

File Edit View Insert Cell Kernel Widgets Help Not Trusted | Python 3 (ipykernel) O

```
In [1]: # importar pandas
!pip install pandas

Requirement already satisfied: pandas in c:\users\user\anaconda3\lib\site-packages (1.3.4)
Requirement already satisfied: python-dateutil>=2.7.3 in c:\users\user\anaconda3\lib\site-packages (from pandas) (2.8.2)
Requirement already satisfied: pytz>=2017.3 in c:\users\user\anaconda3\lib\site-packages (from pandas) (2021.3)
Requirement already satisfied: numpy>=1.17.3 in c:\users\user\anaconda3\lib\site-packages (from pandas) (1.20.3)
Requirement already satisfied: six>=1.5 in c:\users\user\anaconda3\lib\site-packages (from python-dateutil>=2.7.3->pandas) (1.16.0)
```

```
In [2]: import pandas as pd
```

```
In [3]: # Crea una Serie de los numeros 10, 20 and 10.
```

```
serie1 = pd.Series( [ 10 , 20 , 10 ] );
print(serie1)
```

```
0    10
1    20
2    10
dtype: int64
```

```
In [4]: # Crea una serie con tres objetos: 'rojo', 'verde', 'azul'
```

```
serie2 = pd.Series( [ 'rojo' , 'verde' , 'azul' ] );
print(serie2)
```

```
0    rojo
1    verde
2    azul
dtype: object
```

```
In [5]: # Crea un dataframe vacio llamado 'df'
```

```
df = pd.DataFrame()
```

```
In [6]: # Crea una nueva columna en el dataframe, y asigne la primera serie que has creado
```

```
df['Serie 1'] = serie1
df.head()
```

Out[6]:

	Serie 1
0	10
1	20
2	10

```
In [7]: # Crea otra columna en el dataframe y asigne la segunda Serie que has creado
```

```
df['Serie 2'] = serie2
df.head()
```

Out[7]:

	Serie 1	Serie 2
0	10	rojo
1	20	verde
2	10	azul

```
In [8]: # Lee el archivo llamado 'avengers.csv' localizado en la carpeta "data" y crea un DataFrame, llamado 'avengers'.
```

```
# El archivo está localizado en "data/avengers.csv"
```

```
df = pd.read_csv ( 'avengers.csv' , sep = ',' )
```

```
In [9]: # Muestra las primeras 5 filas del DataFrame
```

```
df.head()
```

Out[9]:

	URL	nombre	n_apariciones	actual	genero	fecha_inicio	Notes
0	http://marvel.wikia.com/Henry_Pym_(Earth-616)	Henry Jonathan "Hank" Pym	1269	YES	MALE	1963	Merged with Ultron in Rage of Ultron Vol. 1 A...
1	http://marvel.wikia.com/Janet_van_Dyne_(Earth-616)	Janet van Dyne	1165	YES	FEMALE	1963	Dies in Secret Invasion V1:18. Actually was se...
2	http://marvel.wikia.com/Anthony_Stark_(Earth-616)	Anthony Edward "Tony" Stark	3068	YES	MALE	1963	Death: "Later while under the influence of Imm...
3	http://marvel.wikia.com/Robert_Bruce_Banner_(Earth-616)	Robert Bruce Banner	2089	YES	MALE	1963	Dies in Ghosts of the Future arc. However he ...
4	http://marvel.wikia.com/Thor_Odinson_(Earth-616)	Thor Odinson	2402	YES	MALE	1963	Dies in Fear Itself brought back because that...

```
In [10]: # Muestra las primeras 10 filas del DataFrame
```

```
df.head(10)
```

Out[10]:

	URL	nombre	n_apariciones	actual	genero	fecha_inicio	Notes
0	http://marvel.wikia.com/Henry_Pym_(Earth-616)	Henry Jonathan "Hank" Pym	1269	YES	MALE	1963	Merged with Ultron in Rage of Ultron Vol. 1 A...
1	http://marvel.wikia.com/Janet_van_Dyne_(Earth-616)	Janet van Dyne	1165	YES	FEMALE	1963	Dies in Secret Invasion V1:18. Actually was se...
2	http://marvel.wikia.com/Anthony_Stark_(Earth-616)	Anthony Edward "Tony" Stark	3068	YES	MALE	1963	Death: "Later while under the influence of Imm...
3	http://marvel.wikia.com/Robert_Bruce_Banner_(Earth-616)	Robert Bruce Banner	2089	YES	MALE	1963	Dies in Ghosts of the Future arc. However he ...
4	http://marvel.wikia.com/Thor_Odinson_(Earth-616)	Thor Odinson	2402	YES	MALE	1963	Dies in Fear Itself brought back because that...

5	http://marvel.wikia.com/Richard_Jones_(Earth-616)	Richard Milhouse Jones	612	YES	MALE	1963		NaN
6	http://marvel.wikia.com/Steven_Rogers_(Earth-616)	Steven Rogers	3458	YES	MALE	1964	Dies at the end of Civil War. Later comes back.	
7	http://marvel.wikia.com/Clint_Barton_(Earth-616)	Clinton Francis Barton	1456	YES	MALE	1965	Dies in exploding Kree ship in Avengers Vol ...	
8	http://marvel.wikia.com/Pietro_Maximoff_(Earth-616)	Pietro Maximoff	769	YES	MALE	1965	Dies in House of M Vol 1 Issue 7. Later comes ...	
9	http://marvel.wikia.com/Wanda_Maximoff_(Earth-616)	Wanda Maximoff	1214	YES	FEMALE	1965	Dies in Uncanny_Avengers_Vol_1_14. Later comes...	

In [11]: # Muestra las últimas 5 filas del DataFrame

```
df.tail()
```

Out[11]:

	URL	nombre	n_apariciones	actual	genero	fecha_inicio	Notes
168	http://marvel.wikia.com/Eric_Brooks_(Earth-616)#!	Eric Brooks	198	YES	MALE	2013	NaN
169	http://marvel.wikia.com/Adam_Brashear_(Earth-616)#!	Adam Brashear	29	YES	MALE	2014	NaN
170	http://marvel.wikia.com/Victor_Alvarez_(Earth-616)#!	Victor Alvarez	45	YES	MALE	2014	NaN
171	http://marvel.wikia.com/Ava_Ayala_(Earth-616)#!	Ava Ayala	49	YES	FEMALE	2014	NaN
172	http://marvel.wikia.com/Kaluu_(Earth-616)#!	Kaluu	35	YES	MALE	2015	NaN

In [12]: # Muestra el tamaño del DataFrame

```
df.shape
```

Out[12]: (173, 7)

In [13]: df.describe()

Out[13]:

	n_apariciones	fecha_inicio
count	173.000000	173.000000
mean	414.052023	1988.445087
std	677.991950	30.374669
min	2.000000	1900.000000
25%	58.000000	1979.000000
50%	132.000000	1996.000000
75%	491.000000	2010.000000
max	4333.000000	2015.000000

In [14]: # Muestra los data types del dataframe

```
df.dtypes
```

Out[14]: URL: object  
nombre: object  
n\_apariciones: int64  
actual: object  
genero: object  
fecha\_inicio: int64  
Notes: object  
dtype: object

In [15]: # Cambia el indice a la columna "fecha\_inicio"

```
df.set_index("fecha_inicio")
```

Out[15]:

fecha_inicio	URL	nombre	n_apariciones	actual	genero	Notes
1963	http://marvel.wikia.com/Henry_Pym_(Earth-616)	Henry Jonathan "Hank" Pym	1269	YES	MALE	Merged with Ultron in Rage of Ultron Vol. 1 A...
1963	http://marvel.wikia.com/Janet_van_Dyne_(Earth-616)#!	Janet van Dyne	1165	YES	FEMALE	Dies in Secret Invasion V1:18. Actually was se...
1963	http://marvel.wikia.com/Anthony_Stark_(Earth-616)	Anthony Edward "Tony" Stark	3068	YES	MALE	Death: "Later while under the influence of Imm...
1963	http://marvel.wikia.com/Robert_Bruce_Banner_(Earth-616)#!	Robert Bruce Banner	2089	YES	MALE	Dies in Ghosts of the Future arc. However "he ..."
1963	http://marvel.wikia.com/Thor_Odinson_(Earth-616)#!	Thor Odinson	2402	YES	MALE	Dies in Fear Itself brought back because that...
...	...	...	...	...	...	...
2013	http://marvel.wikia.com/Eric_Brooks_(Earth-616)#!	Eric Brooks	198	YES	MALE	NaN
2014	http://marvel.wikia.com/Adam_Brashear_(Earth-616)#!	Adam Brashear	29	YES	MALE	NaN
2014	http://marvel.wikia.com/Victor_Alvarez_(Earth-616)#!	Victor Alvarez	45	YES	MALE	NaN
2014	http://marvel.wikia.com/Ava_Ayala_(Earth-616)#!	Ava Ayala	49	YES	FEMALE	NaN
2015	http://marvel.wikia.com/Kaluu_(Earth-616)#!	Kaluu	35	YES	MALE	NaN

173 rows × 6 columns

In [16]: # Ordena el indice de forma descendiente

```
df = df.set_index("fecha_inicio")
df.sort_index(ascending = False)
```

Out[16]:

fecha_inicio	URL	nombre	n_apariciones	actual	genero	Notes
2015	http://marvel.wikia.com/Kaluu_(Earth-616)#!	Kaluu	35	YES	MALE	NaN
2015	http://marvel.wikia.com/Sam_Alexander_(Earth-616)#!	Sam Alexander	78	YES	MALE	NaN
2014	http://marvel.wikia.com/Ava_Ayala_(Earth-616)#!	Ava Ayala	49	YES	FEMALE	NaN
2014	http://marvel.wikia.com/Victor_Alvarez_(Earth-616)#!	Victor Alvarez	45	YES	MALE	NaN
2014	http://marvel.wikia.com/Adam_Brashear_(Earth-616)#!	Adam Brashear	29	YES	MALE	NaN
...	...	...	...	...	...	...
1900	http://marvel.wikia.com/Emery_Schaub_(Earth-616)#!	Emery Schaub	26	YES	MALE	NaN
1900	http://marvel.wikia.com/James_Santini_(Earth-616)#!	James Santini	40	YES	MALE	NaN
1900	http://marvel.wikia.com/Elvin_Haliday_(Earth-616)#!	Elvin Haliday	158	NO	MALE	NaN

```

1900 http://marvel.wikia.com/William_Baker_(Earth-6... William Baker 355 NO MALE Died in Identity_Disc_Vol_1_1. Later was reve...
1900 http://marvel.wikia.com/Julie_Power_(Earth-616) Julie Power 153 YES FEMALE NaN

```

173 rows × 6 columns

In [17]: # Resetea el índice

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

In [18]: df.head()

Out[18]:

	URL	nombre	n_apariciones	actual	genero	Notes
0	http://marvel.wikia.com/Henry_Pym_(Earth-616)	Henry Jonathan "Hank" Pym	1269	YES	MALE	Merged with Ultron in Rage of Ultron Vol. 1. A...
1	http://marvel.wikia.com/Janet_van_Dyne_(Earth-...	Janet van Dyne	1165	YES	FEMALE	Dies in Secret Invasion V1#8. Actually was se...
2	http://marvel.wikia.com/Anthony_Stark_(Earth-616)	Anthony Edward "Tony" Stark	3068	YES	MALE	Death: "Later while under the influence of Imm...
3	http://marvel.wikia.com/Robert_Bruce_Banner_(E...	Robert Bruce Banner	2089	YES	MALE	Dies in Ghosts of the Future arc. However he ...
4	http://marvel.wikia.com/Thor_Odinson_(Earth-616)	Thor Odinson	2402	YES	MALE	Dies in Fear Itself brought back because that'...

In [19]: # Ejercicio - Busqueda de Alojamiento en Airbnb

```
df_airbnb = pd.read_csv("airbnb.csv")
```

In [20]: df\_airbnb.head()

Out[20]:

	room_id	host_id	room_type	neighborhood	reviews	overall_satisfaction	accommodates	bedrooms	price
0	6499	14455	Entire home/apt	Belém	8	5.0	2	1.0	57.0
1	17031	66015	Entire home/apt	Alvalade	0	0.0	2	1.0	46.0
2	25659	107347	Entire home/apt	Santa Maria Maior	63	5.0	3	1.0	69.0
3	29248	125768	Entire home/apt	Santa Maria Maior	225	4.5	4	1.0	58.0
4	29396	126415	Entire home/apt	Santa Maria Maior	132	5.0	4	1.0	67.0

In [21]: # Caso 1

```
condicion1 = df_airbnb ['reviews'] > 10
condicion2 = df_airbnb ['overall_satisfaction'] > 4
```

```
filtro = df_airbnb [ condicion1 & condicion2 ]
filtro
```

Out[21]:

	room_id	host_id	room_type	neighborhood	reviews	overall_satisfaction	accommodates	bedrooms	price
2	25659	107347	Entire home/apt	Santa Maria Maior	63	5.0	3	1.0	69.0
3	29248	125768	Entire home/apt	Santa Maria Maior	225	4.5	4	1.0	58.0
4	29396	126415	Entire home/apt	Santa Maria Maior	132	5.0	4	1.0	67.0
5	29720	128075	Entire home/apt	Estrela	14	5.0	16	9.0	1154.0
6	29872	1286698	Entire home/apt	Alcântara	25	5.0	2	1.0	75.0
...	...	...	...	...	...	...	...	...	...
11986	18306197	126608904	Entire home/apt	Estrela	11	4.5	4	1.0	58.0
11992	18309403	15826725	Entire home/apt	Santa Maria Maior	11	5.0	7	3.0	113.0
11994	18311057	1266113630	Private room	Santa Maria Maior	11	5.0	1	1.0	23.0
12012	18322425	106306229	Private room	Penha de França	14	4.5	2	2.0	31.0
12051	18355475	74171605	Entire home/apt	Misericórdia	14	5.0	6	2.0	79.0

6121 rows × 9 columns

In [22]: filtro\_sorted = filtro.sort\_values ([ "overall\_satisfaction" , "reviews" ] , ascending = [ False , False ])
filtro\_sorted

Out[22]:

	room_id	host_id	room_type	neighborhood	reviews	overall_satisfaction	accommodates	bedrooms	price
120	176153	842219	Entire home/apt	Misericórdia	438	5.0	4	2.0	102.0
931	1085634	5968047	Entire home/apt	Misericórdia	379	5.0	2	1.0	52.0
212	299321	199452	Entire home/apt	Santo Antônio	337	5.0	2	1.0	87.0
324	447832	2223892	Entire home/apt	Misericórdia	318	5.0	3	1.0	80.0
16	44043	192830	Entire home/apt	Santa Maria Maior	316	5.0	7	3.0	80.0
...	...	...	...	...	...	...	...	...	...
11586	17974974	123450353	Entire home/apt	Misericórdia	11	4.5	6	2.0	75.0
11757	18127740	69562114	Entire home/apt	Ajudá	11	4.5	4	1.0	57.0
11773	18138730	125042217	Entire home/apt	Santa Maria Maior	11	4.5	3	1.0	68.0
11910	18260651	37385021	Entire home/apt	Belém	11	4.5	4	1.0	29.0
11986	18306197	126608904	Entire home/apt	Estrela	11	4.5	4	1.0	58.0

6121 rows × 9 columns

In [23]: filtro\_sorted.head(3)

Out[23]:

	room_id	host_id	room_type	neighborhood	reviews	overall_satisfaction	accommodates	bedrooms	price
120	176153	842219	Entire home/apt	Misericórdia	438	5.0	4	2.0	102.0
931	1085634	5968047	Entire home/apt	Misericórdia	379	5.0	2	1.0	52.0
212	299321	199452	Entire home/apt	Santo Antônio	337	5.0	2	1.0	87.0

In [24]: # Caso 2

```
filtrado = df_airbnb[ (df_airbnb.room_id == 97503) | (df_airbnb.room_id == 90387) ]
roberto = pd.DataFrame(filtrado)
filtrado
```

Out[24]:

	room_id	host_id	room_type	neighborhood	reviews	overall_satisfaction	accommodates	bedrooms	price
41	90387	490050	Private room	Santo Antônio	204	5.0	2	1.0	46.0
48	97503	515924	Private room	Santo Antônio	39	4.0	2	1.0	26.0

```
In [25]: roberto.to_excel('roberto.xlsx')

In [26]: # Caso 3

cond1 = df_airbnb ['price'] <= 50
cond2 = df_airbnb ['room_type'] == 'Shared room'

filtro2 = df_airbnb [ cond1 & cond2 ]
filtro2
```

Out[26]:

	room_id	host_id	room_type	neighborhood	reviews	overall_satisfaction	accommodates	bedrooms	price
204	286153	1489229	Shared room	Campolide	29	4.5	2	1.0	21.0
591	697493	3573506	Shared room	Campo de Ourique	0	0.0	10	1.0	18.0
1010	1179457	5799522	Shared room	Santo António	42	4.0	16	1.0	10.0
1141	1365083	6401752	Shared room	Areeiro	51	4.5	4	1.0	18.0
1160	1380975	6855202	Shared room	Santo António	2	0.0	1	1.0	21.0
...	...	...	...	...	...	...	...	...	...
12549	18790690	61255540	Shared room	Arroios	0	0.0	4	1.0	18.0
12551	18791292	61255540	Shared room	Arroios	0	0.0	6	1.0	32.0
12552	18791469	61255540	Shared room	Arroios	0	0.0	5	1.0	18.0
12949	19140465	133796231	Shared room	Marvila	0	0.0	2	1.0	22.0
13148	19314160	135270245	Shared room	Santa Clara	0	0.0	1	1.0	10.0

152 rows × 9 columns

```
In [27]: filtro2_sorted = filtro2.sort_values ([ "overall_satisfaction" , "price" ] , ascending = [ False , True ])
filtro2_sorted
```

Out[27]:

	room_id	host_id	room_type	neighborhood	reviews	overall_satisfaction	accommodates	bedrooms	price
9065	14933182	91501272	Shared room	Santo António	5	5.0	8	1.0	11.0
6056	10397682	32344156	Shared room	Misericórdia	15	5.0	8	1.0	13.0
7060	12299998	66077974	Shared room	Arroios	49	5.0	1	1.0	13.0
7066	12305540	66077974	Shared room	Arroios	40	5.0	1	1.0	13.0
8918	14719962	40574313	Shared room	Avenidas Novas	4	5.0	4	1.0	13.0
...	...	...	...	...	...	...	...	...	...
10265	16479635	105922671	Shared room	Misericórdia	2	0.0	10	1.0	45.0
11561	17953842	123079348	Shared room	Arroios	0	0.0	2	1.0	47.0
11563	17954348	123079348	Shared room	Arroios	1	0.0	2	1.0	47.0
10950	17377117	117425901	Shared room	Arroios	0	0.0	10	1.0	48.0
11547	17941583	123079348	Shared room	Arroios	0	0.0	3	1.0	49.0

152 rows × 9 columns

```
In [28]: filtro2_sorted.head(10)
```

Out[28]:

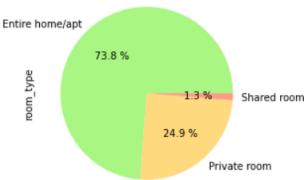
	room_id	host_id	room_type	neighborhood	reviews	overall_satisfaction	accommodates	bedrooms	price
9065	14933182	91501272	Shared room	Santo António	5	5.0	8	1.0	11.0
6056	10397682	32344156	Shared room	Misericórdia	15	5.0	8	1.0	13.0
7060	12299998	66077974	Shared room	Arroios	49	5.0	1	1.0	13.0
7066	12305540	66077974	Shared room	Arroios	40	5.0	1	1.0	13.0
8918	14719962	40574313	Shared room	Avenidas Novas	4	5.0	4	1.0	13.0
7034	12268067	66077974	Shared room	Arroios	96	5.0	1	1.0	16.0
9964	16150682	58899339	Shared room	Avenidas Novas	4	5.0	9	1.0	16.0
10723	17096560	107813252	Shared room	Areeiro	5	5.0	1	1.0	16.0
6459	11427995	32344156	Shared room	Misericórdia	21	5.0	8	1.0	18.0
11058	17497074	25913998	Shared room	Arroios	7	5.0	1	1.0	18.0

```
In [29]: # Caso Matplot
```

```
import matplotlib.pyplot as plt
```

```
In [30]: df_airbnb.room_type.value_counts().plot.pie(
    colors = [ "#AAF683" , "#FFD97D" , "#FF9B85" ],
    autopct = "%0.1f %"
)
```

Out[30]: <AxesSubplot:ylabel='room\_type'>



In [ ]: