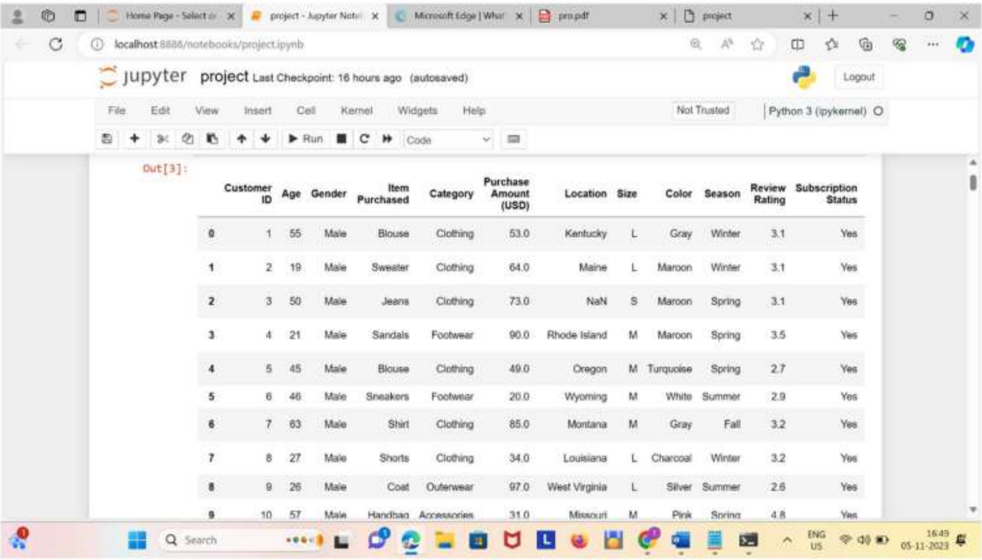
DATA PREPROCESSING

DATAFRAME CREATION:

```
#creating data frame from the csv file
import pandas as pd
df=pd.read_csv(r"C:\\Users\Nithesh\Downloads\shopping_trends.csv")
df
```

OUTPUT:

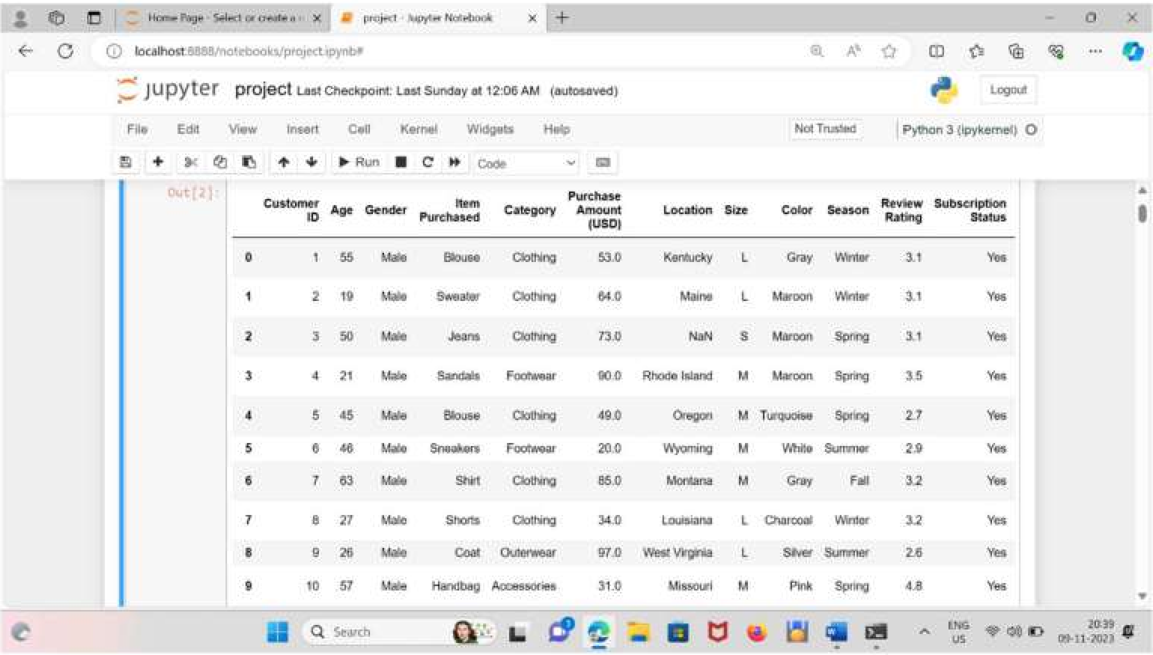


Out[3]:

	Customer ID	Age	Gender	Item Purchased	Category	Purchase Amount (USD)	Location	Size	Color	Season	Review Rating	Subscription Status
0	1	55	Male	Blouse	Clothing	53.0	Kentucky	L	Gray	Winter	3.1	Yes
1	2	19	Male	Sweater	Clothing	64.0	Maine	L	Maroon	Winter	3.1	Yes
2	3	50	Male	Jeans	Clothing	73.0	NaN	S	Maroon	Spring	3.1	Yes
3	4	21	Male	Sandals	Footwear	90.0	Rhode Island	M	Maroon	Spring	3.5	Yes
4	5	45	Male	Blouse	Clothing	49.0	Oregon	M	Turquoise	Spring	2.7	Yes
5	6	46	Male	Sneakers	Footwear	20.0	Wyoming	M	White	Summer	2.9	Yes
6	7	63	Male	Shirt	Clothing	85.0	Montana	M	Gray	Fall	3.2	Yes
7	8	27	Male	Shorts	Clothing	34.0	Louisiana	L	Charcoal	Winter	3.2	Yes
8	9	26	Male	Coat	Outerwear	97.0	West Virginia	L	Silver	Summer	2.6	Yes
9	10	57	Male	Handbag	Accessories	31.0	Missouri	M	Pink	Spring	4.8	Yes

Data Frame of Shopping trends dataset

Data Frame of Shopping trends dataset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Out[2]:

	Customer ID	Age	Gender	Item Purchased	Category	Purchase Amount (USD)	Location	Size	Color	Season	Review Rating	Subscription Status
0	1	55	Male	Blouse	Clothing	53.0	Kentucky	L	Gray	Winter	3.1	Yes
1	2	19	Male	Sweater	Clothing	64.0	Maine	L	Maroon	Winter	3.1	Yes
2	3	50	Male	Jeans	Clothing	73.0	NaN	S	Maroon	Spring	3.1	Yes
3	4	21	Male	Sandals	Footwear	90.0	Rhode Island	M	Maroon	Spring	3.5	Yes
4	5	45	Male	Blouse	Clothing	49.0	Oregon	M	Turquoise	Spring	2.7	Yes
5	6	46	Male	Sneakers	Footwear	20.0	Wyoming	M	White	Summer	2.9	Yes
6	7	63	Male	Shirt	Clothing	85.0	Montana	M	Gray	Fall	3.2	Yes
7	8	27	Male	Shorts	Clothing	34.0	Louisiana	L	Charcoal	Winter	3.2	Yes
8	9	26	Male	Coat	Outerwear	97.0	West Virginia	L	Silver	Summer	2.6	Yes
9	10	57	Male	Handbag	Accessories	31.0	Missouri	M	Pink	Spring	4.8	Yes

DATA PREPROCESSING:

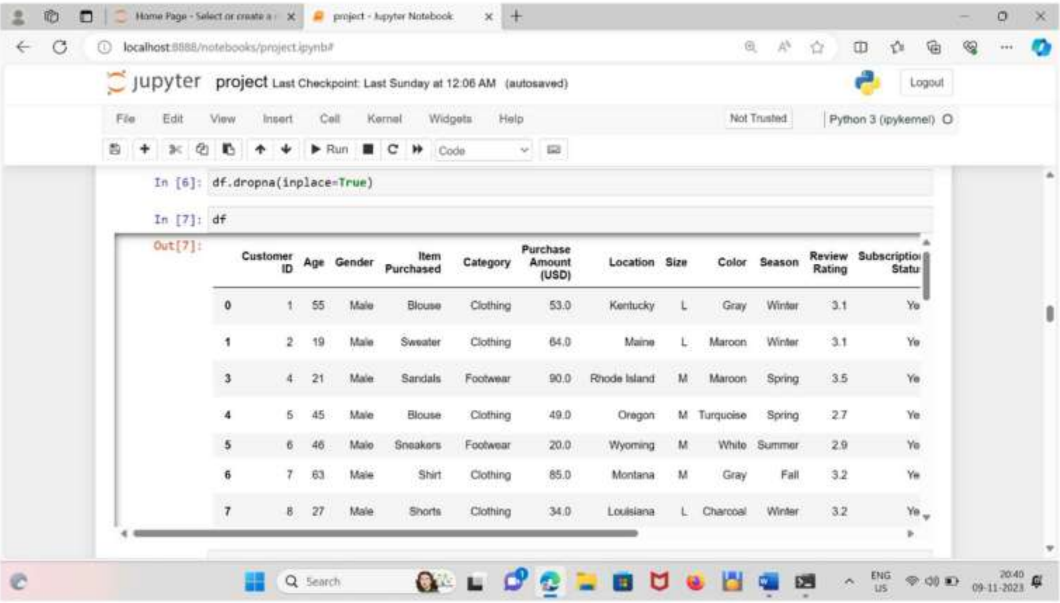
#Handling Missing Values

import pandas as pd

df=pd.read_csv(r"C:\\Users\Nithesh\Downloads\shopping_trends.csv")

df.dropna(inplace=True)

OUTPUT:



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```
In [6]: df.dropna(inplace=True)

In [7]: df

Out[7]:
```

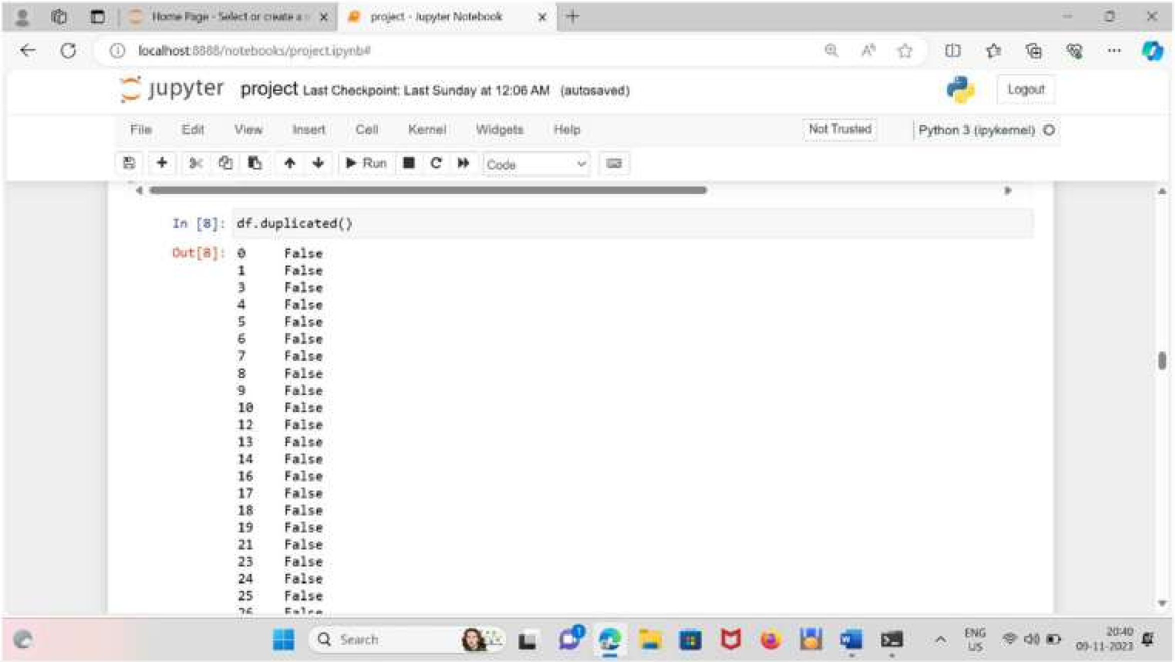
	Customer ID	Age	Gender	Item Purchased	Category	Purchase Amount (USD)	Location	Size	Color	Season	Review Rating	Subscriptio Statu
0	1	55	Male	Blouse	Clothing	53.0	Kentucky	L	Gray	Winter	3.1	Ye
1	2	19	Male	Sweater	Clothing	64.0	Maine	L	Maroon	Winter	3.1	Ye
3	4	21	Male	Sandals	Footwear	90.0	Rhode Island	M	Maroon	Spring	3.5	Ye
4	5	45	Male	Blouse	Clothing	49.0	Oregon	M	Turquoise	Spring	2.7	Ye
5	6	46	Male	Sneakers	Footwear	20.0	Wyoming	M	White	Summer	2.9	Ye
6	7	63	Male	Shirt	Clothing	85.0	Montana	M	Gray	Fall	3.2	Ye
7	8	27	Male	Shorts	Clothing	34.0	Louisiana	L	Charcoal	Winter	3.2	Ye

Handling Missing values

#Identifying the duplicates in a entire dataframe

df.duplicated()

OUTPUT:



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```
In [8]: df.duplicated()
```

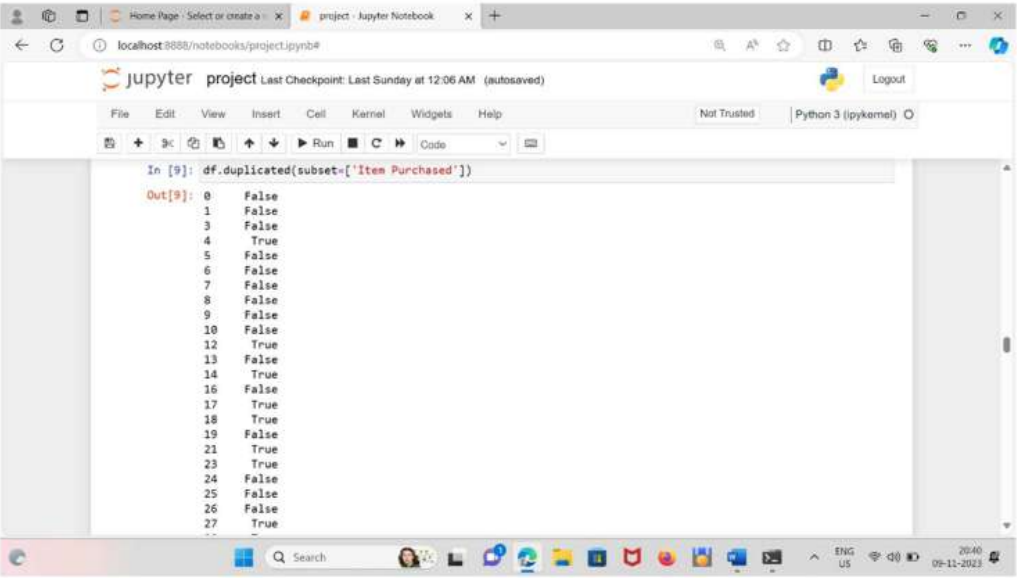
```
Out[8]: 0       False
        1       False
        3       False
        4       False
        5       False
        6       False
        7       False
        8       False
        9       False
        10      False
        12      False
        13      False
        14      False
        16      False
        17      False
        18      False
        19      False
        21      False
        23      False
        24      False
        25      False
        26      False
```

Duplicates in a Data Frame

#Identifying the duplicates in a particular column

df.duplicated(subset=['Item Purchased'])

OUTPUT:



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```
In [9]: df.duplicated(subset=['Item Purchased'])

Out[9]: 0     False
        1     False
        3     False
        4      True
        5     False
        6     False
        7     False
        8     False
        9     False
        10    False
        12     True
        13    False
        14     True
        16    False
        17     True
        18     True
        19    False
        21     True
        23     True
        24    False
        25    False
        26    False
        27     True
```

Duplicates in a particular column

#Removing the duplicates in a particular colum

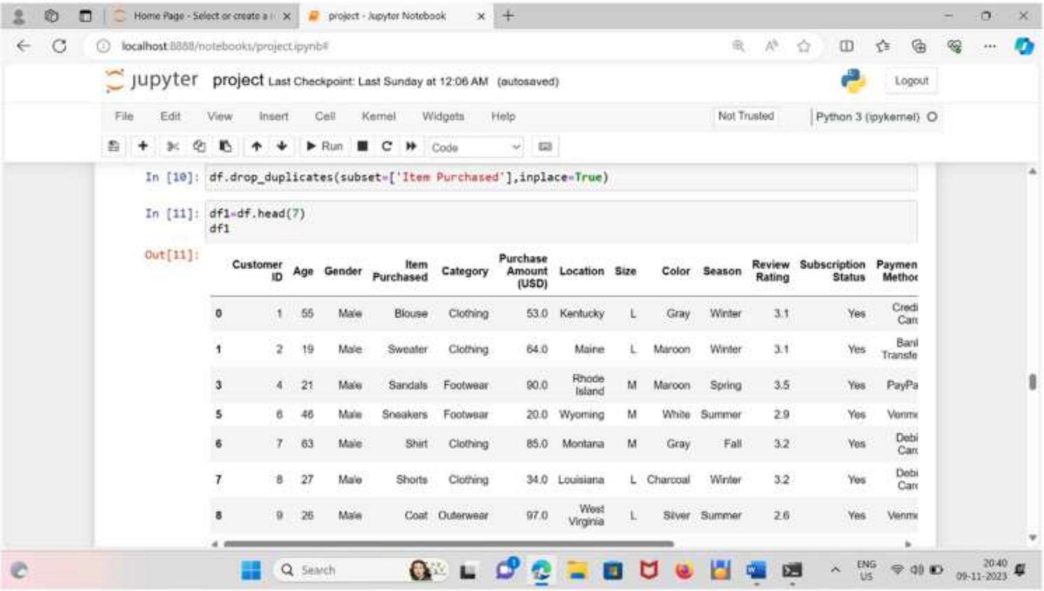
df.drop_duplicates(subset=['Item Purchased'],inplace=True)

#Accesing the top elements in a data frame using head

df1=df.head(7)

df1

OUTPUT:



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```
In [10]: df.drop_duplicates(subset=['Item Purchased'],inplace=True)

In [11]: df1=df.head(7)
         df1
```

Out[11]:

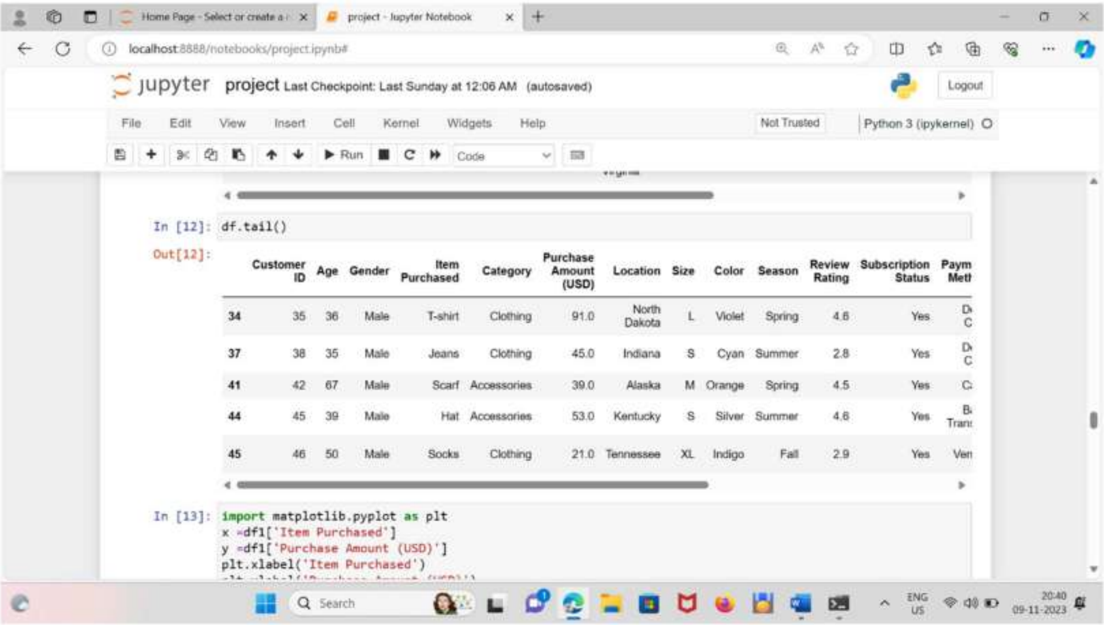
	Customer ID	Age	Gender	Item Purchased	Category	Purchase Amount (USD)	Location	Size	Color	Season	Review Rating	Subscription Status	Paymen Methoc
0	1	55	Male	Blouse	Clothing	53.0	Kentucky	L	Gray	Winter	3.1	Yes	Credi Carı
1	2	19	Male	Sweater	Clothing	64.0	Maine	L	Maroon	Winter	3.1	Yes	Banl Transfe
3	4	21	Male	Sandals	Footwear	90.0	Rhode Island	M	Maroon	Spring	3.5	Yes	PayPa
5	6	46	Male	Sneakers	Footwear	20.0	Wyoming	M	White	Summer	2.9	Yes	Venm
6	7	63	Male	Shirt	Clothing	85.0	Montana	M	Gray	Fall	3.2	Yes	Debi Carı
7	8	27	Male	Shorts	Clothing	34.0	Louisiana	L	Charcoal	Winter	3.2	Yes	Debi Carı
8	9	26	Male	Coat	Outerwear	97.0	West Virginia	L	Silver	Summer	2.6	Yes	Venm

Accessing top elements using head

#Accessing the bottom elements in a data frame using tail

df.tail()

OUTPUT:



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```
In [12]: df.tail()
```

Out[12]:

	Customer ID	Age	Gender	Item Purchased	Category	Purchase Amount (USD)	Location	Size	Color	Season	Review Rating	Subscription Status	Paym Meth
34	35	36	Male	T-shirt	Clothing	91.0	North Dakota	L	Violet	Spring	4.6	Yes	D C
37	38	35	Male	Jeans	Clothing	45.0	Indiana	S	Cyan	Summer	2.8	Yes	D C
41	42	67	Male	Scarf	Accessories	39.0	Alaska	M	Orange	Spring	4.5	Yes	C
44	45	39	Male	Hat	Accessories	53.0	Kentucky	S	Silver	Summer	4.6	Yes	B Trans
45	46	50	Male	Socks	Clothing	21.0	Tennessee	XL	Indigo	Fall	2.9	Yes	Ven

```
In [13]: import matplotlib.pyplot as plt
         x =df1['Item Purchased']
         y =df1['Purchase Amount (USD)']
         plt.xlabel('Item Purchased')
```

Accessing bottom elements using tail