notebook77b99f2c03

March 5, 2024

```
print("Hello world")
[1]:
    Hello world
    import pandas as pd
[7]: p=pd.read_excel("/kaggle/input/employr/SuperStoreUS-2015.xlsx")
     p
[7]:
           Row ID Order Priority
                                    Discount
                                              Unit Price
                                                            Shipping Cost
                                                                            Customer ID
                                                                                      3
     0
            20847
                             High
                                        0.01
                                                     2.84
                                                                     0.93
     1
            20228
                    Not Specified
                                        0.02
                                                   500.98
                                                                    26.00
                                                                                      5
     2
                                                                     7.29
            21776
                         Critical
                                        0.06
                                                     9.48
                                                                                     11
     3
            24844
                           Medium
                                        0.09
                                                    78.69
                                                                    19.99
                                                                                     14
     4
                           Medium
            24846
                                        0.08
                                                     3.28
                                                                     2.31
                                                                                     14
     1947
            19842
                                        0.01
                                                    10.90
                                                                     7.46
                                                                                   3397
                             High
                                                                     5.03
     1948
            19843
                             High
                                        0.10
                                                     7.99
                                                                                   3397
                    Not Specified
                                                                     5.81
     1949
            26208
                                        0.08
                                                    11.97
                                                                                   3399
     1950
            24911
                           Medium
                                        0.10
                                                     9.38
                                                                     4.93
                                                                                   3400
     1951
            25914
                             High
                                        0.10
                                                   105.98
                                                                    13.99
                                                                                   3403
                Customer Name
                                     Ship Mode Customer Segment Product Category
     0
                Bonnie Potter
                                   Express Air
                                                                   Office Supplies
                                                       Corporate
     1
              Ronnie Proctor
                                Delivery Truck
                                                     Home Office
                                                                          Furniture
     2
                Marcus Dunlap
                                   Regular Air
                                                     Home Office
                                                                          Furniture
     3
           Gwendolyn F Tyson
                                   Regular Air
                                                  Small Business
                                                                          Furniture
     4
           Gwendolyn F Tyson
                                   Regular Air
                                                  Small Business
                                                                   Office Supplies
     1947
                  Andrea Shaw
                                   Regular Air
                                                  Small Business
                                                                   Office Supplies
                                                  Small Business
     1948
                  Andrea Shaw
                                   Regular Air
                                                                         Technology
     1949
                  Marvin Reid
                                   Regular Air
                                                  Small Business
                                                                   Office Supplies
     1950
                Florence Gold
                                   Express Air
                                                  Small Business
                                                                          Furniture
                                                                          Furniture
     1951
                                   Express Air
                                                        Consumer
                Tammy Buckley
               Region State or Province
                                                   City Postal Code Order Date
     0
                  West
                                                                98221 2015-01-07
                               Washington
                                              Anacortes
     1
                  West
                               California San Gabriel
                                                                91776 2015-06-13
```

2	•••	East	Ne	w Jersey	Ros	elle		7203	2015-0	2-15
3	•••	Central	M	innesota	Prior	Lake	5	5372	2015-0	5-12
4		Central	M	innesota	Prior	Lake	5	5372	2015-0	5-12
•••		•••		•••	•••		•••	•••		
1947		Central		Illinois	Danv	ille	6	1832	2015-0	3-11
1948	•••	Central		Illinois	Danv	ille	6	1832	2015-0	3-11
1949	•••	Central		Illinois	Des Pla	ines	6	0016	2015-0	3-29
1950	•••	East	West	Virginia	Fair	mont	2	6554	2015-04	4-04
1951	•••	West		Wyoming	Chey	enne	8	2001	2015-0	2-08
	Sh	ip Date	Profit	Quantity	ordered	new	Sales	Orde	er ID	
0	201	5-01-08	4.5600			4	13.01	. 8	38522	
1	201	5-06-15	4390.3665			12	6362.85	5 9	90193	
2	201	5-02-17	-53.8096			22	211.15	5 9	90192	
3	201	5-05-14	803.4705			16	1164.45	5 6	36838	
4	201	5-05-13	-24.0300			7	22.23	8	36838	
•••		•••	•••		•••		•••			
1947	201	5-03-12	-116.7600			18	207.31	. 8	37536	
1948	201	5-03-12	-160.9520			22	143.12	? 8	37536	
1949	201	5-03-31	-41.8700			5	59.98	8 8	37534	
1950	201	5-04-04	-24.7104			15	135.78	8 8	37537	
1951	201	5-02-11	349.4850			5	506.50) {	37530	

[1952 rows x 25 columns]

[8]: p.head(15)

[O]	D TD	0.1. 5	D		a	G . TD	,
[8]:		Order Priority			Shipping Cost		\
0	20847	High	0.01	2.84	0.93	3	
1	20228	Not Specified	0.02	500.98	26.00	5	
2	21776	Critical	0.06	9.48	7.29	11	
3	24844	Medium	0.09	78.69	19.99	14	
4	24846	Medium	0.08	3.28	2.31	14	
5	24847	Medium	0.05	3.28	4.20	14	
6	24848	Medium	0.05	3.58	1.63	14	
7	18181	Critical	0.00	4.42	4.99	15	
8	20925	Medium	0.01	35.94	6.66	15	
9	26267	High	0.04	2.98	1.58	16	
10	26268	High	0.05	115.99	2.50	16	
11	23890	High	0.05	26.48	6.93	18	
12	24063	Not Specified	0.07	12.99	9.44	19	
13	5890	High	0.05	26.48	6.93	21	
14	6062	Not Specified	0.08	5.00	3.39	21	
		G	G1 : 16				
		Customer Name	_		_	uct Category \	
0		Bonnie Potter	Express A	lir	Corporate Off	ice Supplies	
1	I	Ronnie Proctor	Delivery Tru	ıck Ho	me Office	Furniture	

2	Marcus Dunlap	Regular	Air 1	Home Office	Furniture
3	Gwendolyn F Tyson	Regular	Air Sma	ll Business	Furniture
4	Gwendolyn F Tyson	Regular	Air Sma	ll Business	Office Supplies
5	Gwendolyn F Tyson	Regular	Air Smal	ll Business	Office Supplies
6	Gwendolyn F Tyson	Regular	Air Smal	ll Business	Office Supplies
7	Timothy Reese	Regular	Air Sma	ll Business	Office Supplies
8	Timothy Reese	Regular	Air Sma	ll Business	Office Supplies
9	Sarah Ramsey	Regular	Air Sma	ll Business	Office Supplies
10	Sarah Ramsey	Regular	Air Sma	ll Business	Technology
11	Laurie Hanna	Regular	Air Sma	ll Business	Furniture
12	Jim Rodgers	Regular	Air Sma	ll Business	Technology
13	Tony Wilkins Winters	Regular	Air Sma	ll Business	Furniture
14	Tony Wilkins Winters	Regular	Air Sma	ll Business	Office Supplies
	Region State or Pro		Cit		ode Order Date \
0	West Washi	•	Anacorte		221 2015-01-07
1	West Califo		San Gabrie		776 2015-06-13
2	East New Jo	•	Roselle	-	203 2015-02-15
3			Prior Lake		372 2015-05-12
4			Prior Lake		372 2015-05-12
5			Prior Lake		372 2015-05-12
6			Prior Lake		372 2015-05-12
7	T	York	Smithtown		787 2015-04-08
8		York	Smithtown		787 2015-05-28
9		York	Syracus		210 2015-02-12
10		York	Syracus		210 2015-02-12
11		ntana	Helena		301 2015-05-15
12		ntana Varria Narr	Missoula Varda Cita		301 2015-05-21
13 14			York City	•	012 2015-05-15 012 2015-05-21
14	East New	York New	York Cit	y 100	712 2015-05-21
	Ship Date Profit Qua	antity ord	lered new	Sales Ord	der TD
0	2015-01-08 4.5600	,	4	13.01	88522
1	2015-06-15 4390.3665		12	6362.85	90193
2	2015-02-17 -53.8096		22	211.15	90192
3	2015-05-14 803.4705		16	1164.45	86838
4	2015-05-13 -24.0300		7	22.23	86838
5	2015-05-13 -37.0300		4	13.99	86838
6	2015-05-13 -0.7100		4	14.26	86838
	2015-04-09 -59.8200		7	33.47	86837
8	2015-05-28 261.8757		10	379.53	86839
9	2015-02-15 2.6300		6	18.80	86836
10	2015-02-14 652.7331		10	945.99	86836
11	2015-05-16 314.4813		17	455.77	90031
12	2015-05-23 -114.6399		18	231.79	90032
13	2015-05-16 384.3800		70	1876.69	41793
14	2015-05-22 -17.4900		58	293.06	42949

101	[p.isnul]

[9]:		d method DataF			Row ID (Order Prio	rity Discou	nt Unit
	Price	Shipping Cost 20847		0.01	2.8	2.4	0.03	2
	0		High		500.9		0.93	3 5
	2		pecified Critical	0.02 0.06	9.4		26.00 7.29	11
	3			0.08				
	4	24844	Medium		78.6		19.99 2.31	14
		24846	Medium	0.08	3.2	20		14
	 1947	 19842	High	0.01	10.9		 7.46	3397
	1948	19843	High	0.10	7.9		5.03	3397
	1949		pecified	0.10	11.9		5.81	3399
	1950	24911	Medium	0.10	9.3		4.93	3400
	1951	25914	High	0.10	105.9		13.99	3403
	1901	20014	mgm	0.10	100.3	,0	10.99	0400
		Customer	Name	Ship Mode	Customer	Segment 1	Product Cate	gory \
	0	Bonnie Po	tter Ex	press Air	(Corporate	Office Supp	lies
	1	Ronnie Pro	ctor Deliv	ery Truck	Hon	ne Office	Furni	ture
	2	Marcus Du	nlap Re	gular Air	Hon	ne Office	Furni	ture
	3	Gwendolyn F T	yson Re	gular Air	Small	Business	Furni	ture
	4	Gwendolyn F T	yson Re	gular Air	Small	Business	Office Supp	lies
		•••		•••	••	•	•••	
	1947	Andrea	Shaw Re	gular Air	Small	Business	Office Supp	lies
	1948	Andrea	Shaw Re	gular Air	Small	Business	Techno	logy
	1949	Marvin 1	Reid Re	gular Air	Small	Business	Office Supp	lies
	1950	Florence	Gold Ex	press Air	Small	Business	Furni	ture
	1951	Tammy Buc	kley Ex	press Air		Consumer	Furni	ture
		Region St	ate or Prov	rince	City	Postal Co	ode Order Da	te \
	0	West	Washin		nacortes		221 2015-01-	
	1	West	Califo	•	Gabriel		776 2015-06-	
	2	East	New Je		Roselle		203 2015-02-	
	3	Central	Minne	•	ior Lake		372 2015-05-	
	4	Central	Minne		ior Lake		372 2015-05-	
		Central		nois I	Danville		832 2015-03-	11
	1948	Central			Danville		832 2015-03-	
	1949	Central			Plaines		016 2015-03-	
	4050	East	West Virg		Fairmont		554 2015-04-	
	1951	West	-	,	Cheyenne		001 2015-02-	
			, , ,	ū	•			
		Ship Date	Profit Qua	ntity orde	ered new	Sales (Order ID	
	0 2	2015-01-08	4.5600		4	13.01	88522	

```
1
           2015-06-15 4390.3665
                                                    12 6362.85
                                                                    90193
      2
           2015-02-17
                                                    22
                                                         211.15
                        -53.8096
                                                                    90192
      3
           2015-05-14
                        803.4705
                                                    16 1164.45
                                                                    86838
      4
                        -24.0300
                                                     7
                                                          22.23
           2015-05-13
                                                                    86838
                                                           •••
      1947 2015-03-12 -116.7600
                                                    18
                                                         207.31
                                                                    87536
      1948 2015-03-12 -160.9520
                                                    22
                                                         143.12
                                                                    87536
                                                     5
                                                          59.98
      1949 2015-03-31
                        -41.8700
                                                                    87534
      1950 2015-04-04
                        -24.7104
                                                    15
                                                         135.78
                                                                    87537
      1951 2015-02-11
                        349.4850
                                                     5
                                                         506.50
                                                                    87530
      [1952 rows x 25 columns]>
[11]: p.isnull().any()
[11]: Row ID
                              False
      Order Priority
                              False
      Discount
                              False
      Unit Price
                              False
      Shipping Cost
                               False
      Customer ID
                              False
      Customer Name
                              False
      Ship Mode
                               False
      Customer Segment
                               False
      Product Category
                               False
      Product Sub-Category
                               False
      Product Container
                               False
      Product Name
                               False
      Product Base Margin
                                True
                               False
      Country
      Region
                               False
      State or Province
                              False
                              False
      City
      Postal Code
                               False
      Order Date
                              False
      Ship Date
                               False
      Profit
                              False
      Quantity ordered new
                               False
      Sales
                               False
      Order ID
                               False
      dtype: bool
[12]: p.isnull().sum()
[12]: Row ID
                                0
```

0

0

Order Priority

Discount

```
Shipping Cost
                                0
      Customer ID
                                0
      Customer Name
                                0
      Ship Mode
                                0
      Customer Segment
                                0
      Product Category
                                0
      Product Sub-Category
                                0
      Product Container
                                0
      Product Name
                                0
      Product Base Margin
                               16
      Country
                                0
      Region
                                0
      State or Province
                                0
      City
                                0
      Postal Code
                                0
      Order Date
                                0
                                0
      Ship Date
                                0
      Profit
      Quantity ordered new
                                0
                                0
      Sales
      Order ID
                                0
      dtype: int64
[14]: p=p.drop(columns=['Region'])
      p.head()
[14]:
         Row ID Order Priority Discount
                                           Unit Price
                                                       Shipping Cost
                                                                       Customer ID
      0
          20847
                           High
                                     0.01
                                                  2.84
                                                                 0.93
                                                                                  3
          20228
                 Not Specified
                                     0.02
                                               500.98
                                                                26.00
                                                                                  5
      1
      2
          21776
                      Critical
                                     0.06
                                                  9.48
                                                                 7.29
                                                                                 11
          24844
                                     0.09
      3
                        Medium
                                                78.69
                                                                19.99
                                                                                 14
      4
                                     0.08
                                                  3.28
                                                                                 14
          24846
                        Medium
                                                                 2.31
             Customer Name
                                  Ship Mode Customer Segment Product Category
      0
             Bonnie Potter
                                Express Air
                                                    Corporate Office Supplies
      1
            Ronnie Proctor Delivery Truck
                                                 Home Office
                                                                     Furniture
      2
             Marcus Dunlap
                                Regular Air
                                                  Home Office
                                                                     Furniture
      3 Gwendolyn F Tyson
                                Regular Air
                                              Small Business
                                                                     Furniture ...
                                Regular Air
         Gwendolyn F Tyson
                                              Small Business
                                                               Office Supplies
               Country State or Province
                                                        Postal Code Order Date \
                                                  City
      0 United States
                               Washington
                                             Anacortes
                                                               98221 2015-01-07
      1 United States
                               California San Gabriel
                                                               91776 2015-06-13
      2 United States
                               New Jersey
                                               Roselle
                                                                7203 2015-02-15
      3 United States
                                            Prior Lake
                                                               55372 2015-05-12
                                Minnesota
      4 United States
                                Minnesota
                                            Prior Lake
                                                               55372 2015-05-12
```

Unit Price

0

```
4390.3665
                                                    12
                                                        6362.85
      1 2015-06-15
                                                                    90193
      2 2015-02-17
                      -53.8096
                                                    22
                                                         211.15
                                                                    90192
      3 2015-05-14
                      803.4705
                                                    16
                                                        1164.45
                                                                    86838
      4 2015-05-13
                      -24.0300
                                                     7
                                                          22.23
                                                                    86838
      [5 rows x 24 columns]
[50]: import pandas as pd
      import matplotlib.pyplot as plot
[51]: p=pd.read_excel("/kaggle/input/employr/SuperStoreUS-2015.xlsx")
      p
[51]:
            Row ID Order Priority Discount
                                               Unit Price
                                                            Shipping Cost
                                                                            Customer ID
      0
             20847
                                         0.01
                                                      2.84
                                                                      0.93
                                                                                       3
                              High
                                                                                       5
                                                    500.98
      1
             20228
                     Not Specified
                                         0.02
                                                                     26.00
      2
             21776
                          Critical
                                         0.06
                                                      9.48
                                                                      7.29
                                                                                      11
             24844
      3
                            Medium
                                         0.09
                                                     78.69
                                                                     19.99
                                                                                      14
      4
             24846
                            Medium
                                         0.08
                                                      3.28
                                                                      2.31
                                                                                      14
                                                                      7.46
      1947
             19842
                                         0.01
                                                     10.90
                                                                                    3397
                              High
      1948
             19843
                              High
                                         0.10
                                                      7.99
                                                                      5.03
                                                                                    3397
      1949
             26208
                     Not Specified
                                         0.08
                                                     11.97
                                                                      5.81
                                                                                    3399
                                         0.10
                                                      9.38
      1950
             24911
                            Medium
                                                                      4.93
                                                                                    3400
      1951
             25914
                                         0.10
                                                    105.98
                                                                     13.99
                                                                                    3403
                              High
                 Customer Name
                                      Ship Mode Customer Segment Product Category
      0
                 Bonnie Potter
                                    Express Air
                                                        Corporate
                                                                    Office Supplies
                                 Delivery Truck
      1
               Ronnie Proctor
                                                      Home Office
                                                                          Furniture
      2
                 Marcus Dunlap
                                    Regular Air
                                                      Home Office
                                                                          Furniture
      3
            Gwendolyn F Tyson
                                    Regular Air
                                                   Small Business
                                                                          Furniture
      4
            Gwendolyn F Tyson
                                    Regular Air
                                                   Small Business
                                                                    Office Supplies
                                        •••
      1947
                   Andrea Shaw
                                    Regular Air
                                                   Small Business
                                                                    Office Supplies
      1948
                   Andrea Shaw
                                    Regular Air
                                                   Small Business
                                                                         Technology
      1949
                   Marvin Reid
                                    Regular Air
                                                   Small Business
                                                                    Office Supplies
      1950
                 Florence Gold
                                    Express Air
                                                   Small Business
                                                                          Furniture
      1951
                                    Express Air
                                                         Consumer
                 Tammy Buckley
                                                                          Furniture
                 Region State or Province
                                                    City Postal Code Order Date
      0
                   West
                                Washington
                                              Anacortes
                                                                 98221 2015-01-07
      1
                   West
                                California San Gabriel
                                                                 91776 2015-06-13
      2
                   East
                                New Jersey
                                                Roselle
                                                                  7203 2015-02-15
      3
                                 Minnesota
                                             Prior Lake
                                                                 55372 2015-05-12
               Central
```

Quantity ordered new

4

Sales Order ID

88522

13.01

Ship Date

0 2015-01-08

Profit

4.5600

4	•••	Central	N	Minnesota	Prior	Lake	5	5372	2015-0	5-12
	···	•••		•••	•••		•••	•••		
1947	•••	Central		Illinois	Dany	ville	6	1832	2015-03	3-11
1948	•••	Central		Illinois	Dany	ville	6	1832	2015-03	3-11
1949	•••	Central		Illinois	Des Pla	aines	6	0016	2015-03	3-29
1950	•••	East	West	Virginia	Fair	rmont	2	6554	2015-04	4-04
1951	•••	West		Wyoming	Chey	yenne	8:	2001	2015-02	2-08
	Sh	ip Date	Profit	Quantity	ordered	d new	Sales	Orde	er ID	
0	201	5-01-08	4.5600)		4	13.01	8	88522	
1	201	5-06-15	4390.3665	5		12	6362.85	S	0193	
2	201	5-02-17	-53.8096	5		22	211.15	S	90192	
3	201	5-05-14	803.4705	5		16	1164.45	8	36838	
4	201	5-05-13	-24.0300)		7	22.23	8	36838	
•••		•••	•••		•••	•••	•••			
1947	201	5-03-12	-116.7600)		18	207.31	8	37536	
1948	201	5-03-12	-160.9520)		22	143.12	8	37536	
1949	201	5-03-31	-41.8700)		5	59.98	8	37534	
1950	201	5-04-04	-24.7104	<u>l</u>		15	135.78	8	37537	
1951	201	5-02-11	349.4850)		5	506.50	8	37530	

[1952 rows x 25 columns]

[52]: p.isnull()

52]:		Row ID C	rder	Priority D	iscount	Unit	Price S	hipping C	ost	\
	0	False		False	False		False	Fa	lse	
	1	False		False	False		False	Fa	lse	
	2	False		False	False		False	Fa	lse	
	3	False		False	False		False	Fa	lse	
	4	False		False	False		False	Fa	lse	
		•••				•••				
	1947	False		False	False		False	Fa	lse	
	1948	False		False	False		False	Fa	lse	
	1949	False		False	False		False	Fa	lse	
	1950	False		False	False		False	Fa	lse	
	1951	False		False	False		False	Fa	lse	
		Customer	ID (Customer Nam	ne Ship	Mode	Customer	Segment	\	
	0	Fal	.se	Fals	se F	alse		False		
	1	Fal	.se	Fals	se F	alse		False		
	2	Fal	.se	Fals	se F	alse		False		
	3	Fal	.se	Fals	se F	alse		False		
	4	Fal	.se	Fals	se F	alse		False		
		•••		•••	•••		•••			
	1947	Fal		Fals		alse		False		
	1948	Fal	.se	Fals	se F	alse		False		

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1949
                  False
                                 False
                                            False
                                                               False
      1950
                                                               False
                  False
                                 False
                                            False
      1951
                  False
                                 False
                                            False
                                                               False
            Product Category ...
                                 Region State or Province
                                                              City Postal Code \
      0
                       False ...
                                  False
                                                      False False
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      1
                       False ...
                                  False
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      2
                       False ...
                                  False
                                                      False False
                                                                          False
      3
                       False ...
                                                      False False
                                                                          False
                                  False
      4
                       False ...
                                  False
                                                      False False
                                                                          False
                       ...
      1947
                       False ...
                                  False
                                                      False False
                                                                          False
                       False ...
      1948
                                  False
                                                      False False
                                                                          False
      1949
                       False ...
                                  False
                                                      False False
                                                                          False
      1950
                                                      False False
                                                                          False
                       False ...
                                  False
      1951
                       False ...
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                        Ship Date Profit
                                            Quantity ordered new
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      [1952 rows x 25 columns]
[63]: sorted_p = p.sort_values(by='City', ascending=False)
      top_10_cities = sorted_p.head(30)
[64]: plot.figure(figsize=(20, 10))
      plot.bar(top_10_cities['City'], top_10_cities['Customer ID'])
      plot.xlabel('City')
      plot.ylabel('Customer ID')
      plot.title('Top 10 Cities by Customer ID')
      plot.xticks(rotation=45, ha='right') # Rotate x-axis labels for better_
       ⇔visibility
      plot.tight_layout()
      plot.show()
```

