## Read the file

```
import pandas as pd
In [2]:
           df=pd.read_excel("D:\others\Python new.xlsx")
In [3]:
               No_of_Days
                                         Start_time
                                                     End_time Breakfast Office_Departure_time
                                                                                                    Office_Departure_time_1
                                                                                                                                           W1
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          30 rows × 37 columns
```

## **Data Cleaning**

In [4]: df.drop\_duplicates()

4]:	No_of_Days	Date	Start_time	End_time	Breakfast	Office_Departure_time	Office_Departure_time_1	work	W1	Break	 Mus
	0 Day	15/2/2023	07:30:00	23:00:00	30	20.0	NaN	30.0	NaN	15.0	 10
	1 Day	16/2/2023	08:04:00	22:40:00	25	25.0	NaN	1.0	NaN	10.0	 15
	2 Day	17/2/2023	08:00:00	22:30:00	20	20.0	NaN	1.0	NaN	10.0	 10
	3 Day	18/2/2023	10:00:00	23:00:00	25	NaN	Leave	NaN	Leave	NaN	 20
	4 Day	19/2/2023	08:30:00	12:00:00	30	NaN	Leave	NaN	Leave	NaN	 20
	5 Day	20/2/2023	07:40:00	22:45:00	15	25.0	NaN	1.0	NaN	5.0	 10
	6 Day	21/2/2023	07:45:00	23:00:00	15	15.0	NaN	1.0	NaN	15.0	 15
	7 Day	22/2/2023	07:50:00	22:30:00	15	15.0	NaN	130.0	NaN	5.0	 30
	8 Day	23/2/2023	08:00:00	23:00:00	20	21.0	NaN	1.0	NaN	NaN	 10
	9 Day	24/2/2023	07:50:00	23:00:00	15	10.0	NaN	1.0	NaN	5.0	 10
1	<b>0</b> Day	25/2/2023	08:00:00	23:00:00	10	NaN	Outing	1.0	NaN	NaN	 5
1	1 Day	26/2/2023	08:30:00	00:00:00	15	NaN	Leave	1.0	NaN	NaN	 15
1	2 Day	27/2/2023	07:50:00	23:45:00	20	15.0	NaN	1.0	NaN	10.0	 10
1	3 Day	28/2/2023	08:00:00	23:15:00	20	15.0	NaN	1.0	NaN	10.0	 10
1	4 Day	01/03/2023	08:00:00	23:30:00	15	20.0	NaN	1.0	NaN	10.0	 10
1	5 Day	02/02/2023	08:10:00	23:30:00	20	20.0	NaN	1.0	NaN	15.0	 10
1	6 Day	03/03/2023	08:00:00	12:00:00	20	25.0	NaN	1.0	NaN	15.0	 30
1	7 Day	04/03/2023	08:30:00	10:30 PM	30	NaN	Leave	NaN	Personal Work	NaN	 15
1	8 Day	05/03/2023	08:30:00	23:30:00	1	NaN	Leave	NaN	Leave	NaN	 Na
1	9 Day	06/03/2023	08:00:00	23:30:00	20	30.0	NaN	1.0	NaN	10.0	 10
2	<b>20</b> Day	07/03/2023	08:00:00	00:30:00	25	30.0	NaN	1.0	NaN	15.0	 15
2	21 Day	08/03/2023	08:00:00	00:30:00	20	20.0	NaN	230.0	NaN	10.0	 15
2	22 Day	09/03/2023	08:00:00	22:30:00	15	20.0	NaN	2.0	NaN	15.0	 10
2	23 Day	10/03/2023	08:00:00	22:30:00	15	15.0	NaN	1.0	NaN	15.0	 Na
2	24 Day	11/03/2023	08:00:00	22:30:00	20	NaN	Leave	NaN	Leave	NaN	 20
2	25 Day	12/03/2023	07:40:00	22:30:00	20	NaN	Leave	NaN	Leave	NaN	 20
2	26 Day	13/03/2023	08:00:00	23:00:00	30	15.0	NaN	2.0	NaN	15.0	 15
2	27 Day	14/03/2023	08:00:00	23:00:00	30	5.0	NaN	230.0	NaN	5.0	 10
2	28 Day	15/03/2023	08:00:00	23:00:00	30	15.0	NaN	2.0	NaN	15.0	 10

29

Day 16/03/2023 07:30:00 23:30:00

In [5]: df.fillna("0", inplace = True) df

15.0

2.0

NaN

15.0 ...

NaN

t[5]:	No_	of_Days	Date	Start_time	End_time	Breakfast	Office_Departure_time	Office_Departure_time_1	work	W1	Break	 Mus
	0	Day	15/2/2023	07:30:00	23:00:00	30	20.0	0	30.0	0	15.0	 10
	1	Day	16/2/2023	08:04:00	22:40:00	25	25.0	0	1.0	0	10.0	 15
	2	Day	17/2/2023	08:00:00	22:30:00	20	20.0	0	1.0	0	10.0	 10
	3	Day	18/2/2023	10:00:00	23:00:00	25	0	Leave	0	Leave	0	 20
	4	Day	19/2/2023	08:30:00	12:00:00	30	0	Leave	0	Leave	0	 20
	5	Day	20/2/2023	07:40:00	22:45:00	15	25.0	0	1.0	0	5.0	 10
	6	Day	21/2/2023	07:45:00	23:00:00	15	15.0	0	1.0	0	15.0	 15
	7	Day	22/2/2023	07:50:00	22:30:00	15	15.0	0	130.0	0	5.0	 30
	8	Day	23/2/2023	08:00:00	23:00:00	20	21.0	0	1.0	0		 10
	9	Day	24/2/2023	07:50:00	23:00:00	15	10.0	0	1.0	0	5.0	 10
	10	Day	25/2/2023	08:00:00	23:00:00	10	0	Outing	1.0	0	0	 5
	11	Day	26/2/2023	08:30:00	00:00:00	15	0	Leave	1.0	0	0	 15
	12	Day	27/2/2023	07:50:00	23:45:00	20	15.0	0	1.0	0	10.0	10
	13	Day	28/2/2023	08:00:00	23:15:00	20	15.0	0	1.0	0	10.0	10
	14	Day	01/03/2023	08:00:00	23:30:00	15	20.0	0	1.0	0	10.0	10
	15	Day	02/02/2023	08:10:00	23:30:00	20	20.0	0	1.0	0	15.0	10
	16	Day	03/03/2023	08:00:00	12:00:00	20	25.0	0	1.0	0	15.0	 30
	17	Day	04/03/2023	08:30:00	10:30 PM	30	0	Leave	0	Personal Work	0	 15
	18	Day	05/03/2023	08:30:00	23:30:00	1	0	Leave	0	Leave	0	
	19	Day	06/03/2023	08:00:00	23:30:00	20	30.0	0	1.0	0	10.0	 10
	20	Day	07/03/2023	08:00:00	00:30:00	25	30.0	0	1.0	0	15.0	 15
	21	Day	08/03/2023	08:00:00	00:30:00	20	20.0	0	230.0	0	10.0	 15
	22	Day	09/03/2023	08:00:00	22:30:00	15	20.0	0	2.0	0	15.0	 10
	23	Day	10/03/2023	08:00:00	22:30:00	15	15.0	0	1.0	0	15.0	
	24	Day	11/03/2023	08:00:00	22:30:00	20	0	Leave	0	Leave	0	 20
	25	Day	12/03/2023	07:40:00	22:30:00	20	0	Leave	0	Leave	0	 20
	26	Day	13/03/2023	08:00:00	23:00:00	30	15.0	0	2.0	0	15.0	 15
	27	Day	14/03/2023	08:00:00	23:00:00	30	5.0	0	230.0	0	5.0	 10
	28	Day	15/03/2023	08:00:00	23:00:00	30	15.0	0	2.0	0	15.0	 10

15.0

0 2.0

0 15.0 ... 5

30 rows × 37 columns

Day 16/03/2023 07:30:00 23:30:00

```
In [6]: df["Breakfast"]=df["Breakfast"].astype("int")
    df["Office_Departure_time"]=df["Office_Departure_time"].astype("int")
    df["work"]=dff["Break"].astype("int")
    df["Break"]=dff["Break"].astype("int")
    df["work2"]=dff["work2"].astype("int")
    df["lunch"]=dff["lunch"].astype("int")
    df["work3"]=dff["work3"].astype("int")
    df["break2"]=dff["work4"].astype("int")
    df["Return_time"]=dff["Return_time"].astype("int")
    df["Fitness"]=dff["Retresh"].astype("int")
    df["Refresh"]=dff["Refresh"].astype("int")
    df["reading "]=dff["Music"].astype("int")
    dff["study"]=dff["linkedin"].astype("int")
    dff["study"]=dff["study"].astype("int")
    dff["study"]=dff["study"].astype("int")
    dff["study"]=dff["dinner"].astype("int")
    dff["sleep"]=dff["dinner"].astype("int")
    dff["sleep"]=dff["sleep"].astype("int")
    dff["sleep"]=dff["sleep"].astype("int")
```

]:	No_of_Days	Date	Start_time	End_time	Breakfast	Office_Departure_time	Office_Departure_time_1	work	W1	Break	 Mus
0	Day	15/2/2023	07:30:00	23:00:00	30	20	0	30	0	15	 1
1	Day	16/2/2023	08:04:00	22:40:00	25	25	0	1	0	10	 1
2	Day	17/2/2023	08:00:00	22:30:00	20	20	0	1	0	10	 1
3	Day	18/2/2023	10:00:00	23:00:00	25	0	Leave	0	Leave	0	 2
4	Day	19/2/2023	08:30:00	12:00:00	30	0	Leave	0	Leave	0	 2
5	Day	20/2/2023	07:40:00	22:45:00	15	25	0	1	0	5	 1
6	Day	21/2/2023	07:45:00	23:00:00	15	15	0	1	0	15	 1
7	Day	22/2/2023	07:50:00	22:30:00	15	15	0	130	0	5	 3
8	Day	23/2/2023	08:00:00	23:00:00	20	21	0	1	0	0	 1
9	Day	24/2/2023	07:50:00	23:00:00	15	10	0	1	0	5	 1
10	Day	25/2/2023	08:00:00	23:00:00	10	0	Outing	1	0	0	
11	Day	26/2/2023	08:30:00	00:00:00	15	0	Leave	1	0	0	 1
12	Day	27/2/2023	07:50:00	23:45:00	20	15	0	1	0	10	 1
13	Day	28/2/2023	08:00:00	23:15:00	20	15	0	1	0	10	 1
14	Day	01/03/2023	08:00:00	23:30:00	15	20	0	1	0	10	 1
15	Day	02/02/2023	08:10:00	23:30:00	20	20	0	1	0	15	 1
16	Day	03/03/2023	08:00:00	12:00:00	20	25	0	1	0	15	 3
17	Day	04/03/2023	08:30:00	10:30 PM	30	0	Leave	0	Personal Work	0	 1
18	Day	05/03/2023	08:30:00	23:30:00	1	0	Leave	0	Leave	0	
19	Day	06/03/2023	08:00:00	23:30:00	20	30	0	1	0	10	 1
20	Day	07/03/2023	08:00:00	00:30:00	25	30	0	1	0	15	 1
21	Day	08/03/2023	08:00:00	00:30:00	20	20	0	230	0	10	 1
22	Day	09/03/2023	08:00:00	22:30:00	15	20	0	2	0	15	 1
23	Day	10/03/2023	08:00:00	22:30:00	15	15	0	1	0	15	
24	Day	11/03/2023	08:00:00	22:30:00	20	0	Leave	0	Leave	0	 2
25	Day	12/03/2023	07:40:00	22:30:00	20	0	Leave	0	Leave	0	 2
26	Day	13/03/2023	08:00:00	23:00:00	30	15	0	2	0	15	 1
27	Day	14/03/2023	08:00:00	23:00:00	30	5	0	230	0	5	 1
28	Day	15/03/2023	08:00:00	23:00:00	30	15	0	2	0	15	 1

Day 16/03/2023 07:30:00 23:30:00

29

15 ...

3]:	No_of_Days	Date	Start_time	End_time	Breakfast	Office_Departure_time	Office_Departure_time_1	work	W1	Break	 Musi
-	<b>D</b> Day	15/2/2023	07:30:00	23:00:00	30	20	0	30	0	15	 1
	<b>1</b> Day	16/2/2023	08:04:00	22:40:00	25	25	0	1	0	10	 1
2	2 Day	17/2/2023	08:00:00	22:30:00	20	20	0	1	0	10	 1
;	3 Day	18/2/2023	10:00:00	23:00:00	25	0	Leave	0	Leave	0	 2
4	<b>4</b> Day	19/2/2023	08:30:00	12:00:00	30	0	Leave	0	Leave	0	 2
,	5 Day	20/2/2023	07:40:00	22:45:00	15	25	0	1	0	5	 1
(	6 Day	21/2/2023	07:45:00	23:00:00	15	15	0	1	0	15	 1
7	<b>7</b> Day	22/2/2023	07:50:00	22:30:00	15	15	0	130	0	5	 3
8	B Day	23/2/2023	08:00:00	23:00:00	20	21	0	1	0	0	 1
,	<b>9</b> Day	24/2/2023	07:50:00	23:00:00	15	10	0	1	0	5	 1
10	<b>D</b> Day	25/2/2023	08:00:00	23:00:00	10	0	Outing	1	0	0	
1	<b>1</b> Day	26/2/2023	08:30:00	00:00:00	15	0	Leave	1	0	0	 1
12	2 Day	27/2/2023	07:50:00	23:45:00	20	15	0	1	0	10	 1
13	,	28/2/2023	08:00:00	23:15:00	20	15	0	1	0	10	1
14	·	01/03/2023	08:00:00	23:30:00	15	20	0	1	0	10	1
1	·	02/02/2023	08:10:00	23:30:00	20	20	0	1	0	15	1
10	<b>6</b> Day	03/03/2023	08:00:00	12:00:00	20	25	0	1	0	15	 3
17	<b>7</b> Day	04/03/2023	08:30:00	10:30 PM	30	0	Leave	0	Personal Work	0	 1
18	B Day	05/03/2023	08:30:00	23:30:00	1	0	Leave	0	Leave	0	
19	<b>D</b> Day	06/03/2023	08:00:00	23:30:00	20	30	0	1	0	10	 1
20	Day	07/03/2023	08:00:00	00:30:00	25	30	0	1	0	15	 1
2	<b>1</b> Day	08/03/2023	08:00:00	00:30:00	20	20	0	230	0	10	 1
22	2 Day	09/03/2023	08:00:00	22:30:00	15	20	0	2	0	15	 1
23	B Day	10/03/2023	08:00:00	22:30:00	15	15	0	1	0	15	
24	<b>1</b> Day	11/03/2023	08:00:00	22:30:00	20	0	Leave	0	Leave	0	 2
2	5 Day	12/03/2023	07:40:00	22:30:00	20	0	Leave	0	Leave	0	 2
20	<b>6</b> Day	13/03/2023	08:00:00	23:00:00	30	15	0	2	0	15	 1
27	<b>7</b> Day	14/03/2023	08:00:00	23:00:00	30	5	0	230	0	5	 1
28	B Day	15/03/2023	08:00:00	23:00:00	30	15	0	2	0	15	 1
29	<b>9</b> Day	16/03/2023	07:30:00	23:30:00	5	15	0	2	0	15	

## **Analysis**

Tn [13] name2=["work"."work2"."work3"."work4"]

```
In [9]: ## Copmare the how many hours I spend for work
         name=["work","work2","work3","work4"]
         df[name].count()
 Out[9]: work
                  30
         work2
                  30
         work3
                  30
         work4
                  30
         dtype: int64
In [10]: df[name].sum()
Out[10]: work
                   644
                    44
         work2
         work3
                    40
         work4
                  1224
         dtype: int64
In [11]: name1=["work","work2","work3","work4"]
         df[name1].mean()
Out[11]: work
                  21.466667
         work2
                   1.466667
                   1.333333
         work3
         work4
                  40.800000
         dtype: float64
```

```
df[name2].median()
Out[12]: work
                   1.0
          work2
                   2.0
          work3
                   2.0
          work4
                   2.0
          dtype: float64
In [13]: name3=["work","work2","work3","work4"]
          df[name3].mode()
           work work2 work3 work4
Out[13]:
In [14]: name2=["work","work2","work3","work4"]
          df[name2].std()
                   61.534254
          work
Out[14]:
          work2
                    0.899553
          work3
                    0.922266
          work4
                   90.638882
          dtype: float64
In [15]: #Over all hours
          values=[31+44+40+45]
          print(values)
          [160]
In [16]: #Average of daily hours
          V1=(160/4)
          print(V1)
          40.0
In [17]: ## Copmare the how many hours I spend for study
          df["study"].count()
Out[17]:
In [18]: df["study"].sum()
Out[18]:
In [19]: ##Average of daily hours
          V2=(11.40/30)
          print(V2)
          0.38
In [20]: # Correlation between the works and study
          column=["work","work2","work3","work4","study"]
          df[column].corr()
                           work2
                                                       study
           work 1.000000 0.211473 0.254793 -0.103962 -0.061677
          work2 0.211473 1.000000 0.886702 0.276084
                                                   0.331121
          work3 0.254793 0.886702 1.000000
                                           0.200066
                                                    0.404438
          work4 -0.103962 0.276084 0.200066 1.000000
                                                    0.056918
          \textbf{study} \  \  \, \textbf{-0.061677} \quad 0.331121 \quad 0.404438 \quad 0.056918
                                                   1.000000
In [21]: # Compare by Linkedin
          df["linkedin"].count()
Out[21]:
In [22]: df["linkedin"].sum()
Out[22]:
In [23]: ##Average of daily hours
          df["linkedin"].mean()
Out[23]: 14.2
Ta [34]. print/df[["linkodin" "ctudy"]] corr/))
```

In [24]: print(uitt tinkeuin , study ]].coi())

linkedin study linkedin 1.000000 -0.042884 study -0.042884 1.000000

In [25]: #Reasons for work

df[["W1","W2","W3","W4"]]

Out[25]:

	W1	W2	W3	W4
0	0	0	0	0
1	0	0	0	0
2	0	0	0	0
3	Leave	Leave	Leave	Leave
4	Leave	Leave	Leave	Peronal work
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0
9	0	0	0	0
10	0	Outing	Outing	Outing
11	0	Leave	Leave	Leave
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	Personal Work	peronal work	Leave	Leave
18	Leave	Leave	Shopping	Shopping
19	0	0	0	0
20	0	0	0	0
21	0	0	0	0
22	0	0	0	0
23	0	0	0	0
24	Leave	Leave	Leave	Peronal work
25	Leave	Shopping	Shopping	Shopping
26	0	0	0	0
27	0	0	0	0
28	0	0	Activities	Activities
29	0	0	0	0

In [26]: #Reasons for linkedin

df["linkedin1"]

```
Out[26]: 0
1
2
                          0
0
0
0
           4
           5
                          0
0
0
0
0
           6
7
           8
           9
           10
           11
                          0
0
0
           12
           13
           14
                          0
                          0
           15
           16
                          0
           17
                          0
                  Skipped
0
           18
           19
           20
           21
22
                          0
                          0
                          0
0
           23
           24
                          0
           25
           26
           27
                          0
           28
                          0
           29
                          0
           Name: linkedin1, dtype: object
In [27]: #Reasons for study
df["study1"]
Out[27]:
           1
                          0
                          0
           3
           4
                  Skipped
                          0
           6
7
                          0
           8
                          0
           9
                          0
           10
                  Skipped
                          0
           11
                          0
           12
           13
                          0
           14
                          0
           15
                          0
           16
                  Skipped
           17
           18
                  Skipped
           19
                          0
           20
           21
                          0
           22
                          0
                  Skipped
Skipped
Skipped
           23
           24
           25
           26
                  Skipped
           27
                  Skipped
0
           28
           29
           Name: study1, dtype: object
In [28]: #Copmare by Fitness
           df["Fitness"]
```

```
Out[28]: 0
               15
               20
         2
                15
               30
         4
                0
         5
               10
               15
         7
                0
         8
                0
         9
                5
         10
               10
         11
                0
               10
         12
         13
               10
         14
               10
         15
                0
         16
                0
         17
                0
         18
                0
         19
               10
         20
               15
         21
                0
         22
               0
               15
         23
         24
               15
         25
               15
         26
               15
         27
               15
         28
               15
         29
               10
         Name: Fitness, dtype: int32
In [29]: df["Fitness"].sum()
         275
Out[29]:
In [30]: #Average of daily hours
         df["Fitness"].mean()
Out[30]: 9.16666666666666
In [31]: df["Fitness1"]
Out[31]: 0
         1
                     0
         2
                     0
         3
                     0
         4
               Skipped
         5
                     0
         6
                     0
         7
               Skipped
         8
               Skipped
         9
                     0
         10
                     0
         11
                Leave
                     0
         12
         13
                     0
         14
                     0
         15
               Skipped
         16
               Skipped
         17
               Skipped
         18
               Skipped
         19
                     0
         20
         21
               Skipped
         22
               Skipped
         23
                     0
         24
                     0
         25
                     0
                     0
         26
         27
                     0
         28
                     0
         29
                     0
         Name: Fitness1, dtype: object
In [32]: #Copmare to Departure time by Return time
         df[["Office_Departure_time", "Return_time"]]
```

	1	25	40
	2	20	40
	3	0	0
	4	0	0
	5	25	20
	6	15	30
	7	15	30
	8	21	40
	9	10	15
	10	0	1
	11	0	0
	12	15	30
		15	2
		20	30
		20	20
		25	15
	17	0	0
	18	0	40
		30	30
		30	20
		20	20
		20	25
		15	25
	24	0	
	25	0	2
	26 27	15 5	25
		15	30 40
		15	0
	20	10	
In [33]:	df[["Office_Depart	ure_time",	,"Return_time"]].count()
Out[33]:	Office_Departure_t Return_time dtype: int64	ime 30 30	
In [34]:	df[["Office_Depart	ure_time",	,"Return_time"]].sum()
Out[34]:	Office_Departure_t Return_time dtype: int64	ime 411 600	
In [35]:	df[["Office_Depart	ure_time",	,"Return_time"]].mean()
Out[35]:	Office_Departure_t Return_time dtype: float64		.7
T- (00)	nrint/df[["Office	Donarturo	time" "Poture time"   corr())

Out[32]:

Office\_Departure\_time Return\_time

In [36]: print(df[["Office\_Departure\_time","Return\_time"]].corr())

In [37]: df[["Office\_Departure\_time\_1","Return\_time1"]]

Office\_Departure\_time Return\_time

 ${\tt Office\_Departure\_time} \quad {\tt Return\_time}$ 

 $1.0\overline{0}0000$ 

0.555473

 $0.5\overline{5}5473$ 

1.000000

0		Office Departure time 4	Detum timed
Out[37]:	_	Office_Departure_time_1	
	0	0	0
	1	0	0
	2	0	0
	4	Leave	Leave Peronal work
	5	Leave 0	0
	6	0	0
	7	0	0
	8	0	0
	9	0	0
	10	Outing	0
	11	Leave	Leave
	12	0	0
	13	0	0
	14	0	0
	15	0	0
	16	0	0
	17	Leave	Leave
	18	Leave	0
	19	0	0
	20	0	0
	21	0	0
	22	0	0
	23	0	0
	24	Leave	Leave
	25	Leave	0
	26	0	0
	27	0	0

```
In [38]: #Copmare to Reading by Music

df[["reading ","Music"]]
```

0 Activities

```
2
                 10
                       10
           3
                 25
                       20
                       20
           5
                 15
                       10
           6
                  5
                       15
           7
                       30
           8
                  0
                       10
           9
                  5
                       10
          10
                        5
          11
                       15
                  5
          12
                  5
                       10
          13
                       10
          14
                       10
                  5
                  5
                       10
          15
          16
                  0
                       30
          17
                 10
                       15
                        0
          18
                  0
          19
                  0
                       10
          20
                 10
                       15
          21
                  5
                       15
          22
                 10
                       10
          23
                       0
                  0
          24
                  0
                       20
          25
                  0
                       20
          26
                 10
                       15
          27
                  5
                       10
          28
                  5
                       10
                     5
                 10
          29
In [39]: df[["reading ","Music"]].count()
          reading
                      30
Out[39]:
         Music
                      30
          dtype: int64
In [40]: df[["reading ","Music"]].sum()
Out[40]: reading
                      175
          Music
                      385
          dtype: int64
In [41]: df[["reading ","Music"]].mean()
Out[41]: reading
                      5.833333
          Music
                      12.833333
          dtype: float64
In [42]: print(df[["reading ","Music"]].corr())
```

reading Music

reading

1.000000 -0.018128 -0.018128 1.000000

reading

In [43]: df[["reading 1","Music1"]]

Music

Music

Out[38]:

```
reading 1 Music1
Out[43]:
                              0
            2
                      0
                              0
            3
                      0
                              0
                Skipped
            5
                      0
                              0
                      0
                              0
            6
                Skipped
            8
                Skipped
                              0
                              0
            9
                      0
           10
                Skipped
           11
                      0
                              0
           12
                      0
                              0
                      0
           13
                      0
           14
                              0
                              0
           15
                      0
           16
                Skipped
                              0
                              0
           17
                      0
                Skipped Skipped
           18
           19
                Skipped
           20
                      0
                              0
           21
                      0
                              0
           22
                      0
           23
                Skipped Skipped
           24
                Skipped
           25
                Skipped
           26
                      0
                              0
           27
                      0
                              0
           28
                      0
                              0
                      0
                              0
           29
```

## Visualization

```
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
```

import pandas as pd
df=pd.read\_excel("D:\others\Python new.xlsx")
df.head()

5]:	No_of_Days	Date	Start_time	End_time	Breakfast	Office_Departure_time	Office_Departure_time_1	work	W1	Break	 Music	Λ
0	Day	15/2/2023	07:30:00	23:00:00	30	20.0	NaN	30.0	NaN	15.0	 10.0	
1	Day	16/2/2023	08:04:00	22:40:00	25	25.0	NaN	1.0	NaN	10.0	 15.0	
2	Day	17/2/2023	08:00:00	22:30:00	20	20.0	NaN	1.0	NaN	10.0	 10.0	
3	Day	18/2/2023	10:00:00	23:00:00	25	NaN	Leave	NaN	Leave	NaN	 20.0	
4	Dav	19/2/2023	08:30:00	12:00:00	30	NaN	Leave	NaN	Leave	NaN	 20.0	

5 rows × 37 columns

In [46]: df.drop\_duplicates()

	No_	_of_Days	Date	Start_time	End_time	Breakfast	Office_Departure_time	Office_Departure_time_1	work	W1	Break	 Mus
_	0	Day	15/2/2023	07:30:00	23:00:00	30	20.0	NaN	30.0	NaN	15.0	 10
	1	Day	16/2/2023	08:04:00	22:40:00	25	25.0	NaN	1.0	NaN	10.0	 15
	2	Day	17/2/2023	08:00:00	22:30:00	20	20.0	NaN	1.0	NaN	10.0	 10
	3	Day	18/2/2023	10:00:00	23:00:00	25	NaN	Leave	NaN	Leave	NaN	 20
	4	Day	19/2/2023	08:30:00	12:00:00	30	NaN	Leave	NaN	Leave	NaN	 20
	5	Day	20/2/2023	07:40:00	22:45:00	15	25.0	NaN	1.0	NaN	5.0	 10
	6	Day	21/2/2023	07:45:00	23:00:00	15	15.0	NaN	1.0	NaN	15.0	 15
	7	Day	22/2/2023	07:50:00	22:30:00	15	15.0	NaN	130.0	NaN	5.0	 30
	8	Day	23/2/2023	08:00:00	23:00:00	20	21.0	NaN	1.0	NaN	NaN	 10
	9	Day	24/2/2023	07:50:00	23:00:00	15	10.0	NaN	1.0	NaN	5.0	 10
	10	Day	25/2/2023	08:00:00	23:00:00	10	NaN	Outing	1.0	NaN	NaN	 5
	11	Day	26/2/2023	08:30:00	00:00:00	15	NaN	Leave	1.0	NaN	NaN	 15
	12	Day	27/2/2023	07:50:00	23:45:00	20	15.0	NaN	1.0	NaN	10.0	 10
	13	Day	28/2/2023	08:00:00	23:15:00	20	15.0	NaN	1.0	NaN	10.0	 10
	14	Day	01/03/2023	08:00:00	23:30:00	15	20.0	NaN	1.0	NaN	10.0	 10
	15	Day	02/02/2023	08:10:00	23:30:00	20	20.0	NaN	1.0	NaN	15.0	 10
	16	Day	03/03/2023	08:00:00	12:00:00	20	25.0	NaN	1.0	NaN	15.0	 30
	17	Day	04/03/2023	08:30:00	10:30 PM	30	NaN	Leave	NaN	Personal Work	NaN	 15
	18	Day	05/03/2023	08:30:00	23:30:00	1	NaN	Leave	NaN	Leave	NaN	 Na
	19	Day	06/03/2023	08:00:00	23:30:00	20	30.0	NaN	1.0	NaN	10.0	 10
	20	Day	07/03/2023	08:00:00	00:30:00	25	30.0	NaN	1.0	NaN	15.0	 15
	21	Day	08/03/2023	08:00:00	00:30:00	20	20.0	NaN	230.0	NaN	10.0	 15
	22	Day	09/03/2023	08:00:00	22:30:00	15	20.0	NaN	2.0	NaN	15.0	 10
	23	Day	10/03/2023	08:00:00	22:30:00	15	15.0	NaN	1.0	NaN	15.0	 Na
	24	Day	11/03/2023	08:00:00	22:30:00	20	NaN	Leave	NaN	Leave	NaN	 20
	25	Day	12/03/2023	07:40:00	22:30:00	20	NaN	Leave	NaN	Leave	NaN	 20

30

30

30

15.0

5.0

15.0

15.0

NaN

NaN

NaN

NaN 230.0

2.0

2.0

2.0

NaN

NaN

NaN

NaN

15.0 ...

15.0 ...

15.0 ...

5.0 ...

15

10

30 rows × 37 columns

26

27

28

29

Out[46]:

In [47]: df.fillna("0", inplace = True)
df

Day 15/03/2023

Day 16/03/2023

Day 13/03/2023 08:00:00 23:00:00

Day 14/03/2023 08:00:00 23:00:00

08:00:00

07:30:00

23:00:00

23:30:00

Out[47]:	No_of_Days	Date	Start_time	End_time	Breakfast	Office_Departure_time	Office_Departure_time_1	work	W1	Break	 Mus
_	0 Day	15/2/2023	07:30:00	23:00:00	30	20.0	0	30.0	0	15.0	 10
	1 Day	16/2/2023	08:04:00	22:40:00	25	25.0	0	1.0	0	10.0	 15
	<b>2</b> Day	17/2/2023	08:00:00	22:30:00	20	20.0	0	1.0	0	10.0	 10
	3 Day	18/2/2023	10:00:00	23:00:00	25	0	Leave	0	Leave	0	 20
	4 Day	19/2/2023	08:30:00	12:00:00	30	0	Leave	0	Leave	0	 20
	5 Day	20/2/2023	07:40:00	22:45:00	15	25.0	0	1.0	0	5.0	 10
	6 Day	21/2/2023	07:45:00	23:00:00	15	15.0	0	1.0	0	15.0	 15
	7 Day	22/2/2023	07:50:00	22:30:00	15	15.0	0	130.0	0	5.0	 30
	8 Day	23/2/2023	08:00:00	23:00:00	20	21.0	0	1.0	0	0	 10
	9 Day	24/2/2023	07:50:00	23:00:00	15	10.0	0	1.0	0	5.0	 10
	<b>10</b> Day	25/2/2023	08:00:00	23:00:00	10	0	Outing	1.0	0	0	 5
	<b>11</b> Day	26/2/2023	08:30:00	00:00:00	15	0	Leave	1.0	0	0	 15
	<b>12</b> Day	27/2/2023	07:50:00	23:45:00	20	15.0	0	1.0	0	10.0	 10
	13 Day	28/2/2023	08:00:00	23:15:00	20	15.0	0	1.0	0	10.0	 10
	14 Day	01/03/2023	08:00:00	23:30:00	15	20.0	0	1.0	0	10.0	 10
	15 Day	02/02/2023	08:10:00	23:30:00	20	20.0	0	1.0	0	15.0	 10
	16 Day	03/03/2023	08:00:00	12:00:00	20	25.0	0	1.0	0	15.0	 30
	<b>17</b> Day	04/03/2023	08:30:00	10:30 PM	30	0	Leave	0	Personal Work	0	 15
	18 Day	05/03/2023	08:30:00	23:30:00	1	0	Leave	0	Leave	0	
	<b>19</b> Day	06/03/2023	08:00:00	23:30:00	20	30.0	0	1.0	0	10.0	 10
	<b>20</b> Day	07/03/2023	08:00:00	00:30:00	25	30.0	0	1.0	0	15.0	 15
	<b>21</b> Day	08/03/2023	08:00:00	00:30:00	20	20.0	0	230.0	0	10.0	 15
	<b>22</b> Day	09/03/2023	08:00:00	22:30:00	15	20.0	0	2.0	0	15.0	 10
	<b>23</b> Day	10/03/2023	08:00:00	22:30:00	15	15.0	0	1.0	0	15.0	
	<b>24</b> Day	11/03/2023	08:00:00	22:30:00	20	0	Leave	0	Leave	0	 20
	<b>25</b> Day	12/03/2023	07:40:00	22:30:00	20	0	Leave	0	Leave	0	 20
	<b>26</b> Day	13/03/2023	08:00:00	23:00:00	30	15.0	0	2.0	0	15.0	 15
	<b>27</b> Day	14/03/2023	08:00:00	23:00:00	30	5.0	0	230.0	0	5.0	 10

Day 15/03/2023

Day 16/03/2023

08:00:00 23:00:00

23:30:00

07:30:00

28

29

```
In [48]: df["Breakfast"]=df["Breakfast"].astype("int")
    df["Office_Departure_time"]=df["Office_Departure_time"].astype("int")
    df["work"]=df["work"].astype("int")
    df["Break"]=df["Break"].astype("int")
    df["uvork2"]=df["work2"].astype("int")
    df["unch"]=df["lunch"].astype("int")
    df["break2"]=df["work3"].astype("int")
    df["break2"]=df["work4"].astype("int")
    df["Return_time"]=df["Return_time"].astype("int")
    df["Fitness"]=df["Fitness"].astype("int")
    df["Refresh"]=df["Refresh"].astype("int")
    df["reading "]=df["Refresh"].astype("int")
    df["reading "]=df["linkedin"].astype("int")
    df["study"]=df["study"].astype("int")
    df["study"]=df["study"].astype("int")
    df["sleep"]=df["dinner"].astype("int")
    df["Sleep"]=df["Sleep"].astype("int")
    df["Sleep"]=df["Sleep"].astype("int")
```

30

15.0

15.0

2.0

2.0

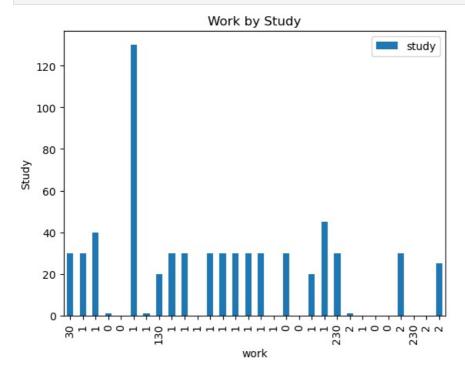
15.0 ...

15.0 ...

10

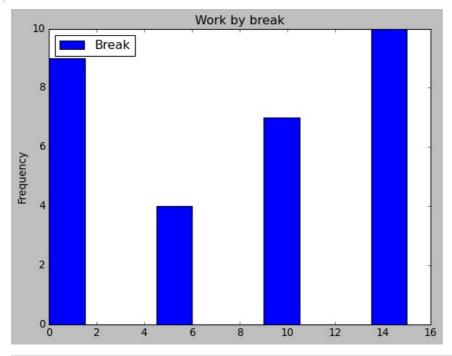
Musi	 Break	W1	work	Office_Departure_time_1	Office_Departure_time	Breakfast	End_time	Start_time	Date	No_of_Days	18]:
1	 15	0	30	0	20	30	23:00:00	07:30:00	15/2/2023	Day	0
1	 10	0	1	0	25	25	22:40:00	08:04:00	16/2/2023	Day	1
1	 10	0	1	0	20	20	22:30:00	08:00:00	17/2/2023	Day	2
2	 0	Leave	0	Leave	0	25	23:00:00	10:00:00	18/2/2023	Day	3
2	 0	Leave	0	Leave	0	30	12:00:00	08:30:00	19/2/2023	Day	4
1	 5	0	1	0	25	15	22:45:00	07:40:00	20/2/2023	Day	5
1	 15	0	1	0	15	15	23:00:00	07:45:00	21/2/2023	Day	6
3	 5	0	130	0	15	15	22:30:00	07:50:00	22/2/2023	Day	7
1	 0	0	1	0	21	20	23:00:00	08:00:00	23/2/2023	Day	8
1	 5	0	1	0	10	15	23:00:00	07:50:00	24/2/2023	Day	9
	 0	0	1	Outing	0	10	23:00:00	08:00:00	25/2/2023	Day	10
1	 0	0	1	Leave	0	15	00:00:00	08:30:00	26/2/2023	Day	11
1	 10	0	1	0	15	20	23:45:00	07:50:00	27/2/2023	Day	12
1	 10	0	1	0	15	20	23:15:00	08:00:00	28/2/2023	Day	13
1	 10	0	1	0	20	15	23:30:00	08:00:00	01/03/2023	Day	14
1	 15	0	1	0	20	20	23:30:00	08:10:00	02/02/2023	Day	15
3	 15	0	1	0	25	20	12:00:00	08:00:00	03/03/2023	Day	16
1	 0	Personal Work	0	Leave	0	30	10:30 PM	08:30:00	04/03/2023	Day	17
	 0	Leave	0	Leave	0	1	23:30:00	08:30:00	05/03/2023	Day	18
1	 10	0	1	0	30	20	23:30:00	08:00:00	06/03/2023	Day	19
1	 15	0	1	0	30	25	00:30:00	08:00:00	07/03/2023	Day	20
1	 10	0	230	0	20	20	00:30:00	08:00:00	08/03/2023	Day	21
1	 15	0	2	0	20	15	22:30:00	08:00:00	09/03/2023	Day	22
	 15	0	1	0	15	15	22:30:00	08:00:00	10/03/2023	Day	23
2	 0	Leave	0	Leave	0	20	22:30:00	08:00:00	11/03/2023	Day	24
2	 0	Leave	0	Leave	0	20	22:30:00	07:40:00	12/03/2023	Day	25
1	 15	0	2	0	15	30	23:00:00	08:00:00	13/03/2023	Day	26
1	 5	0	230	0	5	30	23:00:00	08:00:00	14/03/2023	Day	27
1	 15	0	2	0	15	30	23:00:00	08:00:00	15/03/2023	Day	28
	 15	0	2	0	15	5	23:30:00	07:30:00	16/03/2023	Day	29





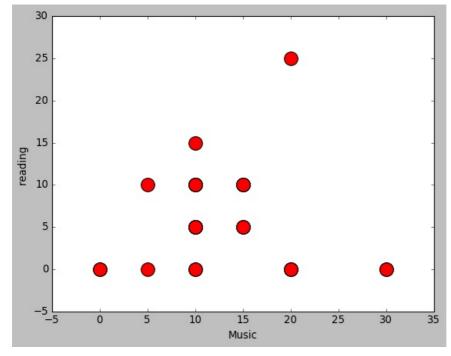
In [57]: df.plot(kind="hist", x="work",y="Break",title="Work by break")

Out[57]: <AxesSubplot:title={'center':'Work by break'}, ylabel='Frequency'>



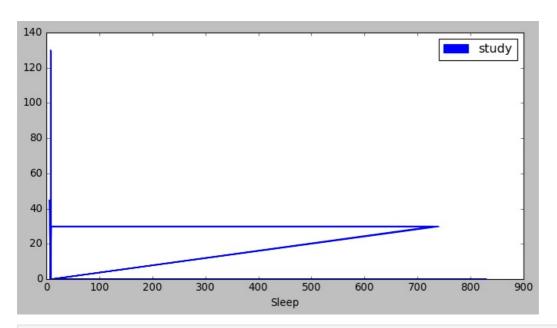
In [58]: df.plot.scatter(x= "Music" ,y="reading ", s=250, c= "red")

Out[58]: <AxesSubplot:xlabel='Music', ylabel='reading '>



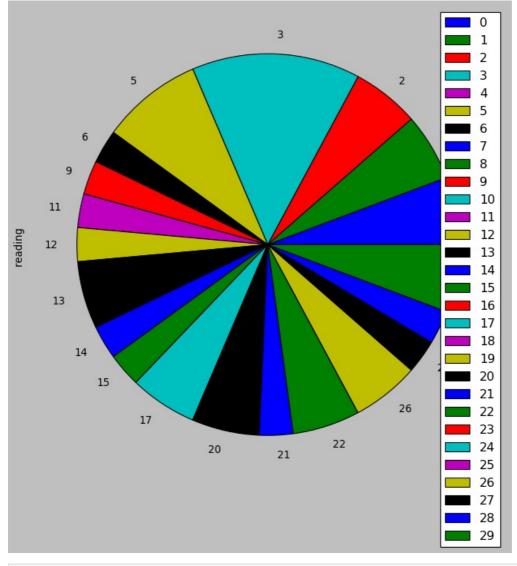
In [59]: df.plot.area(x="Sleep", y="study",figsize=(10,5))

Out[59]: <AxesSubplot:xlabel='Sleep'>



In [60]: df.plot.pie(y="reading ",figsize=(10,10))

Out[60]: <AxesSubplot:ylabel='reading '>



['Solarize\_Light2', '\_classic\_test\_patch', '\_mpl-gallery', '\_mpl-gallery-nogrid', 'bmh', 'classic', 'dark\_backg round', 'fast', 'fivethirtyeight', 'ggplot', 'grayscale', 'seaborn-bright', 'seaborn-colorblind', 's eaborn-dark', 'seaborn-dark-palette', 'seaborn-darkgrid', 'seaborn-deep', 'seaborn-muted', 'seaborn-notebook', 'seaborn-paper', 'seaborn-pastel', 'seaborn-poster', 'seaborn-talk', 'seaborn-ticks', 'seaborn-white', 'seaborn-whitegrid', 'tableau-colorblind10']

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