In [1]:
```
'''Q1 Create Python program to load the Item.csv file in DataFrame, find t
(The Item.csv file is uploaded in Classroom)
Replace missing value of Quantity by median
Replace missing value of Price by Mean
Replace missing value of bought column by Standard Deviation
Replace missing value of Forenoon column with maximum value
Replace missing value of Afternoon column with minimum value
Display all data after replacement back to user.'''
```

Out[1]:
```
'Q1 Create Python program to load the Item.csv file in DataFrame, find the mi
ssing values follows: \n(The Item.csv file is uploaded in Classroom)\nReplace
missing value of Quantity by median\nReplace missing value of Price by Mean\n
Replace missing value of bought column by Standard Deviation\nReplace missing
value of Forenoon column with maximum value\nReplace missing value of Afterno
on column with minimum value\nDisplay all data after replacement back to use
r.'
```

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

In [3]:
```
data = pd.read_csv("Item.csv")
data
```

Out[3]:

	id	item	quantity	price	bought	forenoon	afternoon
0	1	milk	2.0	67.0	672.0	456.0	324.0
1	2	sugar	1.0	NaN	453.0	234.0	NaN
2	3	chips	NaN	45.0	456.0	322.0	254.0
3	4	coffee	2.0	45.0	672.0	564.0	NaN
4	5	meat	4.0	56.0	NaN	221.0	NaN
5	6	chocos	3.0	NaN	345.0	NaN	213.0
6	7	juice	1.0	78.0	765.0	NaN	344.0
7	8	jam	NaN	65.0	665.0	453.0	333.0
8	9	bread	3.0	NaN	NaN	NaN	567.0
9	10	butter	4.0	NaN	354.0	NaN	322.0
10	11	icecream	1.0	300.0	454.0	323.0	432.0
11	12	cake	2.0	250.0	654.0	453.0	345.0
12	13	pizza	NaN	200.0	345.0	254.0	NaN
13	14	cold drink	2.0	100.0	564.0	578.0	234.0
14	15	biscuits	5.0	50.0	345.0	654.0	456.0

In [4]:
```
1 data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 15 entries, 0 to 14
Data columns (total 7 columns):
 #   Column     Non-Null Count  Dtype  
---  ------     --------------  -----  
 0   id         15 non-null     int64  
 1   item       15 non-null     object 
 2   quantity   12 non-null     float64
 3   price      11 non-null     float64
 4   bought     13 non-null     float64
 5   forenoon   11 non-null     float64
 6   afternoon  11 non-null     float64
dtypes: float64(5), int64(1), object(1)
memory usage: 968.0+ bytes
```

In [5]:
```
1 data.isna()
```

Out[5]:

	id	item	quantity	price	bought	forenoon	afternoon
0	False	False	False	False	False	False	False
1	False	False	False	True	False	False	True
2	False	False	True	False	False	False	False
3	False	False	False	False	False	False	True
4	False	False	False	False	True	False	True
5	False	False	False	True	False	True	False
6	False	False	False	False	False	True	False
7	False	False	True	False	False	False	False
8	False	False	False	True	True	True	False
9	False	False	False	True	False	True	False
10	False	False	False	False	False	False	False
11	False	False	False	False	False	False	False
12	False	False	True	False	False	False	True
13	False	False	False	False	False	False	False
14	False	False	False	False	False	False	False

In [6]:
```
1 data.isna().sum()
```

Out[6]:
```
id           0
item         0
quantity     3
price        4
bought       2
forenoon     4
afternoon    4
dtype: int64
```

In [7]:
```
#Replace missing values of quantity columns with mean.
#Replace missing values of price columns with median.
#Replace missing values of bought columns with Standard Deviation.
#Replace missing values of forenoon columns with minimum value in that co
#Replace missing values of afternoon columns with maximum value in that c
```

In [8]:
```
#Replace missing values of quantity columns with mean.
data['quantity'] = data['quantity'].fillna(data['quantity'].mean())
data
```

Out[8]:

	id	item	quantity	price	bought	forenoon	afternoon
0	1	milk	2.0	67.0	672.0	456.0	324.0
1	2	sugar	1.0	NaN	453.0	234.0	NaN
2	3	chips	2.5	45.0	456.0	322.0	254.0
3	4	coffee	2.0	45.0	672.0	564.0	NaN
4	5	meat	4.0	56.0	NaN	221.0	NaN
5	6	chocos	3.0	NaN	345.0	NaN	213.0
6	7	juice	1.0	78.0	765.0	NaN	344.0
7	8	jam	2.5	65.0	665.0	453.0	333.0
8	9	bread	3.0	NaN	NaN	NaN	567.0
9	10	butter	4.0	NaN	354.0	NaN	322.0
10	11	icecream	1.0	300.0	454.0	323.0	432.0
11	12	cake	2.0	250.0	654.0	453.0	345.0
12	13	pizza	2.5	200.0	345.0	254.0	NaN
13	14	cold drink	2.0	100.0	564.0	578.0	234.0
14	15	biscuits	5.0	50.0	345.0	654.0	456.0

In [9]:
```
#Replace missing values of price columns with median.
data['price']=data['price'].fillna(data['price'].median())
data
```

Out[9]:

	id	item	quantity	price	bought	forenoon	afternoon
0	1	milk	2.0	67.0	672.0	456.0	324.0
1	2	sugar	1.0	67.0	453.0	234.0	NaN
2	3	chips	2.5	45.0	456.0	322.0	254.0
3	4	coffee	2.0	45.0	672.0	564.0	NaN
4	5	meat	4.0	56.0	NaN	221.0	NaN
5	6	chocos	3.0	67.0	345.0	NaN	213.0
6	7	juice	1.0	78.0	765.0	NaN	344.0
7	8	jam	2.5	65.0	665.0	453.0	333.0
8	9	bread	3.0	67.0	NaN	NaN	567.0
9	10	butter	4.0	67.0	354.0	NaN	322.0
10	11	icecream	1.0	300.0	454.0	323.0	432.0
11	12	cake	2.0	250.0	654.0	453.0	345.0
12	13	pizza	2.5	200.0	345.0	254.0	NaN
13	14	cold drink	2.0	100.0	564.0	578.0	234.0
14	15	biscuits	5.0	50.0	345.0	654.0	456.0

In [10]:
```
#Replace missing values of bought columns with Standard Deviation.
data['bought']=data['bought'].fillna(data['bought'].std())
data
```

Out[10]:

	id	item	quantity	price	bought	forenoon	afternoon
0	1	milk	2.0	67.0	672.000000	456.0	324.0
1	2	sugar	1.0	67.0	453.000000	234.0	NaN
2	3	chips	2.5	45.0	456.000000	322.0	254.0
3	4	coffee	2.0	45.0	672.000000	564.0	NaN
4	5	meat	4.0	56.0	152.616706	221.0	NaN
5	6	chocos	3.0	67.0	345.000000	NaN	213.0
6	7	juice	1.0	78.0	765.000000	NaN	344.0
7	8	jam	2.5	65.0	665.000000	453.0	333.0
8	9	bread	3.0	67.0	152.616706	NaN	567.0
9	10	butter	4.0	67.0	354.000000	NaN	322.0
10	11	icecream	1.0	300.0	454.000000	323.0	432.0
11	12	cake	2.0	250.0	654.000000	453.0	345.0
12	13	pizza	2.5	200.0	345.000000	254.0	NaN
13	14	cold drink	2.0	100.0	564.000000	578.0	234.0
14	15	biscuits	5.0	50.0	345.000000	654.0	456.0

In [11]:
```
#Replace missing values of afternoon columns with maximum value in that co
data['afternoon']=data['afternoon'].fillna(data['afternoon'].max())
data
```

Out[11]:

	id	item	quantity	price	bought	forenoon	afternoon
0	1	milk	2.0	67.0	672.000000	456.0	324.0
1	2	sugar	1.0	67.0	453.000000	234.0	567.0
2	3	chips	2.5	45.0	456.000000	322.0	254.0
3	4	coffee	2.0	45.0	672.000000	564.0	567.0
4	5	meat	4.0	56.0	152.616706	221.0	567.0
5	6	chocos	3.0	67.0	345.000000	NaN	213.0
6	7	juice	1.0	78.0	765.000000	NaN	344.0
7	8	jam	2.5	65.0	665.000000	453.0	333.0
8	9	bread	3.0	67.0	152.616706	NaN	567.0
9	10	butter	4.0	67.0	354.000000	NaN	322.0
10	11	icecream	1.0	300.0	454.000000	323.0	432.0
11	12	cake	2.0	250.0	654.000000	453.0	345.0
12	13	pizza	2.5	200.0	345.000000	254.0	567.0
13	14	cold drink	2.0	100.0	564.000000	578.0	234.0
14	15	biscuits	5.0	50.0	345.000000	654.0	456.0

In [12]:
```
'''Create a Python program to load the Data.csv file in DataFrame, find th
values from it. Display which column contains missing values. Replace miss
as follows and display result: (The Data.csv file is uploaded in classroor
Replace missing value with some scalar / fix value.
Replace missing value with value of previous row value
Replace missing value with value of next row value.
Replace missing value with value of previous column value
Replace missing value with value of next row value'''
```

Out[12]:
```
'Create a Python program to load the Data.csv file in DataFrame, find the mis
sing\nvalues from it. Display which column contains missing values. Replace m
issing value\nas follows and display result: (The Data.csv file is uploaded i
n classroom)\nReplace missing value with some scalar / fix value.\nReplace mi
ssing value with value of previous row value\nReplace missing value with valu
e of next row value.\nReplace missing value with value of previous column val
ue\nReplace missing value with value of next row value'
```

In [13]:
```
df=pd.read_csv("data.csv")
df
```

Out[13]:

	Unnamed: 0	A	B	C	D	E	F	G
0	1	20	NaN	30	15.0	45.0	8	35
1	2	15	50.0	5	2.0	7.0	5	10
2	3	20	4.0	30	NaN	NaN	10	35

In [14]:
```
df.isna()
```

Out[14]:

	Unnamed: 0	A	B	C	D	E	F	G
0	False	False	True	False	False	False	False	False
1	False	False	False	False	False	False	False	False
2	False	False	False	False	True	True	False	False

In [15]:
```
df.isna().sum()
```

Out[15]:
```
Unnamed: 0    0
A             0
B             1
C             0
D             1
E             1
F             0
G             0
dtype: int64
```

In [16]:
```
#Replace missing value with some scalar / fix value.
df1=df.fillna(value=55)
df1
```

Out[16]:

	Unnamed: 0	A	B	C	D	E	F	G
0	1	20	55.0	30	15.0	45.0	8	35
1	2	15	50.0	5	2.0	7.0	5	10
2	3	20	4.0	30	55.0	55.0	10	35

In [17]:
```
#Replace missing value with value of previous row value
df2=df.fillna(axis=0,method='ffill')
df2
```

Out[17]:

	Unnamed: 0	A	B	C	D	E	F	G
0	1	20	NaN	30	15.0	45.0	8	35
1	2	15	50.0	5	2.0	7.0	5	10
2	3	20	4.0	30	2.0	7.0	10	35

In [18]:
```
#Replace missing value with value of next row value.
df3=df.fillna(axis=0,method='bfill')
df3
```

Out[18]:

	Unnamed: 0	A	B	C	D	E	F	G
0	1	20	50.0	30	15.0	45.0	8	35
1	2	15	50.0	5	2.0	7.0	5	10
2	3	20	4.0	30	NaN	NaN	10	35

In [19]:
```
#Replace missing value with value of previous column value
df4=df.fillna(axis=1,method='ffill')
df4
```

Out[19]:

	Unnamed: 0	A	B	C	D	E	F	G
0	1.0	20.0	20.0	30.0	15.0	45.0	8.0	35.0
1	2.0	15.0	50.0	5.0	2.0	7.0	5.0	10.0
2	3.0	20.0	4.0	30.0	30.0	30.0	10.0	35.0

In [20]:
```
#Replace missing value with value of next row value
df5=df.fillna(axis=0,method='bfill')
df5
```

Out[20]:

	Unnamed: 0	A	B	C	D	E	F	G
0	1	20	50.0	30	15.0	45.0	8	35
1	2	15	50.0	5	2.0	7.0	5	10
2	3	20	4.0	30	NaN	NaN	10	35