Data science on python

TASK - 2

It involves manipulation of data , adding library files , load csv file using : Pandas Dataframe

take sample insertion:-

In [6]:
```
import pandas as pd
df = pd.read_csv('C:\\Users\\ACER\\Documents\\student1.csv')
print(df.to_string())
```

```
   s.no    names  english  telugu  hindi
0   1.0    james     34.0    34.0   45.0
1   2.0   amelia     45.0    37.0   35.0
2   3.0  tanisha     56.0    50.0   37.0
3   4.0    janay     23.0    23.0   56.0
4   NaN      NaN      NaN     NaN    NaN
5   NaN      NaN      NaN     NaN    NaN
```

create using basic operations like:

A)filtering data based on conditions..

B)handling missing values..

C)calculating statistics..

In [8]:
```
import pandas as pd
df = pd.read_csv('C:\\Users\\ACER\\Desktop\\financial.csv')
print(df)
```

```
             segment                  country      product  Discount Band   \
0         Government                   Canada   Carretera            None
1         Government                  Germany   Carretera            None
2          Midmarket                   France   Carretera            None
3          Midmarket                  Germany   Carretera            None
4          Midmarket                   Mexico   Carretera            None
..               ...                      ...         ...            ...
695    Small Business                   France    Amarilla            High
696    Small Business                   Mexico    Amarilla            High
697        Government                   Mexico     Montana            High
698        Government                   Canada       Paseo            High
699  Channel Partners  United States of America         VTT            High

     Units Sold  Manufacturing Price   Sale Price     Gross Sales   \
0        1618.5                $3.00       $20.00      $32,370.00
1        1321.0                $3.00       $20.00      $26,420.00
2        2178.0                $3.00       $15.00      $32,670.00
3         888.0                $3.00       $15.00      $13,320.00
4        2470.0                $3.00       $15.00      $37,050.00
..          ...                  ...          ...             ...
695      2475.0              $260.00      $300.00    $7,42,500.00
696       546.0              $260.00      $300.00    $1,63,800.00
697      1368.0                $5.00        $7.00       $9,576.00
698       723.0               $10.00        $7.00       $5,061.00
699      1806.0              $250.00       $12.00      $21,672.00

         Discounts           Sales            COGS        Profit         Date  \
0               $-       $32,370.00      $16,185.00    $16,185.00   01-01-2014
1               $-       $26,420.00      $13,210.00    $13,210.00   01-01-2014
2               $-       $32,670.00      $21,780.00    $10,890.00   01-06-2014
3               $-       $13,320.00       $8,880.00     $4,440.00   01-06-2014
4               $-       $37,050.00      $24,700.00    $12,350.00   01-06-2014
..              ...              ...             ...           ...          ...
695   $1,11,375.00    $6,31,125.00    $6,18,750.00    $12,375.00   01-03-2014
696     $24,570.00    $1,39,230.00    $1,36,500.00     $2,730.00   01-10-2014
697      $1,436.40       $8,139.60       $6,840.00     $1,299.60   01-02-2014
698        $759.15       $4,301.85       $3,615.00       $686.85   01-04-2014
699      $3,250.80      $18,421.20       $5,418.00    $13,003.20   01-05-2014

     Month Number  Month Name   Year
0               1     January   2014
```

```
1               1     January   2014
2               6        June   2014
3               6        June   2014
4               6        June   2014
..            ...         ...    ...
695             3       March   2014
696            10     October   2014
697             2    February   2014
698             4       April   2014
699             5         May   2014

[700 rows x 16 columns]
```

A)filtering data based on conditions

In [ ]:
```
#filtering values
```

In [10]:
```
df.filter(["segment", "country"])
```

Out[10]:

	segment	country
0	Government	Canada
1	Government	Germany
2	Midmarket	France
3	Midmarket	Germany
4	Midmarket	Mexico
...	...	...
695	Small Business	France
696	Small Business	Mexico
697	Government	Mexico
698	Government	Canada
699	Channel Partners	United States of America

700 rows × 2 columns

In [ ]:
```
#subset column name
```

In [11]:
```
df.filter(regex ='[Mm]')
```

Out[11]:

	segment	Manufacturing Price	Month Number	Month Name
0	Government	$3.00	1	January
1	Government	$3.00	1	January
2	Midmarket	$3.00	6	June
3	Midmarket	$3.00	6	June
4	Midmarket	$3.00	6	June
...	...	...	...	...
695	Small Business	$260.00	3	March
696	Small Business	$260.00	10	October
697	Government	$5.00	2	February
698	Government	$10.00	4	April
699	Channel Partners	$250.00	5	May

700 rows × 4 columns

In [ ]:
```
#using operators based on date
```

In [16]:
```
df['Date'] = pd.to_datetime(df['Date'])
newdf = (df['Date'] > '01-01-2014') & (df['Date'] <= '01-05-2014')
newdf = df.loc[newdf]
print(newdf)
```

```
             segment                  country     product  Discount Band   \
6          Midmarket                  Germany    Montana            None
16        Government                   Canada      Paseo            None
17         Midmarket                   Mexico      Paseo            None
32        Enterprise                   France       Velo            None
33   Channel Partners                  Germany       Velo            None
..                ...                      ...        ...             ...
683        Midmarket                   France       Velo            High
695    Small Business                  France    Amarilla            High
697       Government                   Mexico    Montana            High
698       Government                   Canada      Paseo            High
699  Channel Partners  United States of America        VTT            High

     Units Sold  Manufacturing Price   Sale Price     Gross Sales   \
6         921.0                $5.00       $15.00      $13,815.00
16        292.0               $10.00       $20.00       $5,840.00
17        974.0               $10.00       $15.00      $14,610.00
32       1804.0              $120.00      $125.00    $2,25,500.00
33       2161.0              $120.00       $12.00      $25,932.00
..          ...                  ...          ...             ...
683      2826.0              $120.00       $15.00      $42,390.00
695      2475.0              $260.00      $300.00    $7,42,500.00
697      1368.0                $5.00        $7.00       $9,576.00
698       723.0               $10.00        $7.00       $5,061.00
699      1806.0              $250.00       $12.00      $21,672.00

         Discounts           Sales            COGS        Profit        Date  \
6               $-       $13,815.00       $9,210.00     $4,605.00  2014-01-03
16              $-        $5,840.00       $2,920.00     $2,920.00  2014-01-02
17              $-       $14,610.00       $9,740.00     $4,870.00  2014-01-02
32              $-     $2,25,500.00    $2,16,480.00     $9,020.00  2014-01-02
33              $-       $25,932.00       $6,483.00    $19,449.00  2014-01-03
..             ...              ...             ...           ...         ...
683      $6,358.50      $36,031.50      $28,260.00     $7,771.50  2014-01-05
695   $1,11,375.00    $6,31,125.00    $6,18,750.00    $12,375.00  2014-01-03
697      $1,436.40       $8,139.60       $6,840.00     $1,299.60  2014-01-02
698        $759.15       $4,301.85       $3,615.00       $686.85  2014-01-04
699      $3,250.80      $18,421.20       $5,418.00    $13,003.20  2014-01-05

     Month Number  Month Name   Year
6               3       March   2014
```

```
16              2    February   2014
17              2    February   2014
32              2    February   2014
33              3       March   2014
..            ...         ...   ...
683             5         May   2014
695             3       March   2014
697             2    February   2014
698             4       April   2014
699             5         May   2014

[140 rows x 16 columns]
```

In [ ]:
```
#using operator based on time
```

In [20]:
```
Date1 = df["Date"] >= "2014-01-03"
Date2 = df["Date"] <= "2014-01-05"
New_df = df.loc[Date1 & Date2]
print(New_df)
```

```
             segment                  country     product  Discount Band   \
6           Midmarket                  Germany    Montana            None
33   Channel Partners                  Germany       Velo            None
39   Channel Partners                  Germany        VTT            None
46   Channel Partners  United States of America   Amarilla            None
47         Enterprise                  Germany   Amarilla            None
..                ...                      ...        ...             ...
682  Channel Partners                   Mexico       Velo            High
683         Midmarket                  France       Velo            High
695    Small Business                  France   Amarilla            High
698        Government                  Canada      Paseo            High
699  Channel Partners  United States of America        VTT            High

     Units Sold  Manufacturing Price   Sale Price     Gross Sales   \
6         921.0                $5.00       $15.00      $13,815.00
33       2161.0              $120.00       $12.00      $25,932.00
39       2838.0              $250.00       $12.00      $34,056.00
46       1953.0              $260.00       $12.00      $23,436.00
47       4219.5              $260.00      $125.00    $5,27,437.50
..          ...                  ...          ...             ...
682       500.0              $120.00       $12.00       $6,000.00
683      2826.0              $120.00       $15.00      $42,390.00
695      2475.0              $260.00      $300.00    $7,42,500.00
698       723.0               $10.00        $7.00       $5,061.00
699      1806.0              $250.00       $12.00      $21,672.00

         Discounts           Sales            COGS        Profit        Date  \
6               $-       $13,815.00       $9,210.00     $4,605.00  2014-01-03
33              $-       $25,932.00       $6,483.00    $19,449.00  2014-01-03
39              $-       $34,056.00       $8,514.00    $25,542.00  2014-01-04
46              $-       $23,436.00       $5,859.00    $17,577.00  2014-01-04
47              $-     $5,27,437.50    $5,06,340.00    $21,097.50  2014-01-04
..             ...              ...             ...           ...         ...
682        $900.00       $5,100.00       $1,500.00     $3,600.00  2014-01-03
683      $6,358.50      $36,031.50      $28,260.00     $7,771.50  2014-01-05
695   $1,11,375.00    $6,31,125.00    $6,18,750.00    $12,375.00  2014-01-03
698        $759.15       $4,301.85       $3,615.00       $686.85  2014-01-04
699      $3,250.80      $18,421.20       $5,418.00    $13,003.20  2014-01-05

     Month Number  Month Name   Year
6               3       March   2014
```

```
33              3       March   2014
39              4       April   2014
46              4       April   2014
47              4       April   2014
..            ...         ...   ...
682             3       March   2014
683             5         May   2014
695             3       March   2014
698             4       April   2014
699             5         May   2014

[105 rows x 16 columns]
```

In [ ]:
```
#using operator based on index
```

In [21]:
```
print("\n Original Dataframe \n", df)
df_1 = df.filter(items=[46], axis=0)
print("\n Display only index value \n", df_1)
df_2 = df.filter(items=[695, 698], axis=0)
print("\n Display only 695 and 698 index value \n", df_2)
```

Original Dataframe

	segment	country	product	Discount Band	\
0	Government	Canada	Carretera	None	
1	Government	Germany	Carretera	None	
2	Midmarket	France	Carretera	None	
3	Midmarket	Germany	Carretera	None	
4	Midmarket	Mexico	Carretera	None	
..	...	...	...	...	
695	Small Business	France	Amarilla	High	
696	Small Business	Mexico	Amarilla	High	
697	Government	Mexico	Montana	High	
698	Government	Canada	Paseo	High	
699	Channel Partners	United States of America	VTT	High	

	Units Sold	Manufacturing Price	Sale Price	Gross Sales	\
0	1618.5	$3.00	$20.00	$32,370.00	
1	1321.0	$3.00	$20.00	$26,420.00	
2	2178.0	$3.00	$15.00	$32,670.00	
3	888.0	$3.00	$15.00	$13,320.00	
4	2470.0	$3.00	$15.00	$37,050.00	
..	...	...	...	...	
695	2475.0	$260.00	$300.00	$7,42,500.00	
696	546.0	$260.00	$300.00	$1,63,800.00	
697	1368.0	$5.00	$7.00	$9,576.00	
698	723.0	$10.00	$7.00	$5,061.00	
699	1806.0	$250.00	$12.00	$21,672.00	

	Discounts	Sales	COGS	Profit	Date	\
0	$-	$32,370.00	$16,185.00	$16,185.00	2014-01-01	
1	$-	$26,420.00	$13,210.00	$13,210.00	2014-01-01	
2	$-	$32,670.00	$21,780.00	$10,890.00	2014-01-06	
3	$-	$13,320.00	$8,880.00	$4,440.00	2014-01-06	
4	$-	$37,050.00	$24,700.00	$12,350.00	2014-01-06	
..	...	...	...	...	...	
695	$1,11,375.00	$6,31,125.00	$6,18,750.00	$12,375.00	2014-01-03	
696	$24,570.00	$1,39,230.00	$1,36,500.00	$2,730.00	2014-01-10	
697	$1,436.40	$8,139.60	$6,840.00	$1,299.60	2014-01-02	
698	$759.15	$4,301.85	$3,615.00	$686.85	2014-01-04	
699	$3,250.80	$18,421.20	$5,418.00	$13,003.20	2014-01-05	

```
     Month Number  Month Name   Year
0               1     January   2014
1               1     January   2014
2               6        June   2014
3               6        June   2014
4               6        June   2014
..            ...         ...   ...
695             3       March   2014
696            10     October   2014
697             2    February   2014
698             4       April   2014
699             5         May   2014

[700 rows x 16 columns]
```

Display only index value

```
             segment                  country     product  Discount Band   \
46  Channel Partners  United States of America   Amarilla            None

    Units Sold  Manufacturing Price   Sale Price   Gross Sales   Discounts   \
46      1953.0              $260.00       $12.00    $23,436.00        $-

          Sales         COGS        Profit        Date  Month Number  \
46   $23,436.00    $5,859.00    $17,577.00  2014-01-04             4

    Month Name   Year
46       April   2014
```

Display only 695 and 698 index value

```
            segment country     product  Discount Band   Units Sold  \
695  Small Business  France   Amarilla            High       2475.0
698      Government  Canada      Paseo            High        723.0

     Manufacturing Price   Sale Price     Gross Sales       Discounts   \
695              $260.00      $300.00    $7,42,500.00    $1,11,375.00
698               $10.00        $7.00       $5,061.00         $759.15

             Sales            COGS        Profit        Date  Month Number  \
695   $6,31,125.00    $6,18,750.00    $12,375.00  2014-01-03             3
698      $4,301.85       $3,615.00       $686.85  2014-01-04             4

     Month Name   Year
```

```
695       March   2014
698       April   2014
```

In [ ]:
```
# using loc keyword
```

In [29]:
```
df = df.loc[df["Month Number"] == 6]
print(df)
```

```
              segment  country      product  Discount Band   Units Sold  \
2           Midmarket   France   Carretera            None       2178.0
3           Midmarket  Germany   Carretera            None        888.0
4           Midmarket   Mexico   Carretera            None       2470.0
7    Channel Partners   Canada     Montana            None       2518.0
8          Government   France     Montana            None       1899.0
..                ...      ...         ...           ...          ...
599        Government   Canada        Velo            High       2632.0
600        Government   France        Velo            High       1190.0
601  Channel Partners   Mexico        Velo            High        604.0
606        Enterprise   Canada         VTT            High       1583.0
609        Government   France    Amarilla            High       1190.0

     Manufacturing Price   Sale Price     Gross Sales       Discounts   \
2                  $3.00       $15.00      $32,670.00            $-
3                  $3.00       $15.00      $13,320.00            $-
4                  $3.00       $15.00      $37,050.00            $-
7                  $5.00       $12.00      $30,216.00            $-
8                  $5.00       $20.00      $37,980.00            $-
..                   ...          ...             ...           ...
599             $120.00      $350.00    $9,21,200.00    $1,19,756.00
600             $120.00        $7.00       $8,330.00       $1,082.90
601             $120.00       $12.00       $7,248.00         $942.24
606             $250.00      $125.00    $1,97,875.00      $25,723.75
609             $260.00        $7.00       $8,330.00       $1,082.90

             Sales            COGS          Profit        Date  Month Number  \
2       $32,670.00      $21,780.00      $10,890.00  2014-01-06             6
3       $13,320.00       $8,880.00       $4,440.00  2014-01-06             6
4       $37,050.00      $24,700.00      $12,350.00  2014-01-06             6
7       $30,216.00       $7,554.00      $22,662.00  2014-01-06             6
8       $37,980.00      $18,990.00      $18,990.00  2014-01-06             6
..             ...             ...             ...         ...           ...
599   $8,01,444.00    $6,84,320.00    $1,17,124.00  2014-01-06             6
600      $7,247.10       $5,950.00       $1,297.10  2014-01-06             6
601      $6,305.76       $1,812.00       $4,493.76  2014-01-06             6
606   $1,72,151.25    $1,89,960.00     $(17,808.75) 2014-01-06             6
609      $7,247.10       $5,950.00       $1,297.10  2014-01-06             6

     Month Name   Year
2          June   2014
```

```
3          June   2014
4          June   2014
7          June   2014
8          June   2014
..          ...    ...
599        June   2014
600        June   2014
601        June   2014
606        June   2014
609        June   2014

[70 rows x 16 columns]
```

B)Handling missing values

In [ ]:
```
#using is null function
```

In [30]:
```
df.isnull()
```

Out[30]:

	segment	country	product	Discount Band	Units Sold	Manufacturing Price	Sale Price	Gross Sales	Discounts	Sales	COGS	Profit	Date	Month Number	Month Name	Year
2	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
7	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
8	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
599	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
600	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
601	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
606	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False
609	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False

70 rows × 16 columns

In [ ]:
```
#using not null function
```

In [45]:
```
df.notnull()
```

Out[45]:

	segment	country	product	Discount Band	Units Sold	Manufacturing Price	Sale Price	Gross Sales	Discounts	Sales	COGS	Profit	Date	Month Number	Month Name	Year
2	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
3	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
4	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
7	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
8	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
599	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
600	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
601	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
606	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True
609	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True	True

70 rows × 16 columns

In [ ]:
```
#using forward method
```

In [48]:
```
df.fillna(method='pad')
```

Out[48]:

	segment	country	product	Discount Band	Units Sold	Manufacturing Price	Sale Price	Gross Sales	Discounts	Sales	COGS	Profit
2	Midmarket	France	Carretera	None	2178.0	$3.00	$15.00	$32,670.00	$-	$32,670.00	$21,780.00	$10,890.00
3	Midmarket	Germany	Carretera	None	888.0	$3.00	$15.00	$13,320.00	$-	$13,320.00	$8,880.00	$4,440.00
4	Midmarket	Mexico	Carretera	None	2470.0	$3.00	$15.00	$37,050.00	$-	$37,050.00	$24,700.00	$12,350.00
7	Channel Partners	Canada	Montana	None	2518.0	$5.00	$12.00	$30,216.00	$-	$30,216.00	$7,554.00	$22,662.00
8	Government	France	Montana	None	1899.0	$5.00	$20.00	$37,980.00	$-	$37,980.00	$18,990.00	$18,990.00
...	...	...	...	...	...	...	...	...	...	...	...	...
599	Government	Canada	Velo	High	2632.0	$120.00	$350.00	$9,21,200.00	$1,19,756.00	$8,01,444.00	$6,84,320.00	$1,17,124.00
600	Government	France	Velo	High	1190.0	$120.00	$7.00	$8,330.00	$1,082.90	$7,247.10	$5,950.00	$1,297.10
601	Channel Partners	Mexico	Velo	High	604.0	$120.00	$12.00	$7,248.00	$942.24	$6,305.76	$1,812.00	$4,493.76
606	Enterprise	Canada	VTT	High	1583.0	$250.00	$125.00	$1,97,875.00	$25,723.75	$1,72,151.25	$1,89,960.00	$(17,808.75)
609	Government	France	Amarilla	High	1190.0	$260.00	$7.00	$8,330.00	$1,082.90	$7,247.10	$5,950.00	$1,297.10

70 rows × 16 columns

In [ ]:
```
#using backward method
```

In [49]:
```
df.fillna(method='backfill')
```

Out[49]:

ıt	country	product	Discount Band	Units Sold	Manufacturing Price	Sale Price	Gross Sales	Discounts	Sales	COGS	Profit	Date	Month Number
ɛt	France	Carretera	None	2178.0	$3.00	$15.00	$32,670.00	$-	$32,670.00	$21,780.00	$10,890.00	2014-01-06	6
ɛt	Germany	Carretera	None	888.0	$3.00	$15.00	$13,320.00	$-	$13,320.00	$8,880.00	$4,440.00	2014-01-06	6
ɛt	Mexico	Carretera	None	2470.0	$3.00	$15.00	$37,050.00	$-	$37,050.00	$24,700.00	$12,350.00	2014-01-06	6
ɛl s	Canada	Montana	None	2518.0	$5.00	$12.00	$30,216.00	$-	$30,216.00	$7,554.00	$22,662.00	2014-01-06	6
ıt	France	Montana	None	1899.0	$5.00	$20.00	$37,980.00	$-	$37,980.00	$18,990.00	$18,990.00	2014-01-06	6
..	...	...	...	...	...	...	...	...	...	...	...	...	...
ıt	Canada	Velo	High	2632.0	$120.00	$350.00	$9,21,200.00	$1,19,756.00	$8,01,444.00	$6,84,320.00	$1,17,124.00	2014-01-06	6
ıt	France	Velo	High	1190.0	$120.00	$7.00	$8,330.00	$1,082.90	$7,247.10	$5,950.00	$1,297.10	2014-01-06	6
ɛl s	Mexico	Velo	High	604.0	$120.00	$12.00	$7,248.00	$942.24	$6,305.76	$1,812.00	$4,493.76	2014-01-06	6
e	Canada	VTT	High	1583.0	$250.00	$125.00	$1,97,875.00	$25,723.75	$1,72,151.25	$1,89,960.00	$(17,808.75)	2014-01-06	6
ıt	France	Amarilla	High	1190.0	$260.00	$7.00	$8,330.00	$1,082.90	$7,247.10	$5,950.00	$1,297.10	2014-01-06	6

ılumns

C) Calculating statistics

In [ ]:
```
# mean method
```

In [60]:
```
df.mean(axis = 0)
```

Out[60]:
```
Units Sold      1475.742857
Month Number       6.000000
Year            2014.000000
dtype: float64
```

In [ ]:
```
# median method
```

In [58]:
```
df.median(axis = 0)
```

Out[58]:
```
Units Sold      1282.0
Month Number       6.0
Year            2014.0
dtype: float64
```

In [ ]:
```
# mode method
```

In [59]:
```
df.mode(axis = 0)
```

Out[59]:

ent	country	product	Discount Band	Units Sold	Manufacturing Price	Sale Price	Gross Sales	Discounts	Sales	COGS	Profit	Date	Month Number	M N
ent	Canada	Paseo	Medium	448.0	$10.00	$12.00	$1,34,400.00	$-	$1,24,992.00	$1,12,000.00	$(17,808.75)	2014-01-06	6.0	
aN	France	NaN	NaN	602.0	NaN	$125.00	$1,96,250.00	NaN	$1,72,151.25	$1,56,520.00	$1,03,224.00	NaT	NaN	
aN	Germany	NaN	NaN	604.0	NaN	$15.00	$1,97,875.00	NaN	$1,90,362.50	$1,72,250.00	$1,17,124.00	NaT	NaN	
aN	Mexico	NaN	NaN	662.0	NaN	$20.00	$10,486.00	NaN	$13,027.20	$1,812.00	$1,297.10	NaT	NaN	
aN	United States of America	NaN	NaN	689.0	NaN	$300.00	$13,320.00	NaN	$13,320.00	$1,88,400.00	$1,655.00	NaT	NaN	
aN	NaN	NaN	NaN	708.0	NaN	$350.00	$13,704.00	NaN	$13,429.92	$1,89,960.00	$1,713.85	NaT	NaN	
aN	NaN	NaN	NaN	727.0	NaN	$7.00	$14,160.00	NaN	$15,056.72	$10,380.00	$1,962.50	NaT	NaN	
aN	NaN	NaN	NaN	787.0	NaN	NaN	$16,366.00	NaN	$18,540.00	$11,690.00	$10,003.92	NaT	NaN	
aN	NaN	NaN	NaN	886.0	NaN	NaN	$18,540.00	NaN	$18,721.08	$12,820.00	$10,768.80	NaT	NaN	
aN	NaN	NaN	NaN	888.0	NaN	NaN	$2,06,700.00	NaN	$18,891.60	$13,660.00	$10,890.00	NaT	NaN	
aN	NaN	NaN	NaN	991.0	NaN	NaN	$2,10,700.00	NaN	$2,00,165.00	$14,535.00	$11,474.40	NaT	NaN	
aN	NaN	NaN	NaN	1006.0	NaN	NaN	$2,97,300.00	NaN	$2,00,499.00	$18,990.00	$11,660.40	NaT	NaN	
aN	NaN	NaN	NaN	1038.0	NaN	NaN	$20,349.00	NaN	$2,72,888.00	$2,30,360.00	$12,350.00	NaT	NaN	
aN	NaN	NaN	NaN	1094.0	NaN	NaN	$20,760.00	NaN	$2,82,435.00	$2,47,750.00	$12,992.00	NaT	NaN	
aN	NaN	NaN	NaN	1135.0	NaN	NaN	$22,812.00	NaN	$2,98,662.00	$2,61,560.00	$13,905.00	NaT	NaN	
aN	NaN	NaN	NaN	1142.0	NaN	NaN	$25,640.00	NaN	$22,127.64	$2,73,500.00	$16,424.64	NaT	NaN	
aN	NaN	NaN	NaN	1190.0	NaN	NaN	$27,320.00	NaN	$23,588.80	$21,780.00	$18,990.00	NaT	NaN	
aN	NaN	NaN	NaN	1282.0	NaN	NaN	$3,10,100.00	NaN	$25,134.40	$24,700.00	$2,366.84	NaT	NaN	
aN	NaN	NaN	NaN	1366.0	NaN	NaN	$3,28,200.00	NaN	$3,52,100.00	$25,670.00	$2,726.25	NaT	NaN	
aN	NaN	NaN	NaN	1496.0	NaN	NaN	$3,52,100.00	NaN	$30,216.00	$28,440.00	$2,951.25	NaT	NaN	
aN	NaN	NaN	NaN	1498.0	NaN	NaN	$30,216.00	NaN	$32,670.00	$3,426.00	$22,662.00	NaT	NaN	
aN	NaN	NaN	NaN	1545.0	NaN	NaN	$32,670.00	NaN	$33,499.35	$3,88,960.00	$25,162.00	NaT	NaN	
aN	NaN	NaN	NaN	1570.0	NaN	NaN	$37,050.00	NaN	$37,050.00	$4,635.00	$28,249.00	NaT	NaN	

ent	country	product	Discount Band	Units Sold	Manufacturing Price	Sale Price	Gross Sales	Discounts	Sales	COGS	Profit	Date	Month Number	M N
aN	NaN	NaN	NaN	1583.0	NaN	NaN	$37,980.00	NaN	$37,980.00	$5,675.00	$3,366.72	NaT	NaN	
aN	NaN	NaN	NaN	1899.0	NaN	NaN	$38,505.00	NaN	$4,92,184.00	$5,703.00	$34,685.00	NaT	NaN	
aN	NaN	NaN	NaN	1901.0	NaN	NaN	$42,660.00	NaN	$40,100.40	$5,950.00	$4,186.08	NaT	NaN	
aN	NaN	NaN	NaN	2178.0	NaN	NaN	$5,23,600.00	NaN	$6,305.76	$6,15,000.00	$4,440.00	NaT	NaN	
aN	NaN	NaN	NaN	2338.0	NaN	NaN	$7,248.00	NaN	$6,78,960.00	$6,84,320.00	$4,493.76	NaT	NaN	
aN	NaN	NaN	NaN	2460.0	NaN	NaN	$7,38,000.00	NaN	$7,247.10	$7,080.00	$42,528.00	NaT	NaN	
aN	NaN	NaN	NaN	2470.0	NaN	NaN	$7,945.00	NaN	$7,388.85	$7,490.00	$43,645.00	NaT	NaN	
aN	NaN	NaN	NaN	2518.0	NaN	NaN	$8,330.00	NaN	$8,01,444.00	$7,554.00	$5,947.20	NaT	NaN	
aN	NaN	NaN	NaN	2567.0	NaN	NaN	$82,750.00	NaN	$81,095.00	$79,440.00	$63,960.00	NaT	NaN	
aN	NaN	NaN	NaN	2632.0	NaN	NaN	$9,21,200.00	NaN	$89,966.25	$8,880.00	$7,829.35	NaT	NaN	
aN	NaN	NaN	NaN	2844.0	NaN	NaN	$90,875.00	NaN	$9,856.84	$87,240.00	$8,511.60	NaT	NaN	
aN	NaN	NaN	NaN	2907.0	NaN	NaN	$98,375.00	NaN	$97,391.25	$94,440.00	$90,540.00	NaT	NaN	

In [ ]:
```
# maximum
```

In [63]:
```
print(df.max(axis=0))
```

```
segment                          Small Business
country                 United States of America
product                                    Velo
 Discount Band                             None
Units Sold                                 2907
 Manufacturing Price                       $5.00
 Sale Price                                $7.00
 Gross Sales                          $98,375.00
 Discounts                               $983.75
  Sales                               $97,391.25
 COGS                                 $94,440.00
 Profit                               $90,540.00
Date                          2014-01-06 00:00:00
Month Number                                    6
 Month Name                                 June
Year                                       2014
dtype: object
```

In [ ]:
```
# minimum
```

In [64]:
```
print(df.min(axis=0))
```

```
segment                    Channel Partners
country                              Canada
product                            Amarilla
 Discount Band                         High
Units Sold                              448
 Manufacturing Price                  $10.00
 Sale Price                           $12.00
 Gross Sales                     $1,34,400.00
 Discounts                              $-
  Sales                          $1,24,992.00
 COGS                            $1,12,000.00
 Profit                           $(17,808.75)
Date                       2014-01-06 00:00:00
Month Number                               6
 Month Name                             June
Year                                    2014
dtype: object
```

In [ ]:

Done by:-

K.K.Sreevalli

....

In [ ]: