 2001 (India)
1625                     NaN  16 November 2001 (India)
1626                     NaN                       NaN
1627                     NaN     1 November 2019 (USA)
1628                     NaN     TV Series (2011-2012)

[1629 rows x 18 columns]
```

[47]:

```
movie["title_x"]
```

[47]:

```
0                   Uri: The Surgical Strike
1                              Battalion 609
2       The Accidental Prime Minister (film)
3                            Why Cheat India
4                            Evening Shadows
                        …
1624                   Tera Mera Saath Rahen
1625                    Yeh Zindagi Ka Safar
1626                         Sabse Bada Sukh
1627                                   Daaka
1628                                Humsafar
Name: title_x, Length: 1629, dtype: object
```

[48]:

```
movie[["title_x","imdb_rating"]]
```

[48]:

```
                                   title_x  imdb_rating
0                 Uri: The Surgical Strike          8.4
1                            Battalion 609          4.1
2     The Accidental Prime Minister (film)          6.1
3                          Why Cheat India          6.0
4                          Evening Shadows          7.3
…                                    …          …
1624                 Tera Mera Saath Rahen          4.9
1625                  Yeh Zindagi Ka Safar          3.0
1626                       Sabse Bada Sukh          6.1
1627                                 Daaka          7.4
1628                              Humsafar          9.0

[1629 rows x 2 columns]
```

[49]:

```
movie[["title_x","imdb_rating"]].iloc[[1,3,4,5]]
```

[49]:

```
           title_x  imdb_rating
1    Battalion 609          4.1
3  Why Cheat India          6.0
4  Evening Shadows          7.3
5      Soni (film)          7.2
```

[50]:

```
movie.iloc[1:5]
```

[50]:

```
                                title_x    imdb_id  \
1                         Battalion 609  tt9472208
2  The Accidental Prime Minister (film)  tt6986710
3                       Why Cheat India  tt8108208
4                       Evening Shadows  tt6028796

                                         poster_path  \
1                                                NaN
2  https://upload.wikimedia.org/wikipedia/en/thum…
3  https://upload.wikimedia.org/wikipedia/en/thum…
4                                                NaN

                                           wiki_link  \
1        https://en.wikipedia.org/wiki/Battalion_609
2  https://en.wikipedia.org/wiki/The_Accidental_P…
3      https://en.wikipedia.org/wiki/Why_Cheat_India
4      https://en.wikipedia.org/wiki/Evening_Shadows

                         title_y                 original_title  is_adult  \
1                  Battalion 609                  Battalion 609         0
2  The Accidental Prime Minister  The Accidental Prime Minister         0
3                Why Cheat India                Why Cheat India         0
4                Evening Shadows                Evening Shadows         0

   year_of_release runtime           genres  imdb_rating  imdb_votes  \
1             2019     131              War          4.1          73
2             2019     112  Biography|Drama          6.1        5549
3             2019     121      Crime|Drama          6.0        1891
4             2018     102            Drama          7.3         280

                                               story  \
1  The story revolves around a cricket match betw…
2  Based on the memoir by Indian policy analyst S…
3  The movie focuses on existing malpractices in …
4  While gay rights and marriage equality has bee…

                                             summary tagline  \
1  The story of Battalion 609 revolves around a c…     NaN
2  Explores Manmohan Singh's tenure as the Prime …     NaN
3  The movie focuses on existing malpractices in …     NaN
4  Under the 'Evening Shadows'  truth often plays…     NaN

                                              actors        wins_nominations  \
1  Vicky Ahuja|Shoaib Ibrahim|Shrikant Kamat|Elen…                     NaN
2  Anupam Kher|Akshaye Khanna|Aahana Kumra|Atul S…                     NaN
3  Emraan Hashmi|Shreya Dhanwanthary|Snighdadeep …                     NaN
4  Mona Ambegaonkar|Ananth Narayan Mahadevan|Deva…  17 wins & 1 nomination

              release_date
1  11 January 2019 (India)
2    11 January 2019 (USA)
3    18 January 2019 (USA)
4  11 January 2019 (India)
```

[51]:
```
movie.iloc[:3]
```

[51]:
```
                                title_x    imdb_id  \
0              Uri: The Surgical Strike  tt8291224
1                         Battalion 609  tt9472208
2  The Accidental Prime Minister (film)  tt6986710

                                      poster_path  \
0  https://upload.wikimedia.org/wikipedia/en/thum…
1                                             NaN
2  https://upload.wikimedia.org/wikipedia/en/thum…

                                        wiki_link  \
0  https://en.wikipedia.org/wiki/Uri:_The_Surgica…
1      https://en.wikipedia.org/wiki/Battalion_609
2  https://en.wikipedia.org/wiki/The_Accidental_P…

                         title_y                 original_title  is_adult  \
0       Uri: The Surgical Strike       Uri: The Surgical Strike         0
1                  Battalion 609                  Battalion 609         0
2  The Accidental Prime Minister  The Accidental Prime Minister         0

   year_of_release runtime            genres  imdb_rating  imdb_votes  \
0             2019     138  Action|Drama|War          8.4       35112
1             2019     131               War          4.1          73
2             2019     112   Biography|Drama          6.1        5549

                                            story  \
0  Divided over five chapters  the film chronicle…
1  The story revolves around a cricket match betw…
```

```
2  Based on the memoir by Indian policy analyst S…

                                             summary tagline  \
0  Indian army special forces execute a covert op…     NaN
1  The story of Battalion 609 revolves around a c…     NaN
2  Explores Manmohan Singh's tenure as the Prime …     NaN

                                              actors wins_nominations  \
0  Vicky Kaushal|Paresh Rawal|Mohit Raina|Yami Ga…           4 wins
1  Vicky Ahuja|Shoaib Ibrahim|Shrikant Kamat|Elen…              NaN
2  Anupam Kher|Akshaye Khanna|Aahana Kumra|Atul S…              NaN

              release_date
0    11 January 2019 (USA)
1  11 January 2019 (India)
2    11 January 2019 (USA)
```

Set the index from the exiting data set

[52]:
```
new_movie=movie[["title_x","imdb_rating"]]
```

[53]:
```
new_movie.set_index("title_x")
```

[53]:
```
                                      imdb_rating
title_x
Uri: The Surgical Strike                      8.4
Battalion 609                                 4.1
The Accidental Prime Minister (film)          6.1
Why Cheat India                               6.0
Evening Shadows                               7.3
…                                           …
Tera Mera Saath Rahen                         4.9
Yeh Zindagi Ka Safar                          3.0
Sabse Bada Sukh                               6.1
Daaka                                         7.4
Humsafar                                      9.0

[1629 rows x 1 columns]
```

Selecting row based on the condition

[54]:
```
#import titanic dataset
titanic = pd.read_csv("/content/test[1].csv")
titanic
```

[54]:
```
     PassengerId  Pclass                                          Name  \
0            892       3                              Kelly, Mr. James
1            893       3              Wilkes, Mrs. James (Ellen Needs)
```

```
2            894       2                     Myles, Mr. Thomas Francis
3            895       3                              Wirz, Mr. Albert
4            896       3  Hirvonen, Mrs. Alexander (Helga E Lindqvist)
..           …     …                                           …
413         1305       3                            Spector, Mr. Woolf
414         1306       1                  Oliva y Ocana, Dona. Fermina
415         1307       3                  Saether, Mr. Simon Sivertsen
416         1308       3                           Ware, Mr. Frederick
417         1309       3                      Peter, Master. Michael J

        Sex   Age  SibSp  Parch              Ticket      Fare Cabin Embarked
0      male  34.5      0      0              330911    7.8292   NaN        Q
1    female  47.0      1      0              363272    7.0000   NaN        S
2      male  62.0      0      0              240276    9.6875   NaN        Q
3      male  27.0      0      0              315154    8.6625   NaN        S
4    female  22.0      1      1             3101298   12.2875   NaN        S
..      …   …    …    …                 …       …   …      …
413    male   NaN      0      0           A.5. 3236    8.0500   NaN        S
414  female  39.0      0      0            PC 17758  108.9000  C105        C
415    male  38.5      0      0  SOTON/O.Q. 3101262    7.2500   NaN        S
416    male   NaN      0      0              359309    8.0500   NaN        S
417    male   NaN      1      1                2668   22.3583   NaN        C

[418 rows x 11 columns]
```

in this i import the titanic dataset

```
[55]: #in this dateset i want to select all the male on the titanic dataset
      titanic[titanic["Sex"]=="male"]
```

```
[55]:     PassengerId  Pclass                            Name   Sex   Age  SibSp  \
0            892       3                Kelly, Mr. James  male  34.5      0
2            894       2       Myles, Mr. Thomas Francis  male  62.0      0
3            895       3                Wirz, Mr. Albert  male  27.0      0
5            897       3      Svensson, Mr. Johan Cervin  male  14.0      0
7            899       2    Caldwell, Mr. Albert Francis  male  26.0      1
..           …     …                             …   …   …    …
407         1299       1      Widener, Mr. George Dunton  male  50.0      1
413         1305       3              Spector, Mr. Woolf  male   NaN      0
415         1307       3    Saether, Mr. Simon Sivertsen  male  38.5      0
416         1308       3             Ware, Mr. Frederick  male   NaN      0
417         1309       3        Peter, Master. Michael J  male   NaN      1

     Parch              Ticket      Fare Cabin Embarked
0        0              330911    7.8292   NaN        Q
2        0              240276    9.6875   NaN        Q
3        0              315154    8.6625   NaN        S
```

```
5        0                7538    9.2250   NaN        S
7        1              248738   29.0000   NaN        S
..     …                 …        …    …       …
407      1              113503  211.5000   C80        C
413      0           A.5. 3236    8.0500   NaN        S
415      0  SOTON/O.Q. 3101262    7.2500   NaN        S
416      0              359309    8.0500   NaN        S
417      1                2668   22.3583   NaN        C

[266 rows x 11 columns]
```

[61]:
```
#we select all the rows where the pasangers is a male 65 or older:
titanic[(titanic["Sex"]=="male") & (titanic["Age"] >65)]
```

[61]:
```
    PassengerId  Pclass                Name   Sex   Age  SibSp  Parch  \
81          973       1  Straus, Mr. Isidor  male  67.0      1      0

      Ticket      Fare    Cabin Embarked
81  PC 17483  221.7792  C55 C57        S
```

1 Replacing Values

we want to replace value in the dataframe using 'replace' method first we change the only specific columns values in dataframe

[64]:
```
titanic["Sex"]
```

[64]:
```
0        male
1      female
2        male
3        male
4      female
        …
413      male
414    female
415      male
416      male
417      male
Name: Sex, Length: 418, dtype: object
```

[65]:
```
titanic["Sex"].replace("female","women")
```

[65]:
```
0       male
1      women
2       male
3       male
4      women
```

```
        …
413      male
414     women
415      male
416      male
417      male
Name: Sex, Length: 418, dtype: object
```

We also change the multiple values in the dataframe columns

```
[66]: titanic["Sex"]
```

```
[66]: 0        male
      1      female
      2        male
      3        male
      4      female
               …
      413      male
      414    female
      415      male
      416      male
      417      male
      Name: Sex, Length: 418, dtype: object
```

```
[68]: titanic.replace(["female","male"],["Women","Men"])
```

```
[68]:      PassengerId  Pclass                                          Name    Sex  \
      0            892       3                              Kelly, Mr. James    Men
      1            893       3              Wilkes, Mrs. James (Ellen Needs)  Women
      2            894       2                     Myles, Mr. Thomas Francis    Men
      3            895       3                              Wirz, Mr. Albert    Men
      4            896       3  Hirvonen, Mrs. Alexander (Helga E Lindqvist)  Women
      ..             …     …                                             …     …
      413         1305       3                            Spector, Mr. Woolf    Men
      414         1306       1                  Oliva y Ocana, Dona. Fermina  Women
      415         1307       3                  Saether, Mr. Simon Sivertsen    Men
      416         1308       3                           Ware, Mr. Frederick    Men
      417         1309       3                      Peter, Master. Michael J    Men

            Age  SibSp  Parch              Ticket      Fare Cabin Embarked
      0    34.5      0      0              330911    7.8292   NaN        Q
      1    47.0      1      0              363272    7.0000   NaN        S
      2    62.0      0      0              240276    9.6875   NaN        Q
      3    27.0      0      0              315154    8.6625   NaN        S
      4    22.0      1      1             3101298   12.2875   NaN        S
      ..     …     …     …                   …         …    …        …
```

```
413   NaN      0      0           A.5. 3236    8.0500   NaN         S
414  39.0      0      0            PC 17758  108.9000  C105         C
415  38.5      0      0  SOTON/O.Q. 3101262    7.2500   NaN         S
416   NaN      0      0              359309    8.0500   NaN         S
417   NaN      1      1                2668   22.3583   NaN         C

[418 rows x 11 columns]
```

we can also change the values in the entire dataframe

[70]:
```python
titanic.head(3)
```

[70]:
```
   PassengerId  Pclass                              Name     Sex   Age  SibSp  \
0          892       3                  Kelly, Mr. James    male  34.5      0
1          893       3  Wilkes, Mrs. James (Ellen Needs)  female  47.0      1
2          894       2         Myles, Mr. Thomas Francis    male  62.0      0

   Parch  Ticket    Fare Cabin Embarked
0      0  330911  7.8292   NaN        Q
1      0  363272  7.0000   NaN        S
2      0  240276  9.6875   NaN        Q
```

[71]:
```python
titanic.replace(1,"one")
```

[71]:
```
     PassengerId Pclass                                          Name     Sex  \
0            892      3                              Kelly, Mr. James    male
1            893      3              Wilkes, Mrs. James (Ellen Needs)  female
2            894      2                     Myles, Mr. Thomas Francis    male
3            895      3                              Wirz, Mr. Albert    male
4            896      3  Hirvonen, Mrs. Alexander (Helga E Lindqvist)  female
..           …    …                                           …     …
413         1305      3                            Spector, Mr. Woolf    male
414         1306    one                  Oliva y Ocana, Dona. Fermina  female
415         1307      3                  Saether, Mr. Simon Sivertsen    male
416         1308      3                           Ware, Mr. Frederick    male
417         1309      3                     Peter, Master. Michael J    male

      Age SibSp Parch              Ticket      Fare Cabin Embarked
0    34.5     0     0              330911    7.8292   NaN        Q
1    47.0   one     0              363272    7.0000   NaN        S
2    62.0     0     0              240276    9.6875   NaN        Q
3    27.0     0     0              315154    8.6625   NaN        S
4    22.0   one   one             3101298   12.2875   NaN        S
..    …   …   …                 …       …   …      …
413   NaN     0     0           A.5. 3236    8.0500   NaN        S
414  39.0     0     0            PC 17758  108.9000  C105        C
415  38.5     0     0  SOTON/O.Q. 3101262    7.2500   NaN        S
```

```
416   NaN     0     0              359309    8.0500   NaN         S
417   NaN   one   one                2668   22.3583   NaN         C

[418 rows x 11 columns]
```

[73]:
```python
titanic.replace(0,"zero")
```

[73]:
```
     PassengerId  Pclass                                           Name  \
0            892       3                               Kelly, Mr. James
1            893       3               Wilkes, Mrs. James (Ellen Needs)
2            894       2                      Myles, Mr. Thomas Francis
3            895       3                               Wirz, Mr. Albert
4            896       3   Hirvonen, Mrs. Alexander (Helga E Lindqvist)
..             …     …                                              …
413         1305       3                             Spector, Mr. Woolf
414         1306       1                   Oliva y Ocana, Dona. Fermina
415         1307       3                   Saether, Mr. Simon Sivertsen
416         1308       3                            Ware, Mr. Frederick
417         1309       3                       Peter, Master. Michael J

        Sex   Age SibSp Parch              Ticket     Fare Cabin Embarked
0      male  34.5  zero  zero              330911   7.8292   NaN        Q
1    female  47.0     1  zero              363272      7.0   NaN        S
2      male  62.0  zero  zero              240276   9.6875   NaN        Q
3      male  27.0  zero  zero              315154   8.6625   NaN        S
4    female  22.0     1     1             3101298  12.2875   NaN        S
..      …   …   …   …                 …      …   …     …
413    male   NaN  zero  zero           A.5. 3236     8.05   NaN        S
414  female  39.0  zero  zero            PC 17758    108.9  C105        C
415    male  38.5  zero  zero  SOTON/O.Q. 3101262     7.25   NaN        S
416    male   NaN  zero  zero              359309     8.05   NaN        S
417    male   NaN     1     1                2668  22.3583   NaN        C

[418 rows x 11 columns]
```

[75]:
```python
titanic.replace([0,1],["zero","one"])
```

[75]:
```
     PassengerId Pclass                                           Name    Sex  \
0            892      3                               Kelly, Mr. James   male
1            893      3               Wilkes, Mrs. James (Ellen Needs) female
2            894      2                      Myles, Mr. Thomas Francis   male
3            895      3                               Wirz, Mr. Albert   male
4            896      3   Hirvonen, Mrs. Alexander (Helga E Lindqvist) female
..             …    …                                            …     …
413         1305      3                             Spector, Mr. Woolf   male
414         1306    one                   Oliva y Ocana, Dona. Fermina female
415         1307      3                   Saether, Mr. Simon Sivertsen   male
```

```
416         1308      3                           Ware, Mr. Frederick    male
417         1309      3                      Peter, Master. Michael J    male

      Age SibSp Parch              Ticket     Fare Cabin Embarked
0    34.5  zero  zero              330911   7.8292   NaN        Q
1    47.0   one  zero              363272      7.0   NaN        S
2    62.0  zero  zero              240276   9.6875   NaN        Q
3    27.0  zero  zero              315154   8.6625   NaN        S
4    22.0   one   one             3101298  12.2875   NaN        S
..    …   …   …                 …      …   …       …
413   NaN  zero  zero           A.5. 3236     8.05   NaN        S
414  39.0  zero  zero            PC 17758    108.9  C105        C
415  38.5  zero  zero  SOTON/O.Q. 3101262     7.25   NaN        S
416   NaN  zero  zero              359309     8.05   NaN        S
417   NaN   one   one                2668  22.3583   NaN        C

[418 rows x 11 columns]
```

1.1 Rename columns

[77]:

```
titanic.rename(columns={"Pclass":"Passenger Class"})
```

[77]:

```
     PassengerId  Passenger Class  \
0            892                3
1            893                3
2            894                2
3            895                3
4            896                3
..             …              …
413         1305                3
414         1306                1
415         1307                3
416         1308                3
417         1309                3

                                             Name     Sex   Age  SibSp  Parch  \
0                                Kelly, Mr. James    male  34.5      0      0
1                Wilkes, Mrs. James (Ellen Needs)  female  47.0      1      0
2                       Myles, Mr. Thomas Francis    male  62.0      0      0
3                                Wirz, Mr. Albert    male  27.0      0      0
4    Hirvonen, Mrs. Alexander (Helga E Lindqvist)  female  22.0      1      1
..                                              …     …   …    …    …
413                            Spector, Mr. Woolf    male   NaN      0      0
414                  Oliva y Ocana, Dona. Fermina  female  39.0      0      0
415                  Saether, Mr. Simon Sivertsen    male  38.5      0      0
416                           Ware, Mr. Frederick    male   NaN      0      0
417                      Peter, Master. Michael J    male   NaN      1      1
```

```
                 Ticket      Fare Cabin Embarked
0                330911    7.8292   NaN        Q
1                363272    7.0000   NaN        S
2                240276    9.6875   NaN        Q
3                315154    8.6625   NaN        S
4               3101298   12.2875   NaN        S
..                    …         …     …        …
413           A.5. 3236    8.0500   NaN        S
414            PC 17758  108.9000  C105        C
415  SOTON/O.Q. 3101262    7.2500   NaN        S
416              359309    8.0500   NaN        S
417                2668   22.3583   NaN        C

[418 rows x 11 columns]
```

2 Multiple Columns Rename

[78]:
```
titanic.rename(columns={"Pclass":"Passenger Class","Sex":"Gender"})
```

[78]:
```
     PassengerId  Passenger Class  \
0            892                3
1            893                3
2            894                2
3            895                3
4            896                3
..           …                 …
413         1305                3
414         1306                1
415         1307                3
416         1308                3
417         1309                3

                                             Name  Gender   Age  SibSp  Parch  \
0                                Kelly, Mr. James    male  34.5      0      0
1                Wilkes, Mrs. James (Ellen Needs)  female  47.0      1      0
2                       Myles, Mr. Thomas Francis    male  62.0      0      0
3                                Wirz, Mr. Albert    male  27.0      0      0
4    Hirvonen, Mrs. Alexander (Helga E Lindqvist)  female  22.0      1      1
..                                            …       …     …      …      …
413                            Spector, Mr. Woolf    male   NaN      0      0
414                  Oliva y Ocana, Dona. Fermina  female  39.0      0      0
415                  Saether, Mr. Simon Sivertsen    male  38.5      0      0
416                           Ware, Mr. Frederick    male   NaN      0      0
417                     Peter, Master. Michael J    male   NaN      1      1
```

```
                 Ticket      Fare Cabin Embarked
0                330911    7.8292   NaN        Q
1                363272    7.0000   NaN        S
2                240276    9.6875   NaN        Q
3                315154    8.6625   NaN        S
4               3101298   12.2875   NaN        S
..                  …       …   …      …
413           A.5. 3236    8.0500   NaN        S
414            PC 17758  108.9000  C105        C
415  SOTON/O.Q. 3101262    7.2500   NaN        S
416              359309    8.0500   NaN        S
417                2668   22.3583   NaN        C

[418 rows x 11 columns]
```

```
[83]: titanic["Sex"].unique()
```

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

```
[85]: titanic["Sex"].value_counts()
```

```
[85]: male      266
      female    152
      Name: Sex, dtype: int64
```

3 If we want to count the number of unique values

```
[86]: titanic["Sex"]
```

```
[86]: 0        male
      1      female
      2        male
      3        male
      4      female
              …
      413      male
      414    female
      415      male
      416      male
      417      male
      Name: Sex, Length: 418, dtype: object
```

```
[87]: titanic["Sex"].nunique()
```

```
[87]: 2
```

[92]:
```
titanic["Pclass"].value_counts()
```

[92]:
```
3    218
1    107
2     93
Name: Pclass, dtype: int64
```

[90]:
```
titanic["Pclass"].nunique()
```

[90]:
```
3
```

[89]:
```
titanic
```

[89]:
```
     PassengerId  Pclass                                          Name  \
0            892       3                              Kelly, Mr. James   
1            893       3              Wilkes, Mrs. James (Ellen Needs)   
2            894       2                     Myles, Mr. Thomas Francis   
3            895       3                              Wirz, Mr. Albert   
4            896       3  Hirvonen, Mrs. Alexander (Helga E Lindqvist)   
..           …     …                                            …   
413         1305       3                            Spector, Mr. Woolf   
414         1306       1                  Oliva y Ocana, Dona. Fermina   
415         1307       3                  Saether, Mr. Simon Sivertsen   
416         1308       3                           Ware, Mr. Frederick   
417         1309       3                      Peter, Master. Michael J   

        Sex   Age  SibSp  Parch              Ticket      Fare Cabin Embarked
0      male  34.5      0      0              330911    7.8292   NaN        Q
1    female  47.0      1      0              363272    7.0000   NaN        S
2      male  62.0      0      0              240276    9.6875   NaN        Q
3      male  27.0      0      0              315154    8.6625   NaN        S
4    female  22.0      1      1             3101298   12.2875   NaN        S
..      …   …    …    …                 …       …   …      …
413    male   NaN      0      0           A.5. 3236    8.0500   NaN        S
414  female  39.0      0      0            PC 17758  108.9000  C105        C
415    male  38.5      0      0  SOTON/O.Q. 3101262    7.2500   NaN        S
416    male   NaN      0      0              359309    8.0500   NaN        S
417    male   NaN      1      1                2668   22.3583   NaN        C

[418 rows x 11 columns]
```

3.1 Deleting Columns

[99]:
```
titanic.head(3)
```

[99]:
```
   PassengerId  Pclass                              Name     Sex   Age  SibSp  \
0          892       3                  Kelly, Mr. James    male  34.5      0   
```

```
1          893       3  Wilkes, Mrs. James (Ellen Needs)  female  47.0      1
2          894       2          Myles, Mr. Thomas Francis    male  62.0      0

   Parch  Ticket    Fare Cabin Embarked
0      0  330911  7.8292   NaN        Q
1      0  363272  7.0000   NaN        S
2      0  240276  9.6875   NaN        Q
```

[100]:
```
titanic.drop("Pclass",axis=1)
```

[100]:
```
     PassengerId                                          Name     Sex   Age  \
0            892                              Kelly, Mr. James    male  34.5
1            893              Wilkes, Mrs. James (Ellen Needs)  female  47.0
2            894                     Myles, Mr. Thomas Francis    male  62.0
3            895                              Wirz, Mr. Albert    male  27.0
4            896  Hirvonen, Mrs. Alexander (Helga E Lindqvist)  female  22.0
..           …                                           …     …   …
413         1305                            Spector, Mr. Woolf    male   NaN
414         1306                  Oliva y Ocana, Dona. Fermina  female  39.0
415         1307                  Saether, Mr. Simon Sivertsen    male  38.5
416         1308                           Ware, Mr. Frederick    male   NaN
417         1309                      Peter, Master. Michael J    male   NaN

     SibSp  Parch              Ticket      Fare Cabin Embarked
0        0      0              330911    7.8292   NaN        Q
1        1      0              363272    7.0000   NaN        S
2        0      0              240276    9.6875   NaN        Q
3        0      0              315154    8.6625   NaN        S
4        1      1             3101298   12.2875   NaN        S
..     …    …             …       …   …      …
413      0      0           A.5. 3236    8.0500   NaN        S
414      0      0            PC 17758  108.9000  C105        C
415      0      0  SOTON/O.Q. 3101262    7.2500   NaN        S
416      0      0              359309    8.0500   NaN        S
417      1      1                2668   22.3583   NaN        C

[418 rows x 10 columns]
```

We can drop the nultiple columns

[101]:
```
titanic.drop(["Age","Sex"],axis=1)
```

[101]:
```
     PassengerId  Pclass                                          Name  SibSp  \
0            892       3                              Kelly, Mr. James      0
1            893       3              Wilkes, Mrs. James (Ellen Needs)      1
2            894       2                     Myles, Mr. Thomas Francis      0
3            895       3                              Wirz, Mr. Albert      0
```

```
4            896       3  Hirvonen, Mrs. Alexander (Helga E Lindqvist)      1
..           …     …                                           …    …
413         1305       3                            Spector, Mr. Woolf      0
414         1306       1                  Oliva y Ocana, Dona. Fermina      0
415         1307       3                  Saether, Mr. Simon Sivertsen      0
416         1308       3                           Ware, Mr. Frederick      0
417         1309       3                      Peter, Master. Michael J      1

     Parch              Ticket      Fare Cabin Embarked
0        0              330911    7.8292   NaN        Q
1        0              363272    7.0000   NaN        S
2        0              240276    9.6875   NaN        Q
3        0              315154    8.6625   NaN        S
4        1             3101298   12.2875   NaN        S
..     …                 …       …   …      …
413      0           A.5. 3236    8.0500   NaN        S
414      0            PC 17758  108.9000  C105        C
415      0  SOTON/O.Q. 3101262    7.2500   NaN        S
416      0              359309    8.0500   NaN        S
417      1                2668   22.3583   NaN        C

[418 rows x 9 columns]
```

We can also drop the columns by indexing

[103]:
```
titanic.drop(titanic.columns[1],axis=1)
```

[103]:
```
     PassengerId                                          Name     Sex   Age  \
0            892                              Kelly, Mr. James    male  34.5
1            893              Wilkes, Mrs. James (Ellen Needs)  female  47.0
2            894                     Myles, Mr. Thomas Francis    male  62.0
3            895                              Wirz, Mr. Albert    male  27.0
4            896  Hirvonen, Mrs. Alexander (Helga E Lindqvist)  female  22.0
..           …                                           …     …   …
413         1305                            Spector, Mr. Woolf    male   NaN
414         1306                  Oliva y Ocana, Dona. Fermina  female  39.0
415         1307                  Saether, Mr. Simon Sivertsen    male  38.5
416         1308                           Ware, Mr. Frederick    male   NaN
417         1309                      Peter, Master. Michael J    male   NaN

     SibSp  Parch              Ticket      Fare Cabin Embarked
0        0      0              330911    7.8292   NaN        Q
1        1      0              363272    7.0000   NaN        S
2        0      0              240276    9.6875   NaN        Q
3        0      0              315154    8.6625   NaN        S
4        1      1             3101298   12.2875   NaN        S
..     …    …                 …       …   …      …
```

```
413      0      0           A.5. 3236     8.0500  NaN        S
414      0      0            PC 17758   108.9000 C105        C
415      0      0  SOTON/O.Q. 3101262     7.2500  NaN        S
416      0      0              359309     8.0500  NaN        S
417      1      1                2668    22.3583  NaN        C

[418 rows x 10 columns]
```

[107]:

```python
titanic.drop(titanic.columns[0:2],axis=1)
```

[107]:

```
                                             Name     Sex   Age  SibSp  Parch  \
0                                Kelly, Mr. James    male  34.5      0      0
1                Wilkes, Mrs. James (Ellen Needs)  female  47.0      1      0
2                       Myles, Mr. Thomas Francis    male  62.0      0      0
3                                Wirz, Mr. Albert    male  27.0      0      0
4    Hirvonen, Mrs. Alexander (Helga E Lindqvist)  female  22.0      1      1
..                                              …     …   …      …    …
413                            Spector, Mr. Woolf    male   NaN      0      0
414                  Oliva y Ocana, Dona. Fermina  female  39.0      0      0
415                  Saether, Mr. Simon Sivertsen    male  38.5      0      0
416                           Ware, Mr. Frederick    male   NaN      0      0
417                     Peter, Master. Michael J    male   NaN      1      1

                 Ticket      Fare Cabin Embarked
0                330911    7.8292   NaN        Q
1                363272    7.0000   NaN        S
2                240276    9.6875   NaN        Q
3                315154    8.6625   NaN        S
4               3101298   12.2875   NaN        S
..                  …       …   …      …
413           A.5. 3236    8.0500   NaN        S
414            PC 17758  108.9000  C105        C
415  SOTON/O.Q. 3101262    7.2500   NaN        S
416              359309    8.0500   NaN        S
417                2668   22.3583   NaN        C

[418 rows x 9 columns]
```

[109]:

```python
titanic.drop(titanic.columns[2:5],axis=1)
```

[109]:

```
     PassengerId  Pclass  SibSp  Parch              Ticket      Fare Cabin   \
0            892       3      0      0              330911    7.8292   NaN
1            893       3      1      0              363272    7.0000   NaN
2            894       2      0      0              240276    9.6875   NaN
3            895       3      0      0              315154    8.6625   NaN
4            896       3      1      1             3101298   12.2875   NaN
..             …     …     …    …                  …       …   …
```

```
413         1305       3      0      0           A.5. 3236    8.0500   NaN
414         1306       1      0      0            PC 17758  108.9000  C105
415         1307       3      0      0  SOTON/O.Q. 3101262    7.2500   NaN
416         1308       3      0      0              359309    8.0500   NaN
417         1309       3      1      1                2668   22.3583   NaN

    Embarked
0          Q
1          S
2          Q
3          S
4          S
..       …
413        S
414        C
415        S
416        S
417        C

[418 rows x 8 columns]
```

4 Deleting a Row

[110]:

```
titanic.head(3)
```

[110]:

```
   PassengerId  Pclass                              Name     Sex   Age  SibSp   \
0          892       3                  Kelly, Mr. James    male  34.5      0
1          893       3  Wilkes, Mrs. James (Ellen Needs)  female  47.0      1
2          894       2         Myles, Mr. Thomas Francis    male  62.0      0

   Parch  Ticket    Fare Cabin Embarked
0      0  330911  7.8292   NaN        Q
1      0  363272  7.0000   NaN        S
2      0  240276  9.6875   NaN        Q
```

[114]:

```
titanic.drop(0,axis=0)
```

[114]:

```
     PassengerId  Pclass                                          Name   \
1            893       3              Wilkes, Mrs. James (Ellen Needs)
2            894       2                     Myles, Mr. Thomas Francis
3            895       3                              Wirz, Mr. Albert
4            896       3  Hirvonen, Mrs. Alexander (Helga E Lindqvist)
5            897       3                    Svensson, Mr. Johan Cervin
..           …     …                                           …
413         1305       3                            Spector, Mr. Woolf
414         1306       1                  Oliva y Ocana, Dona. Fermina
```

```
415         1307       3                  Saether, Mr. Simon Sivertsen
416         1308       3                           Ware, Mr. Frederick
417         1309       3                      Peter, Master. Michael J

        Sex   Age  SibSp  Parch              Ticket      Fare Cabin Embarked
1    female  47.0      1      0              363272    7.0000   NaN        S
2      male  62.0      0      0              240276    9.6875   NaN        Q
3      male  27.0      0      0              315154    8.6625   NaN        S
4    female  22.0      1      1             3101298   12.2875   NaN        S
5      male  14.0      0      0                7538    9.2250   NaN        S
..      …   …    …    …                 …       …   …      …
413    male   NaN      0      0           A.5. 3236    8.0500   NaN        S
414  female  39.0      0      0            PC 17758  108.9000  C105        C
415    male  38.5      0      0  SOTON/O.Q. 3101262    7.2500   NaN        S
416    male   NaN      0      0              359309    8.0500   NaN        S
417    male   NaN      1      1                2668   22.3583   NaN        C

[417 rows x 11 columns]
```

[116]:

```
titanic.drop([2,3,5,7,9],axis=0)
```

[116]:

```
     PassengerId  Pclass                                          Name  \
0            892       3                              Kelly, Mr. James
1            893       3              Wilkes, Mrs. James (Ellen Needs)
4            896       3  Hirvonen, Mrs. Alexander (Helga E Lindqvist)
6            898       3                          Connolly, Miss. Kate
8            900       3     Abrahim, Mrs. Joseph (Sophie Halaut Easu)
..           …     …                                           …
413         1305       3                            Spector, Mr. Woolf
414         1306       1                  Oliva y Ocana, Dona. Fermina
415         1307       3                  Saether, Mr. Simon Sivertsen
416         1308       3                           Ware, Mr. Frederick
417         1309       3                      Peter, Master. Michael J

        Sex   Age  SibSp  Parch              Ticket      Fare Cabin Embarked
0      male  34.5      0      0              330911    7.8292   NaN        Q
1    female  47.0      1      0              363272    7.0000   NaN        S
4    female  22.0      1      1             3101298   12.2875   NaN        S
6    female  30.0      0      0              330972    7.6292   NaN        Q
8    female  18.0      0      0                2657    7.2292   NaN        C
..      …   …    …    …                 …       …   …      …
413    male   NaN      0      0           A.5. 3236    8.0500   NaN        S
414  female  39.0      0      0            PC 17758  108.9000  C105        C
415    male  38.5      0      0  SOTON/O.Q. 3101262    7.2500   NaN        S
416    male   NaN      0      0              359309    8.0500   NaN        S
417    male   NaN      1      1                2668   22.3583   NaN        C
```

```
[413 rows x 11 columns]
```

```
[119]: titanic[titanic["Age"] != "male"]
```

```
[119]:
     PassengerId  Pclass                                          Name  \
0            892       3                              Kelly, Mr. James
1            893       3              Wilkes, Mrs. James (Ellen Needs)
2            894       2                     Myles, Mr. Thomas Francis
3            895       3                              Wirz, Mr. Albert
4            896       3  Hirvonen, Mrs. Alexander (Helga E Lindqvist)
..           …     …                                           …
413         1305       3                            Spector, Mr. Woolf
414         1306       1                  Oliva y Ocana, Dona. Fermina
415         1307       3                  Saether, Mr. Simon Sivertsen
416         1308       3                           Ware, Mr. Frederick
417         1309       3                      Peter, Master. Michael J

        Sex   Age  SibSp  Parch              Ticket      Fare Cabin Embarked
0      male  34.5      0      0              330911    7.8292   NaN        Q
1    female  47.0      1      0              363272    7.0000   NaN        S
2      male  62.0      0      0              240276    9.6875   NaN        Q
3      male  27.0      0      0              315154    8.6625   NaN        S
4    female  22.0      1      1             3101298   12.2875   NaN        S
..      …   …    …    …                 …       …   …      …
413    male   NaN      0      0           A.5. 3236    8.0500   NaN        S
414  female  39.0      0      0            PC 17758  108.9000  C105        C
415    male  38.5      0      0  SOTON/O.Q. 3101262    7.2500   NaN        S
416    male   NaN      0      0              359309    8.0500   NaN        S
417    male   NaN      1      1                2668   22.3583   NaN        C

[418 rows x 11 columns]
```

5 You want to drop duplicated rows from you’r DataFrame

```
[130]: titanic.drop_duplicates()
```

```
[130]:
     PassengerId  Pclass                                          Name  \
0            892       3                              Kelly, Mr. James
1            893       3              Wilkes, Mrs. James (Ellen Needs)
2            894       2                     Myles, Mr. Thomas Francis
3            895       3                              Wirz, Mr. Albert
4            896       3  Hirvonen, Mrs. Alexander (Helga E Lindqvist)
..           …     …                                           …
413         1305       3                            Spector, Mr. Woolf
414         1306       1                  Oliva y Ocana, Dona. Fermina
415         1307       3                  Saether, Mr. Simon Sivertsen
```

```
416         1308       3                           Ware, Mr. Frederick
417         1309       3                      Peter, Master. Michael J

        Sex   Age  SibSp  Parch              Ticket      Fare Cabin Embarked
0      male  34.5      0      0              330911    7.8292   NaN        Q
1    female  47.0      1      0              363272    7.0000   NaN        S
2      male  62.0      0      0              240276    9.6875   NaN        Q
3      male  27.0      0      0              315154    8.6625   NaN        S
4    female  22.0      1      1             3101298   12.2875   NaN        S
..      …   …    …    …                 …       …   …      …
413    male   NaN      0      0           A.5. 3236    8.0500   NaN        S
414  female  39.0      0      0            PC 17758  108.9000  C105        C
415    male  38.5      0      0  SOTON/O.Q. 3101262    7.2500   NaN        S
416    male   NaN      0      0              359309    8.0500   NaN        S
417    male   NaN      1      1                2668   22.3583   NaN        C

[418 rows x 11 columns]
```

[134]:

```
titanic.nunique()
```

[134]:

```
PassengerId    418
Pclass           3
Name           418
Sex              2
Age             79
SibSp            7
Parch            8
Ticket         363
Fare           169
Cabin           76
Embarked         3
dtype: int64
```

Drop duplicates values in the perticular columns

[135]:

```
titanic.drop_duplicates(subset=["Sex"])
```

[135]:

```
   PassengerId  Pclass                              Name     Sex   Age  SibSp  \
0          892       3                  Kelly, Mr. James    male  34.5      0
1          893       3  Wilkes, Mrs. James (Ellen Needs)  female  47.0      1

   Parch  Ticket    Fare Cabin Embarked
0      0  330911  7.8292   NaN        Q
1      0  363272  7.0000   NaN        S
```

[136]:

```
titanic.drop_duplicates(subset="Pclass")
```

```
[136]:     PassengerId  Pclass                        Name   Sex   Age  SibSp  Parch  \
       0           892       3            Kelly, Mr. James  male  34.5      0      0
       2           894       2   Myles, Mr. Thomas Francis  male  62.0      0      0
       11          903       1  Jones, Mr. Charles Cresson  male  46.0      0      0

           Ticket     Fare Cabin Embarked
       0   330911   7.8292   NaN        Q
       2   240276   9.6875   NaN        Q
       11     694  26.0000   NaN        S
```

```
[ ]:
```