*GE ASSIGNMET 5(SEM2).py - C:\Users\Harsh\AppData\Local\Programs\Python\Python311\GE ASSIGNMET 5(SEM2).py (3.11.0)*

File Edit Format Run Options Window Help

```
                                        #GE ASSIGNEMT 5
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
data = {'EMP ID': [1,2,3,4,5,6,7,8,9,10],
 'EMP NAME': ['satish','reeya','jay','rahul','roy','jay','vishal','serah','vishal','Prachi'],
 'Age': [21,23,40,35,26,28,29,21,29,22],
 'Salary':[50000,75000,100000,np.nan,45000,100000,np.nan,55000,np.nan,60000],
 'EMP Credits':[3.8,4,5,4.2,3.9,4.5,5,3.7,5,4.3],
 'Joining date':["01-11-2017",np.nan,"22-09-2015","11-10-2016","08-01-2017","22-1-2018",'22-09-2015', '05-01-2016', '0
df = pd.DataFrame(data)
print(df)
print('-----------------')
df['Joining date'] = pd.to_datetime(df['Joining date'])
# Add new column with month names
df['month_name'] = df['Joining date'].dt.strftime('%d %B %Y')
print(df)

print('before filling\n',df)
print()
df["Salary"].fillna(50000,inplace=True)
df["Joining date"].fillna("01-01-2018",inplace=True)
print('after filling\n',df)
print("..........................................................................")
print('before duplicate\n',df)
print()
print(df.duplicated())
print(df.drop_duplicates())
print("..........................................................................")

max_credit = df['EMP Credits'].max()
max_credit_emp = df.loc[df['EMP Credits'] == max_credit, 'EMP NAME'].values.tolist()
print('\nthe max credit is',max_credit)
print('\nnames of max credit is',max_credit_emp)
```

Ln: 1 Col: 63

*GE ASSIGNMET 5(SEM2).py - C:\Users\Harsh\AppData\Local\Programs\Python\Python311\GE ASSIGNMET 5(SEM2).py (3.11.0)*

File Edit Format Run Options Window Help

```
max_credit = df['EMP Credits'].max()
max_credit_emp = df.loc[df['EMP Credits'] == max_credit, 'EMP NAME'].values.tolist()
print('\nthe max credit is',max_credit)
print('\nnames of max credit is',max_credit_emp)
print("..........................................................................")

df[['EMP Credits', 'Salary']].plot(kind='bar', x='EMP Credits', y='Salary', rot=0)
plt.title('Employee Credits vs Salary')
plt.xlabel('Employee Credits')
plt.ylabel('Salary')
plt.show()
df['EMP Credits'].plot(kind='pie')
plt.title('Employee Credits')
plt.show()
print("..........................................................................")
plt.figure(figsize=(8,4))
plt.subplot(1,2,1) # PLOT 1: Line Plot
df['Age'].plot.line(color='b', marker='X', x='EMP Credits',
 #xlabel = 'EMP Credits',
 #ylabel = 'Age',
 title='EMP Credits vs Age')
plt.show()
plt.subplot(1,2,2) # PLOT 2: Line Plot
df['Salary'].plot.line(color='b', marker='X', x='EMP Credits',
 #xlabel = 'EMP Credits',
#ylabel = 'Salary',
title='EMP Credits vs Salary')
plt.show()
print("..........................................................................")



#2..
import pandas as pd
```

Ln: 1 Col: 63

| | EMP ID | EMP NAME | Age | Salary | EMP Credits | Joining date |
|---|---|---|---|---|---|---|
| 0 | 1 | satish | 21 | 50000.0 | 3.8 | 01-11-2017 |
| 1 | 2 | reeya | 23 | 75000.0 | 4.0 | NaN |
| 2 | 3 | jay | 40 | 100000.0 | 5.0 | 22-09-2015 |
| 3 | 4 | rahul | 35 | NaN | 4.2 | 11-10-2016 |
| 4 | 5 | roy | 26 | 45000.0 | 3.9 | 08-01-2017 |
| 5 | 6 | jay | 28 | 100000.0 | 4.5 | 22-1-2018 |
| 6 | 7 | vishal | 29 | NaN | 5.0 | 22-09-2015 |
| 7 | 8 | serah | 21 | 55000.0 | 3.7 | 05-01-2016 |
| 8 | 9 | vishal | 29 | NaN | 5.0 | 06-02-2018 |
| 9 | 10 | Prachi | 22 | 60000.0 | 4.3 | 05-01-2016 |

---

| | EMP ID | EMP NAME | Age | Salary | EMP Credits | Joining date | month_name |
|---|---|---|---|---|---|---|---|
| 0 | 1 | satish | 21 | 50000.0 | 3.8 | 2017-01-11 | 11 January 2017 |
| 1 | 2 | reeya | 23 | 75000.0 | 4.0 | NaT | NaN |
| 2 | 3 | jay | 40 | 100000.0 | 5.0 | 2015-09-22 | 22 September 2015 |
| 3 | 4 | rahul | 35 | NaN | 4.2 | 2016-11-10 | 10 November 2016 |
| 4 | 5 | roy | 26 | 45000.0 | 3.9 | 2017-08-01 | 01 August 2017 |
| 5 | 6 | jay | 28 | 100000.0 | 4.5 | 2018-01-22 | 22 January 2018 |
| 6 | 7 | vishal | 29 | NaN | 5.0 | 2015-09-22 | 22 September 2015 |
| 7 | 8 | serah | 21 | 55000.0 | 3.7 | 2016-05-01 | 01 May 2016 |
| 8 | 9 | vishal | 29 | NaN | 5.0 | 2018-06-02 | 02 June 2018 |
| 9 | 10 | Prachi | 22 | 60000.0 | 4.3 | 2016-05-01 | 01 May 2016 |

before filling

| | EMP ID | EMP NAME | Age | Salary | EMP Credits | Joining date | month_name |
|---|---|---|---|---|---|---|---|
| 0 | 1 | satish | 21 | 50000.0 | 3.8 | 2017-01-11 | 11 January 2017 |
| 1 | 2 | reeya | 23 | 75000.0 | 4.0 | NaT | NaN |
| 2 | 3 | jay | 40 | 100000.0 | 5.0 | 2015-09-22 | 22 September 2015 |
| 3 | 4 | rahul | 35 | NaN | 4.2 | 2016-11-10 | 10 November 2016 |
| 4 | 5 | roy | 26 | 45000.0 | 3.9 | 2017-08-01 | 01 August 2017 |
| 5 | 6 | jay | 28 | 100000.0 | 4.5 | 2018-01-22 | 22 January 2018 |
| 6 | 7 | vishal | 29 | NaN | 5.0 | 2015-09-22 | 22 September 2015 |
| 7 | 8 | serah | 21 | 55000.0 | 3.7 | 2016-05-01 | 01 May 2016 |
| 8 | 9 | vishal | 29 | NaN | 5.0 | 2018-06-02 | 02 June 2018 |
| 9 | 10 | Prachi | 22 | 60000.0 | 4.3 | 2016-05-01 | 01 May 2016 |

after filling

before duplicate

| | EMP ID | EMP NAME | Age | Salary | EMP Credits | Joining date | month_name |
|---|---|---|---|---|---|---|---|
| 0 | 1 | satish | 21 | 50000.0 | 3.8 | 2017-01-11 | 11 January 2017 |
| 1 | 2 | reeya | 23 | 75000.0 | 4.0 | 2018-01-01 | NaN |
| 2 | 3 | jay | 40 | 100000.0 | 5.0 | 2015-09-22 | 22 September 2015 |
| 3 | 4 | rahul | 35 | 50000.0 | 4.2 | 2016-11-10 | 10 November 2016 |
| 4 | 5 | roy | 26 | 45000.0 | 3.9 | 2017-08-01 | 01 August 2017 |
| 5 | 6 | jay | 28 | 100000.0 | 4.5 | 2018-01-22 | 22 January 2018 |
| 6 | 7 | vishal | 29 | 50000.0 | 5.0 | 2015-09-22 | 22 September 2015 |
| 7 | 8 | serah | 21 | 55000.0 | 3.7 | 2016-05-01 | 01 May 2016 |
| 8 | 9 | vishal | 29 | 50000.0 | 5.0 | 2018-06-02 | 02 June 2018 |
| 9 | 10 | Prachi | 22 | 60000.0 | 4.3 | 2016-05-01 | 01 May 2016 |

```
0    False
1    False
2    False
3    False
4    False
5    False
6    False
7    False
8    False
9    False
```

```
dtype: bool
   EMP ID EMP NAME  Age    Salary  EMP Credits Joining date         month_name
0       1   satish   21   50000.0          3.8   2017-01-11    11 January 2017
1       2    reeya   23   75000.0          4.0   2018-01-01                NaN
2       3      jay   40  100000.0          5.0   2015-09-22  22 September 2015
3       4    rahul   35   50000.0          4.2   2016-11-10   10 November 2016
4       5      roy   26   45000.0          3.9   2017-08-01     01 August 2017
5       6      jay   28  100000.0          4.5   2018-01-22    22 January 2018
6       7   vishal   29   50000.0          5.0   2015-09-22  22 September 2015
7       8    serah   21   55000.0          3.7   2016-05-01        01 May 2016
8       9   vishal   29   50000.0          5.0   2018-06-02       02 June 2018
9      10   Prachi   22   60000.0          4.3   2016-05-01        01 May 2016
.....................................................................
.....

the max credit is 5.0

names of max credit is ['jay', 'vishal', 'vishal']
```

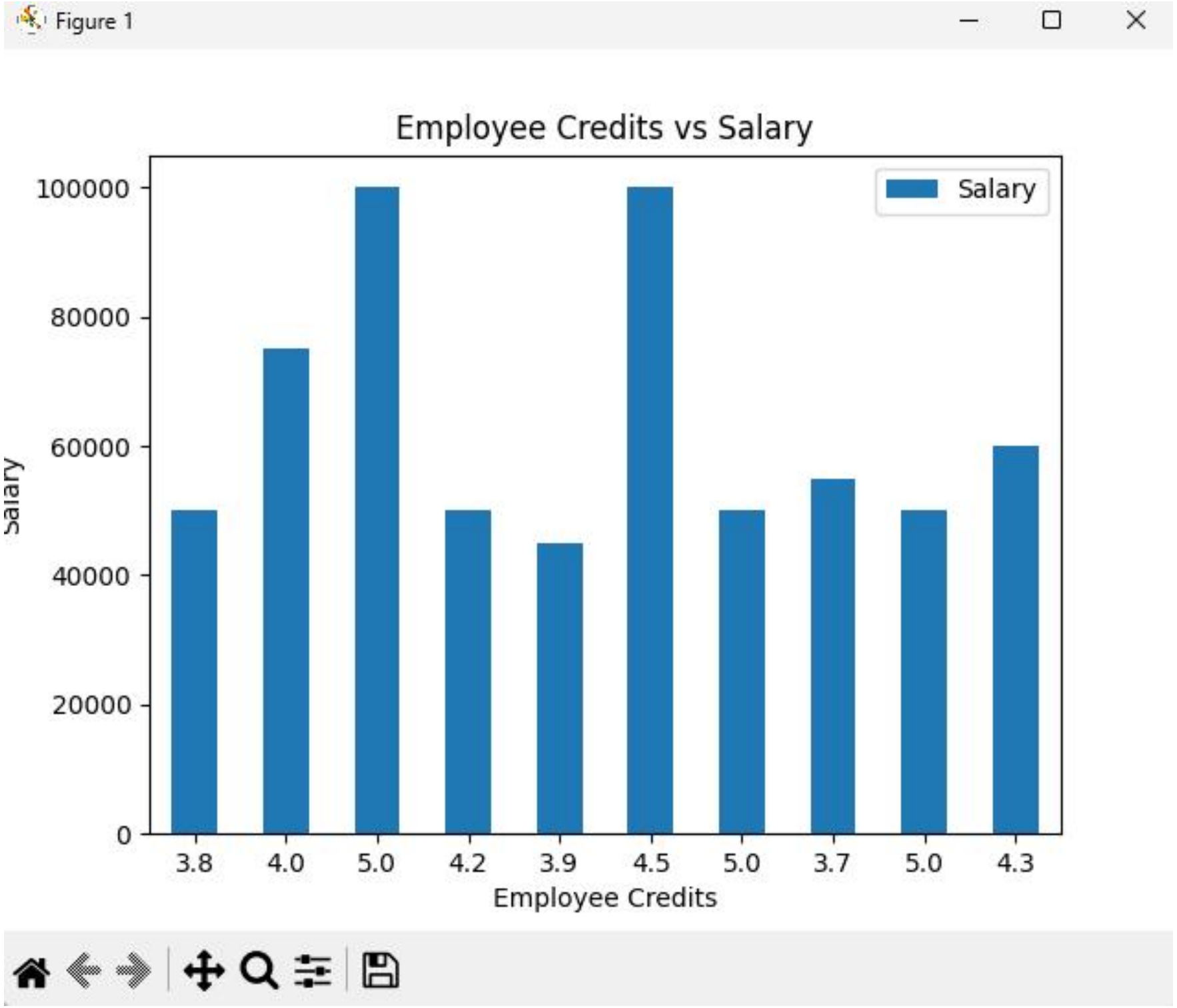
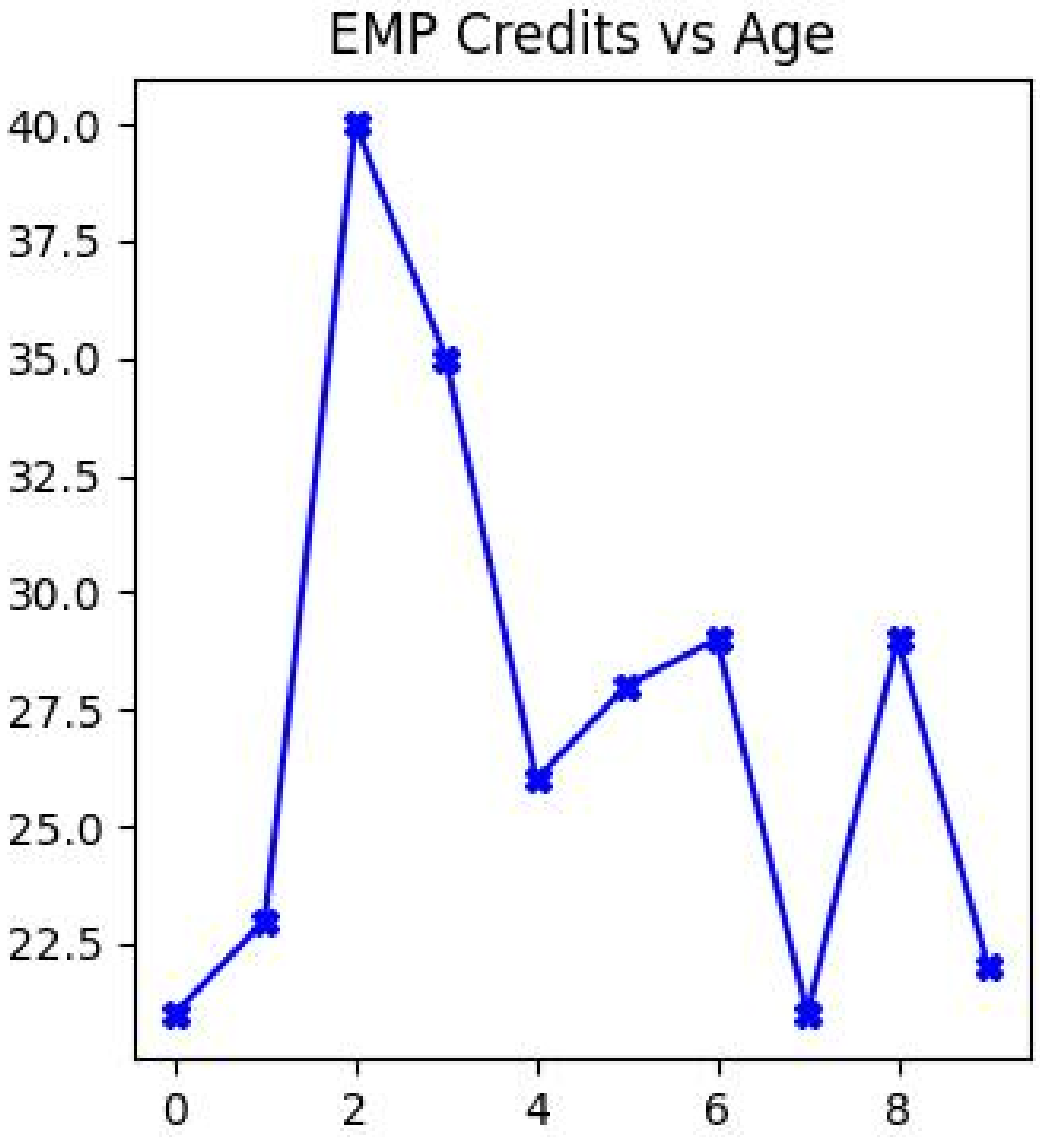
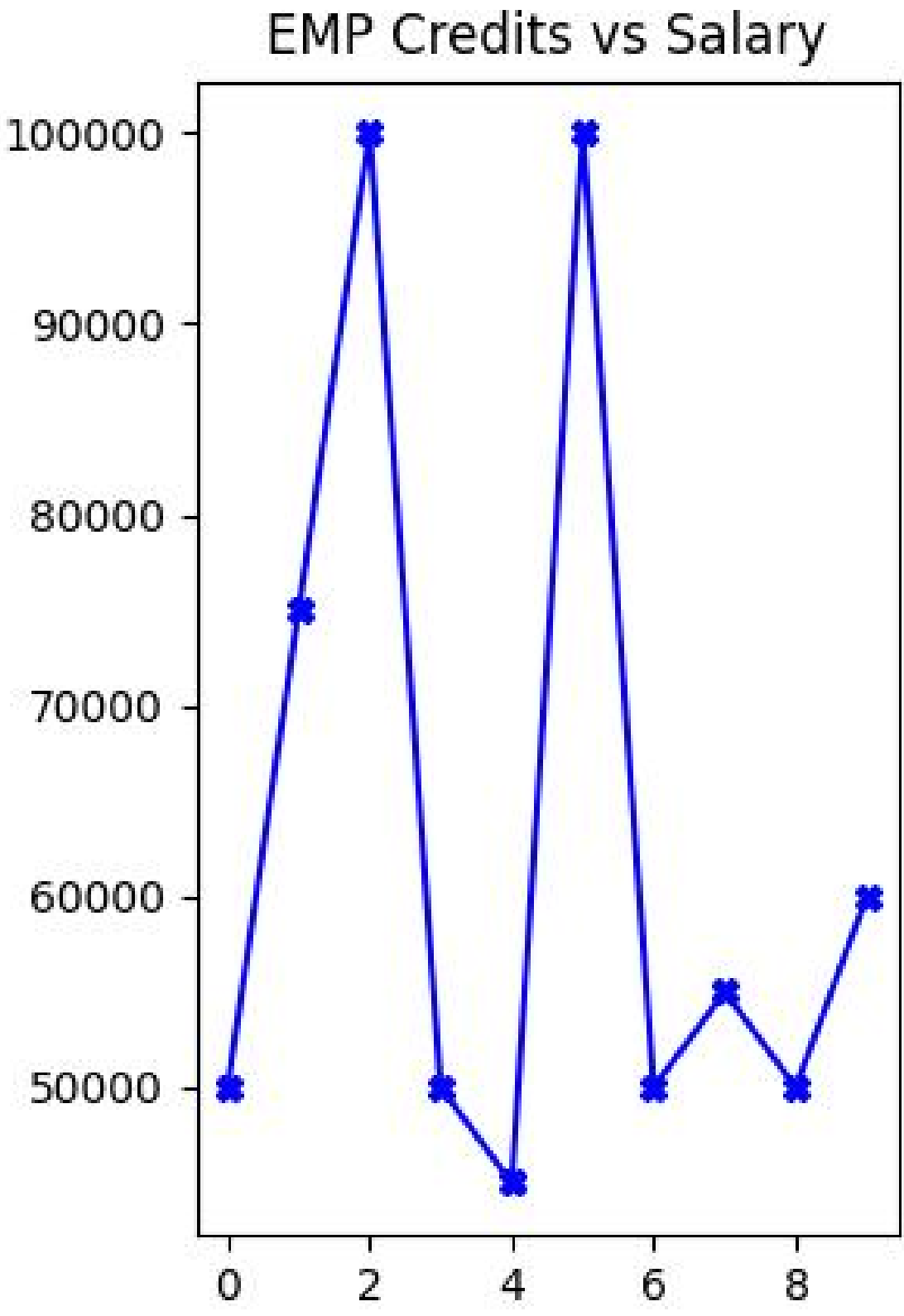


Figure 1
Employee Credits vs Salary
Salary
100000
80000
60000
40000
20000
0
3.8
4.0
5.0
4.2
3.9
4.5
5.0
3.7
5.0
4.3
Employee Credits


Figure 1
Employee Credits
EMP Credits
0
1
2
3
4
5
6
7
8
9

Figure 1




EMP Credits vs Salary
100000
90000
80000
70000
60000
50000
0
2
4
6
8

*GE ASSIGNMET 5(SEM2).py - C:\Users\Harsh\AppData\Local\Programs\Python\Python311\GE ASSIGNMET 5(SEM2).py (3.11.0)*

File Edit Format Run Options Window Help

```
#2..
import pandas as pd
#Loading the Datase
CALORIES_DATA = pd.read_csv(r"C:\Users\Harsh\Downloads\CaloriesDataSet.csv")
print(CALORIES_DATA)
print(".....................................................................................")

print('before filling\n',CALORIES_DATA)
print()
CALORIES_DATA["Calories"].fillna(300,inplace=True)
CALORIES_DATA["Date"].fillna("'2018/12/12'",inplace=True)
print('after filling\n',CALORIES_DATA)
print(".....................................................................................")

print('before duplicate\n',CALORIES_DATA)
print()
print(CALORIES_DATA.duplicated())
print(CALORIES_DATA.drop_duplicates())
print(".....................................................................................")


# calculate the average values for Duration, Pulse, Maxpulse, and Calories
avg_duration = CALORIES_DATA['Duration'].mean()
avg_pulse = CALORIES_DATA['Pulse'].mean()
avg_maxpulse = CALORIES_DATA['Maxpulse'].mean()
avg_calories = CALORIES_DATA['Calories'].mean()

# create a new row with the average values
avg_row = {'Duration': avg_duration, 'Pulse': avg_pulse, 'Maxpulse': avg_maxpulse, 'Calories': avg_calories}

# append the new row to the dataframe
CALORIES_DATA = CALORIES_DATA.append(avg_row, ignore_index=True)
```

Ln: 1 Col: 63

*GE ASSIGNMET 5(SEM2).py - C:\Users\Harsh\AppData\Local\Programs\Python\Python311\GE ASSIGNMET 5(SEM2).py (3.11.0)*

File Edit Format Run Options Window Help

```
avg_pulse = CALORIES_DATA['Pulse'].mean()
avg_maxpulse = CALORIES_DATA['Maxpulse'].mean()
avg_calories = CALORIES_DATA['Calories'].mean()

# create a new row with the average values
avg_row = {'Duration': avg_duration, 'Pulse': avg_pulse, 'Maxpulse': avg_maxpulse, 'Calories': avg_calories}

# append the new row to the dataframe
CALORIES_DATA = CALORIES_DATA.append(avg_row, ignore_index=True)

# write the updated dataframe to a new csv file
CALORIES_DATA.to_csv('updated_data.csv', index=False)
print(CALORIES_DATA)


print(".....................................................................................")
CALORIES_DATA.plot(marker='X', ms=15,mec='r',mfc='r',color='r',linestyle='--',label='Makers',figsize=(5,5))
plt.xlabel('CALORIES')
plt.ylabel('Salary')
plt.legend(loc='lower center')
plt.show()

CALORIES_DATA.plot.area(color='b',label='CALORIES',figsize=(5,5))
plt.xlabel('CALORIES')
plt.ylabel('Date')
plt.legend(loc='lower center')
plt.show()

CALORIES_DATA.plot.bar(color='c',label='CALORIES',figsize=(3,3))
plt.xlabel('CALORIES')
plt.ylabel('Date')
plt.legend(loc='lower center')
plt.show()
```

Ln: 1 Col: 63

*GE ASSIGNMET 5(SEM2).py - C:\Users\Harsh\AppData\Local\Programs\Python\Python311\GE ASSIGNMET 5(SEM2).py (3.11.0)*

File Edit Format Run Options Window Help

```
print("..........................................................................")
CALORIES_DATA.plot(marker='X', ms=15,mec='r',mfc='r',color='r',linestyle='--',label='Makers',figsize=(5,5))
plt.xlabel('CALORIES')
plt.ylabel('Salary')
plt.legend(loc='lower center')
plt.show()

CALORIES_DATA.plot.area(color='b',label='CALORIES',figsize=(5,5))
plt.xlabel('CALORIES')
plt.ylabel('Date')
plt.legend(loc='lower center')
plt.show()

CALORIES_DATA.plot.bar(color='c',label='CALORIES',figsize=(3,3))
plt.xlabel('CALORIES')
plt.ylabel('Date')
plt.legend(loc='lower center')
plt.show()

CALORIES_DATA.plot.barh(color='c',label='CALORIES',figsize=(3,3))
plt.xlabel('CALORIES')
plt.ylabel('Date')
plt.legend(loc='lower center')
plt.show()

CALORIES_DATA.plot.box(color='m',label='CALORIES',figsize=(3,3))
plt.ylabel('Date')
plt.show()

CALORIES_DATA.plot.hist(bins=6,figsize=(3,3))
plt.ylabel('Date')
plt.show()

CALORIES_DATA.plot.pie(label='CALORIES',autopct='%1.1f%%')
```

Ln: 1 Col: 63

*GE ASSIGNMET 5(SEM2).py - C:\Users\Harsh\AppData\Local\Programs\Python\Python311\GE ASSIGNMET 5(SEM2).py (3.11.0)*

File Edit Format Run Options Window Help

```
plt.ylabel('Salary')
plt.legend(loc='lower center')
plt.show()

CALORIES_DATA.plot.area(color='b',label='CALORIES',figsize=(5,5))
plt.xlabel('CALORIES')
plt.ylabel('Date')
plt.legend(loc='lower center')
plt.show()

CALORIES_DATA.plot.bar(color='c',label='CALORIES',figsize=(3,3))
plt.xlabel('CALORIES')
plt.ylabel('Date')
plt.legend(loc='lower center')
plt.show()

CALORIES_DATA.plot.barh(color='c',label='CALORIES',figsize=(3,3))
plt.xlabel('CALORIES')
plt.ylabel('Date')
plt.legend(loc='lower center')
plt.show()

CALORIES_DATA.plot.box(color='m',label='CALORIES',figsize=(3,3))
plt.ylabel('Date')
plt.show()

CALORIES_DATA.plot.hist(bins=6,figsize=(3,3))
plt.ylabel('Date')
plt.show()

CALORIES_DATA.plot.pie(label='CALORIES',autopct='%1.1f%%')
plt.ylabel('Date')
plt.show()
```

Ln: 1 Col: 63

*IDLE Shell 3.11.0*

File Edit Shell Debug Options Window Help

| | Duration | Date | Pulse | Maxpulse | Calories |
|---|---|---|---|---|---|
| 0 | 60 | '2020/12/01' | 110 | 130 | 409.1 |
| 1 | 60 | '2020/12/02' | 117 | 145 | 479.0 |
| 2 | 60 | '2020/12/03' | 103 | 135 | 340.0 |
| 3 | 45 | '2020/12/04' | 109 | 175 | 282.4 |
| 4 | 45 | '2020/12/05' | 117 | 148 | 406.0 |
| 5 | 60 | '2020/12/06' | 102 | 127 | 300.0 |
| 6 | 60 | '2020/12/07' | 110 | 136 | 374.0 |
| 7 | 450 | '2020/12/08' | 104 | 134 | 253.3 |
| 8 | 30 | '2020/12/09' | 109 | 133 | 195.1 |
| 9 | 60 | '2020/12/10' | 98 | 124 | 269.0 |
| 10 | 60 | '2020/12/11' | 103 | 147 | 329.3 |
| 11 | 60 | '2020/12/12' | 100 | 120 | 250.7 |
| 13 | 60 | '2020/12/13' | 106 | 128 | 345.3 |
| 14 | 60 | '2020/12/14' | 104 | 132 | 379.3 |
| 15 | 60 | '2020/12/15' | 98 | 123 | 275.0 |
| 16 | 60 | '2020/12/16' | 98 | 120 | 215.2 |
| 17 | 60 | '2020/12/17' | 100 | 120 | 300.0 |
| 18 | 45 | '2020/12/18' | 90 | 112 | 300.0 |
| 19 | 60 | '2020/12/19' | 103 | 123 | 323.0 |
| 20 | 45 | '2020/12/20' | 97 | 125 | 243.0 |
| 21 | 60 | '2020/12/21' | 108 | 131 | 364.2 |
| 22 | 45 | '2018/12/12' | 100 | 119 | 282.0 |
| 23 | 60 | '2020/12/23' | 130 | 101 | 300.0 |
| 24 | 45 | '2020/12/24' | 105 | 132 | 246.0 |
| 25 | 60 | '2020/12/25' | 102 | 126 | 334.5 |
| 26 | 60 | 20201226 | 100 | 120 | 250.0 |
| 27 | 60 | '2020/12/27' | 92 | 118 | 241.0 |
| 28 | 60 | '2020/12/28' | 103 | 132 | 300.0 |
| 29 | 60 | '2020/12/29' | 100 | 132 | 280.0 |
| 30 | 60 | '2020/12/30' | 102 | 129 | 380.3 |
| 31 | 60 | '2020/12/31' | 92 | 115 | 243.0 |

.....

Ln: 287 Col: 0

*IDLE Shell 3.11.0*

File Edit Shell Debug Options Window Help

| | Duration | Date | Pulse | Maxpulse | Calories |
|---|---|---|---|---|---|
| 0 | 60 | '2020/12/01' | 110 | 130 | 409.1 |
| 1 | 60 | '2020/12/02' | 117 | 145 | 479.0 |
| 2 | 60 | '2020/12/03' | 103 | 135 | 340.0 |
| 3 | 45 | '2020/12/04' | 109 | 175 | 282.4 |
| 4 | 45 | '2020/12/05' | 117 | 148 | 406.0 |
| 5 | 60 | '2020/12/06' | 102 | 127 | 300.0 |
| 6 | 60 | '2020/12/07' | 110 | 136 | 374.0 |
| 7 | 450 | '2020/12/08' | 104 | 134 | 253.3 |
| 8 | 30 | '2020/12/09' | 109 | 133 | 195.1 |
| 9 | 60 | '2020/12/10' | 98 | 124 | 269.0 |
| 10 | 60 | '2020/12/11' | 103 | 147 | 329.3 |
| 11 | 60 | '2020/12/12' | 100 | 120 | 250.7 |
| 13 | 60 | '2020/12/13' | 106 | 128 | 345.3 |
| 14 | 60 | '2020/12/14' | 104 | 132 | 379.3 |
| 15 | 60 | '2020/12/15' | 98 | 123 | 275.0 |
| 16 | 60 | '2020/12/16' | 98 | 120 | 215.2 |
| 17 | 60 | '2020/12/17' | 100 | 120 | 300.0 |
| 18 | 45 | '2020/12/18' | 90 | 112 | 300.0 |
| 19 | 60 | '2020/12/19' | 103 | 123 | 323.0 |
| 20 | 45 | '2020/12/20' | 97 | 125 | 243.0 |
| 21 | 60 | '2020/12/21' | 108 | 131 | 364.2 |
| 22 | 45 | '2018/12/12' | 100 | 119 | 282.0 |
| 23 | 60 | '2020/12/23' | 130 | 101 | 300.0 |
| 24 | 45 | '2020/12/24' | 105 | 132 | 246.0 |
| 25 | 60 | '2020/12/25' | 102 | 126 | 334.5 |
| 26 | 60 | 20201226 | 100 | 120 | 250.0 |
| 27 | 60 | '2020/12/27' | 92 | 118 | 241.0 |
| 28 | 60 | '2020/12/28' | 103 | 132 | 300.0 |
| 29 | 60 | '2020/12/29' | 100 | 132 | 280.0 |
| 30 | 60 | '2020/12/30' | 102 | 129 | 380.3 |
| 31 | 60 | '2020/12/31' | 92 | 115 | 243.0 |

.....

Ln: 287 Col: 0

*IDLE Shell 3.11.0*

File Edit Shell Debug Options Window Help

```
31          60  '2020/12/31'     92       115     243.0
..........................................................................
before filling
     Duration          Date  Pulse  Maxpulse  Calories
0          60  '2020/12/01'    110       130     409.1
1          60  '2020/12/02'    117       145     479.0
2          60  '2020/12/03'    103       135     340.0
3          45  '2020/12/04'    109       175     282.4
4          45  '2020/12/05'    117       148     406.0
5          60  '2020/12/06'    102       127     300.0
6          60  '2020/12/07'    110       136     374.0
7         450  '2020/12/08'    104       134     253.3
8          30  '2020/12/09'    109       133     195.1
9          60  '2020/12/10'     98       124     269.0
10         60  '2020/12/11'    103       147     329.3
11         60  '2020/12/12'    100       120     250.7
12         60  '2020/12/12'    100       120     250.7
13         60  '2020/12/13'    106       128     345.3
14         60  '2020/12/14'    104       132     379.3
15         60  '2020/12/15'     98       123     275.0
16         60  '2020/12/16'     98       120     215.2
17         60  '2020/12/17'    100       120     300.0
18         45  '2020/12/18'     90       112       NaN
19         60  '2020/12/19'    103       123     323.0
20         45  '2020/12/20'     97       125     243.0
21         60  '2020/12/21'    108       131     364.2
22         45           NaN    100       119     282.0
23         60  '2020/12/23'    130       101     300.0
24         45  '2020/12/24'    105       132     246.0
25         60  '2020/12/25'    102       126     334.5
26         60      20201226    100       120     250.0
27         60  '2020/12/27'     92       118     241.0
28         60  '2020/12/28'    103       132       NaN
29         60  '2020/12/29'    100       132     280.0
```

Ln: 347 Col: 0

*IDLE Shell 3.11.0*

File Edit Shell Debug Options Window Help

```
31          60  '2020/12/31'     92       115     243.0

after filling
     Duration          Date  Pulse  Maxpulse  Calories
0          60  '2020/12/01'    110       130     409.1
1          60  '2020/12/02'    117       145     479.0
2          60  '2020/12/03'    103       135     340.0
3          45  '2020/12/04'    109       175     282.4
4          45  '2020/12/05'    117       148     406.0
5          60  '2020/12/06'    102       127     300.0
6          60  '2020/12/07'    110       136     374.0
7         450  '2020/12/08'    104       134     253.3
8          30  '2020/12/09'    109       133     195.1
9          60  '2020/12/10'     98       124     269.0
10         60  '2020/12/11'    103       147     329.3
11         60  '2020/12/12'    100       120     250.7
12         60  '2020/12/12'    100       120     250.7
13         60  '2020/12/13'    106       128     345.3
14         60  '2020/12/14'    104       132     379.3
15         60  '2020/12/15'     98       123     275.0
16         60  '2020/12/16'     98       120     215.2
17         60  '2020/12/17'    100       120     300.0
18         45  '2020/12/18'     90       112     300.0
19         60  '2020/12/19'    103       123     323.0
20         45  '2020/12/20'     97       125     243.0
21         60  '2020/12/21'    108       131     364.2
22         45  '2018/12/12'    100       119     282.0
23         60  '2020/12/23'    130       101     300.0
24         45  '2020/12/24'    105       132     246.0
25         60  '2020/12/25'    102       126     334.5
26         60      20201226    100       120     250.0
27         60  '2020/12/27'     92       118     241.0
28         60  '2020/12/28'    103       132     300.0
29         60  '2020/12/29'    100       132     280.0
```

Ln: 347 Col: 0

*IDLE Shell 3.11.0*

File Edit Shell Debug Options Window Help

```
31          60  '2020/12/31'     92       115     243.0
..........................................................................
before duplicate
     Duration          Date  Pulse  Maxpulse  Calories
0          60  '2020/12/01'    110       130     409.1
1          60  '2020/12/02'    117       145     479.0
2          60  '2020/12/03'    103       135     340.0
3          45  '2020/12/04'    109       175     282.4
4          45  '2020/12/05'    117       148     406.0
5          60  '2020/12/06'    102       127     300.0
6          60  '2020/12/07'    110       136     374.0
7         450  '2020/12/08'    104       134     253.3
8          30  '2020/12/09'    109       133     195.1
9          60  '2020/12/10'     98       124     269.0
10         60  '2020/12/11'    103       147     329.3
11         60  '2020/12/12'    100       120     250.7
12         60  '2020/12/12'    100       120     250.7
13         60  '2020/12/13'    106       128     345.3
14         60  '2020/12/14'    104       132     379.3
15         60  '2020/12/15'     98       123     275.0
16         60  '2020/12/16'     98       120     215.2
17         60  '2020/12/17'    100       120     300.0
18         45  '2020/12/18'     90       112     300.0
19         60  '2020/12/19'    103       123     323.0
20         45  '2020/12/20'     97       125     243.0
21         60  '2020/12/21'    108       131     364.2
22         45  '2018/12/12'    100       119     282.0
23         60  '2020/12/23'    130       101     300.0
24         45  '2020/12/24'    105       132     246.0
25         60  '2020/12/25'    102       126     334.5
26         60      20201226    100       120     250.0
27         60  '2020/12/27'     92       118     241.0
28         60  '2020/12/28'    103       132     300.0
29         60  '2020/12/29'    100       132     280.0
```

Ln: 347 Col: 0

*IDLE Shell 3.11.0*

File Edit Shell Debug Options Window Help

```
31          60  '2020/12/31'     92        115     243.0

0      False
1      False
2      False
3      False
4      False
5      False
6      False
7      False
8      False
9      False
10     False
11     False
12      True
13     False
14     False
15     False
16     False
17     False
18     False
19     False
20     False
21     False
22     False
23     False
24     False
25     False
26     False
27     False
28     False
29     False
30     False
31     False
```

Ln: 347 Col: 0

| | Duration | Date | Pulse | Maxpulse | Calories |
|---|---|---|---|---|---|
| 0 | 60 | '2020/12/01' | 110 | 130 | 409.1 |
| 1 | 60 | '2020/12/02' | 117 | 145 | 479.0 |
| 2 | 60 | '2020/12/03' | 103 | 135 | 340.0 |
| 3 | 45 | '2020/12/04' | 109 | 175 | 282.4 |
| 4 | 45 | '2020/12/05' | 117 | 148 | 406.0 |
| 5 | 60 | '2020/12/06' | 102 | 127 | 300.0 |
| 6 | 60 | '2020/12/07' | 110 | 136 | 374.0 |
| 7 | 450 | '2020/12/08' | 104 | 134 | 253.3 |
| 8 | 30 | '2020/12/09' | 109 | 133 | 195.1 |
| 9 | 60 | '2020/12/10' | 98 | 124 | 269.0 |
| 10 | 60 | '2020/12/11' | 103 | 147 | 329.3 |
| 11 | 60 | '2020/12/12' | 100 | 120 | 250.7 |
| 12 | 60 | '2020/12/12' | 100 | 120 | 250.7 |
| 13 | 60 | '2020/12/13' | 106 | 128 | 345.3 |
| 14 | 60 | '2020/12/14' | 104 | 132 | 379.3 |
| 15 | 60 | '2020/12/15' | 98 | 123 | 275.0 |
| 16 | 60 | '2020/12/16' | 98 | 120 | 215.2 |
| 17 | 60 | '2020/12/17' | 100 | 120 | 300.0 |
| 18 | 45 | '2020/12/18' | 90 | 112 | NaN |
| 19 | 60 | '2020/12/19' | 103 | 123 | 323.0 |
| 20 | 45 | '2020/12/20' | 97 | 125 | 243.0 |
| 21 | 60 | '2020/12/21' | 108 | 131 | 364.2 |
| 22 | 45 | NaN | 100 | 119 | 282.0 |
| 23 | 60 | '2020/12/23' | 130 | 101 | 300.0 |
| 24 | 45 | '2020/12/24' | 105 | 132 | 246.0 |
| 25 | 60 | '2020/12/25' | 102 | 126 | 334.5 |

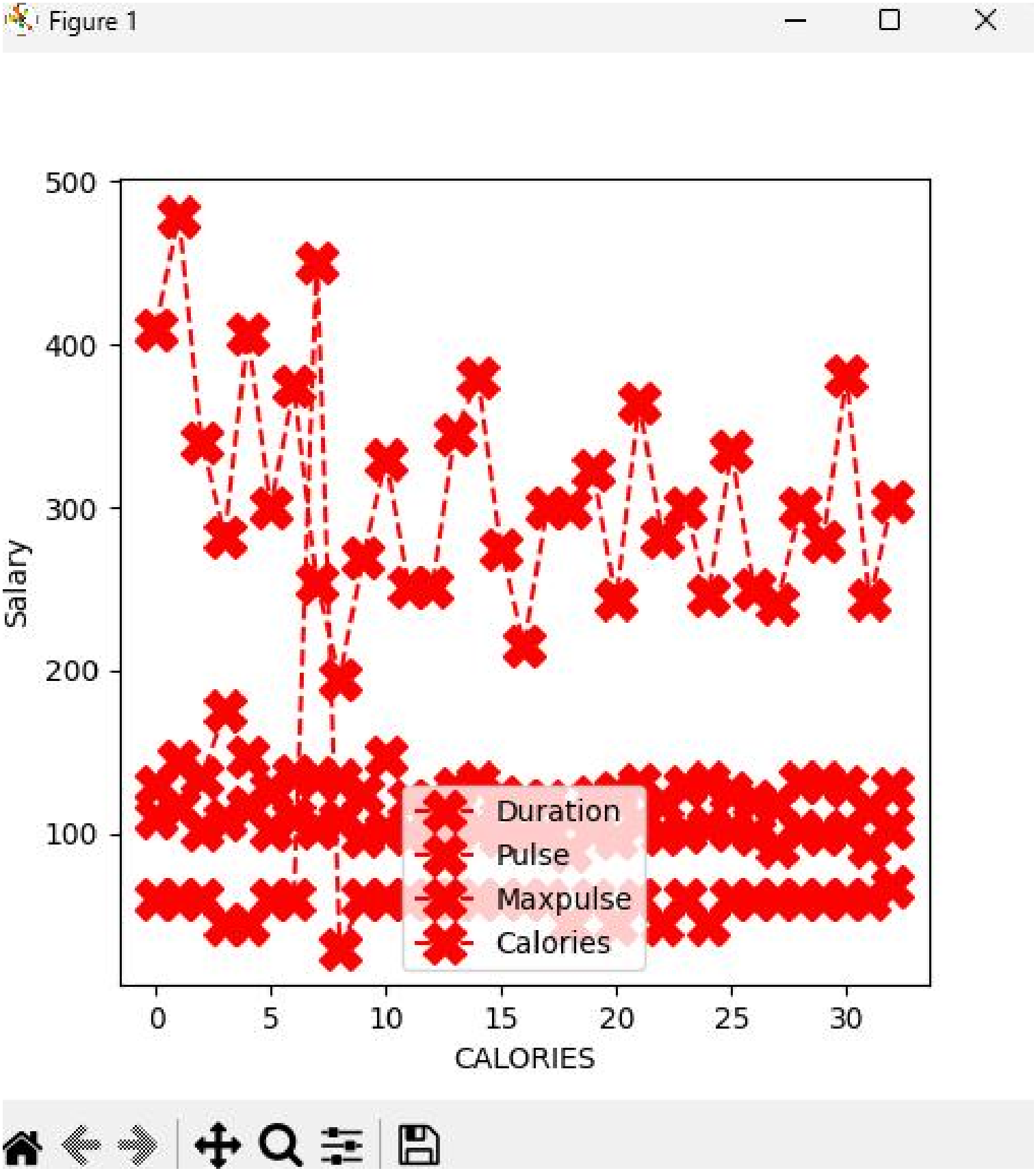


Figure 1
500
400
300
200
100
Salary
0
5
10
15
20
25
30
CALORIES
Duration
Pulse
Maxpulse
Calories

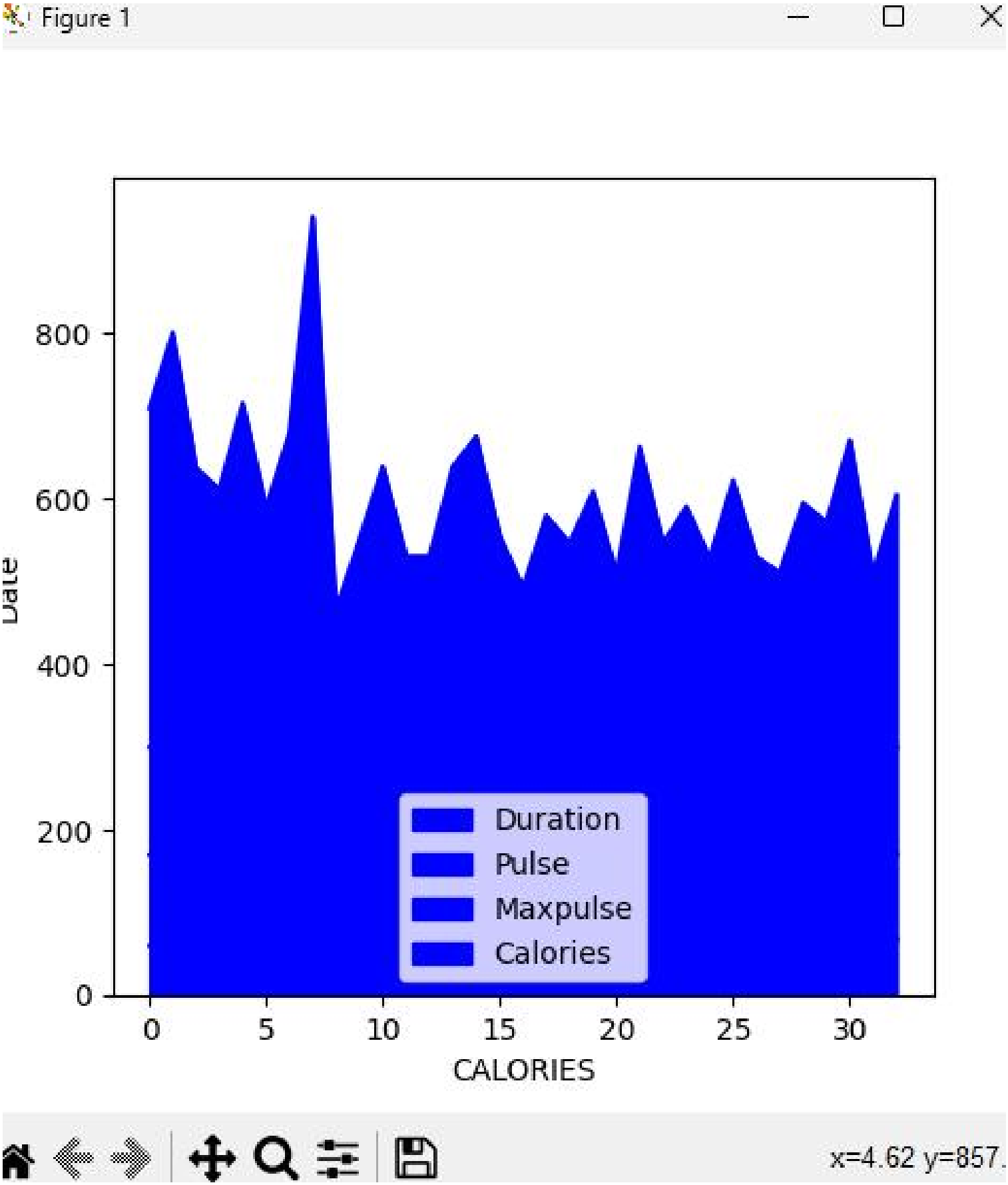


Figure 1
800
600
400
200
0
0
5
10
15
20
25
30
CALORIES
Duration
Pulse
Maxpulse
Calories
x=4.62 y=857.

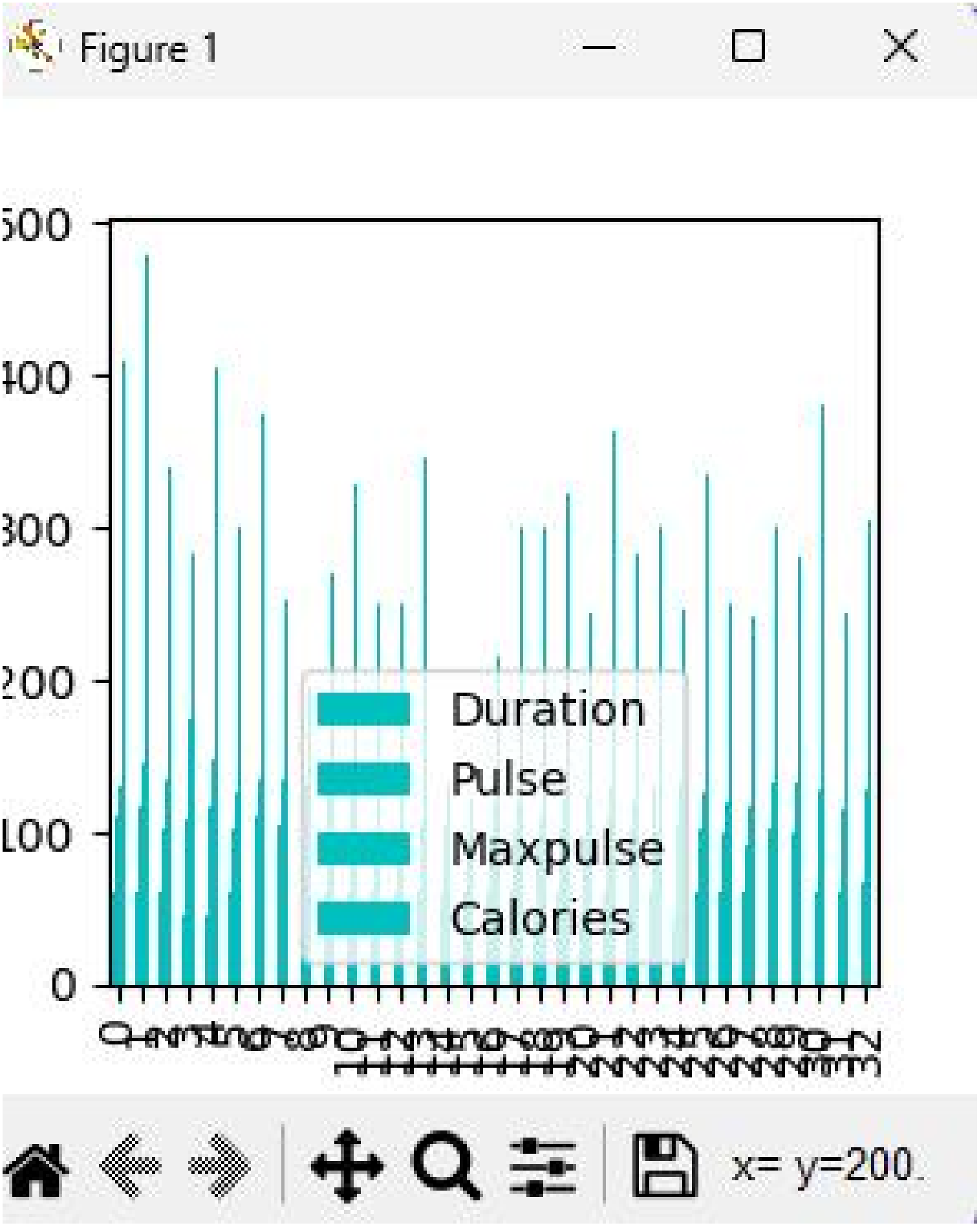


Figure 1
500
400
300
200
100
0
Duration
Pulse
Maxpulse
Calories
x= y=200.

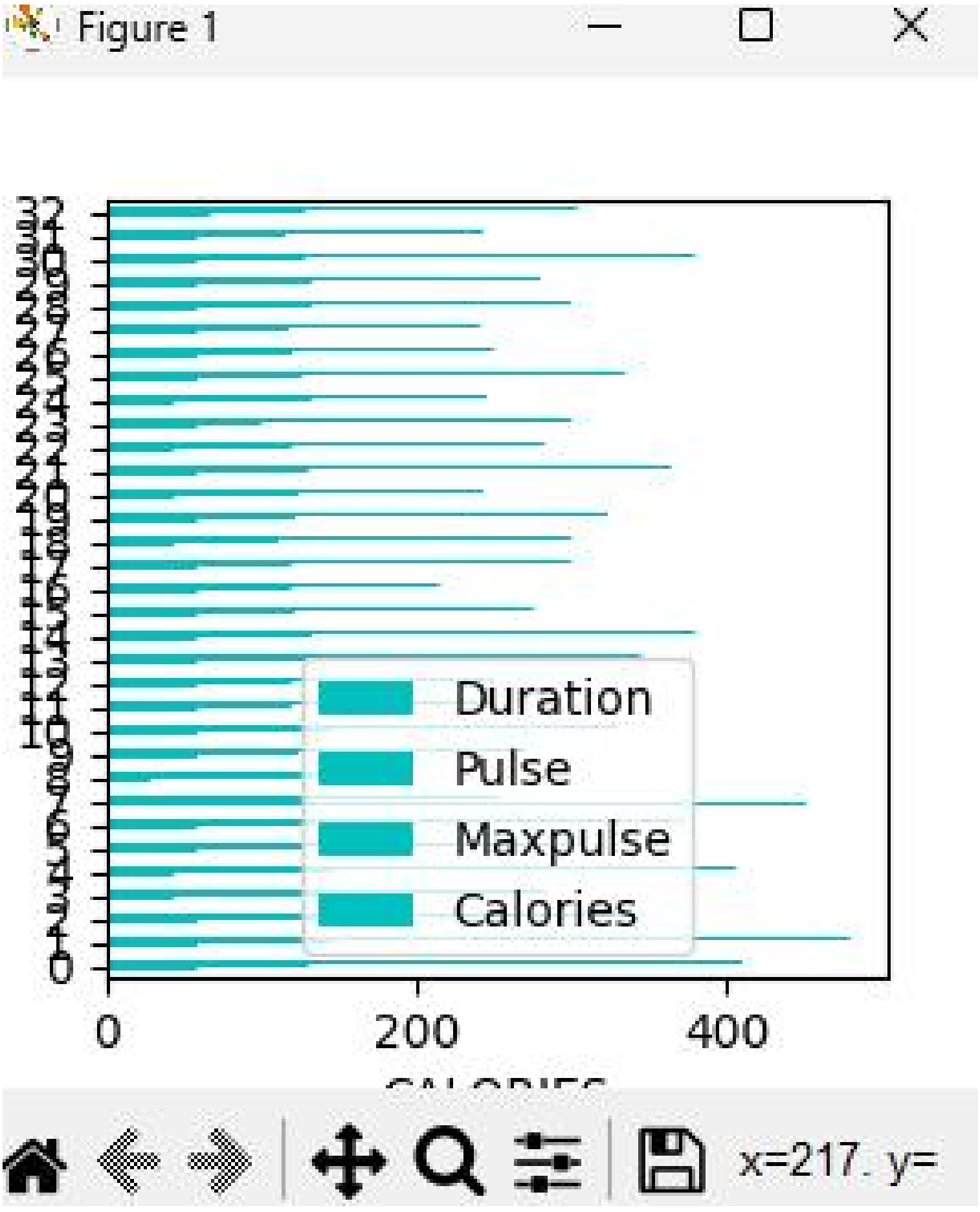


Figure 1
Duration
Pulse
Maxpulse
Calories
0
200
400
x=217. y=

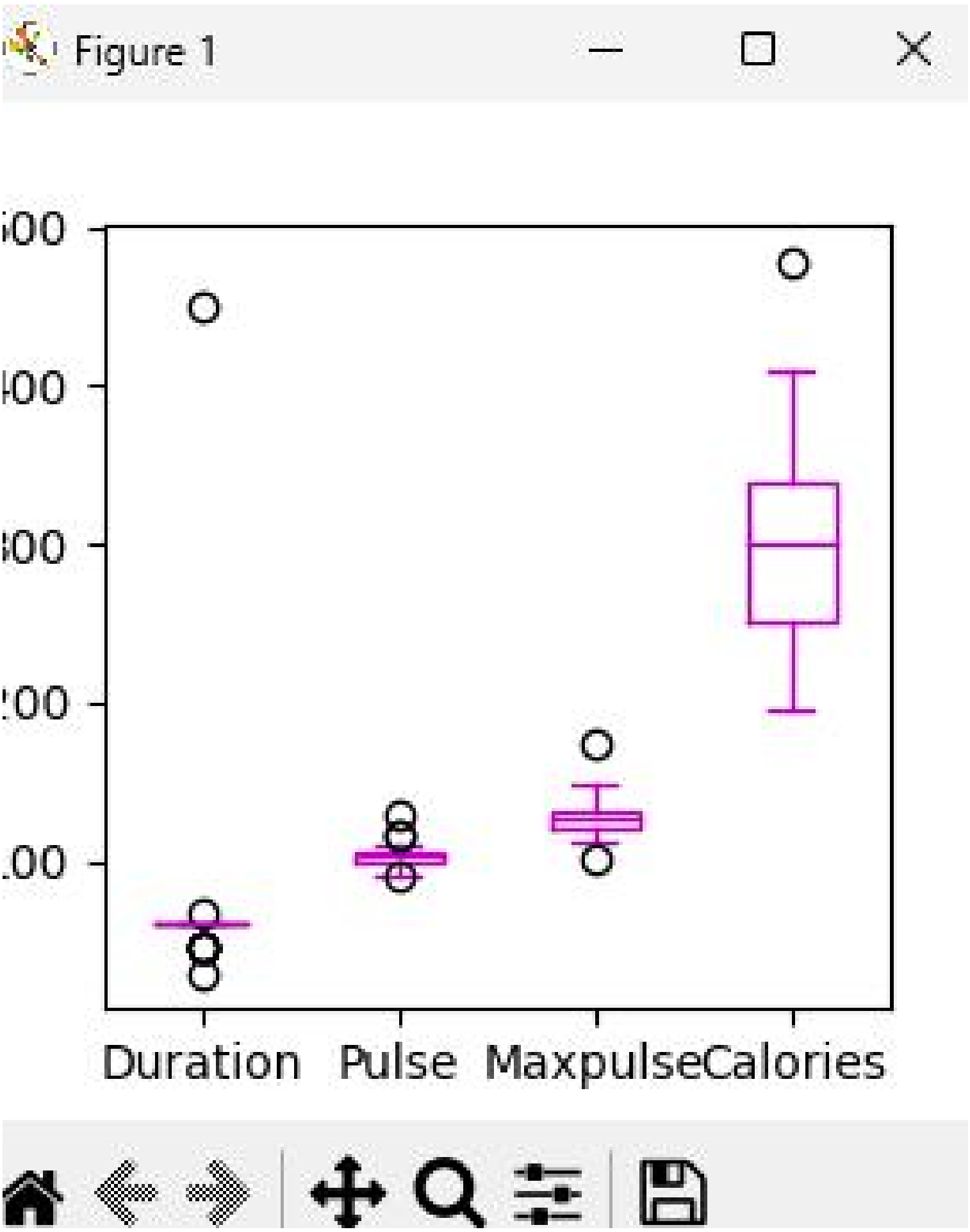


Figure 1
Duration
Pulse
Maxpulse
Calories

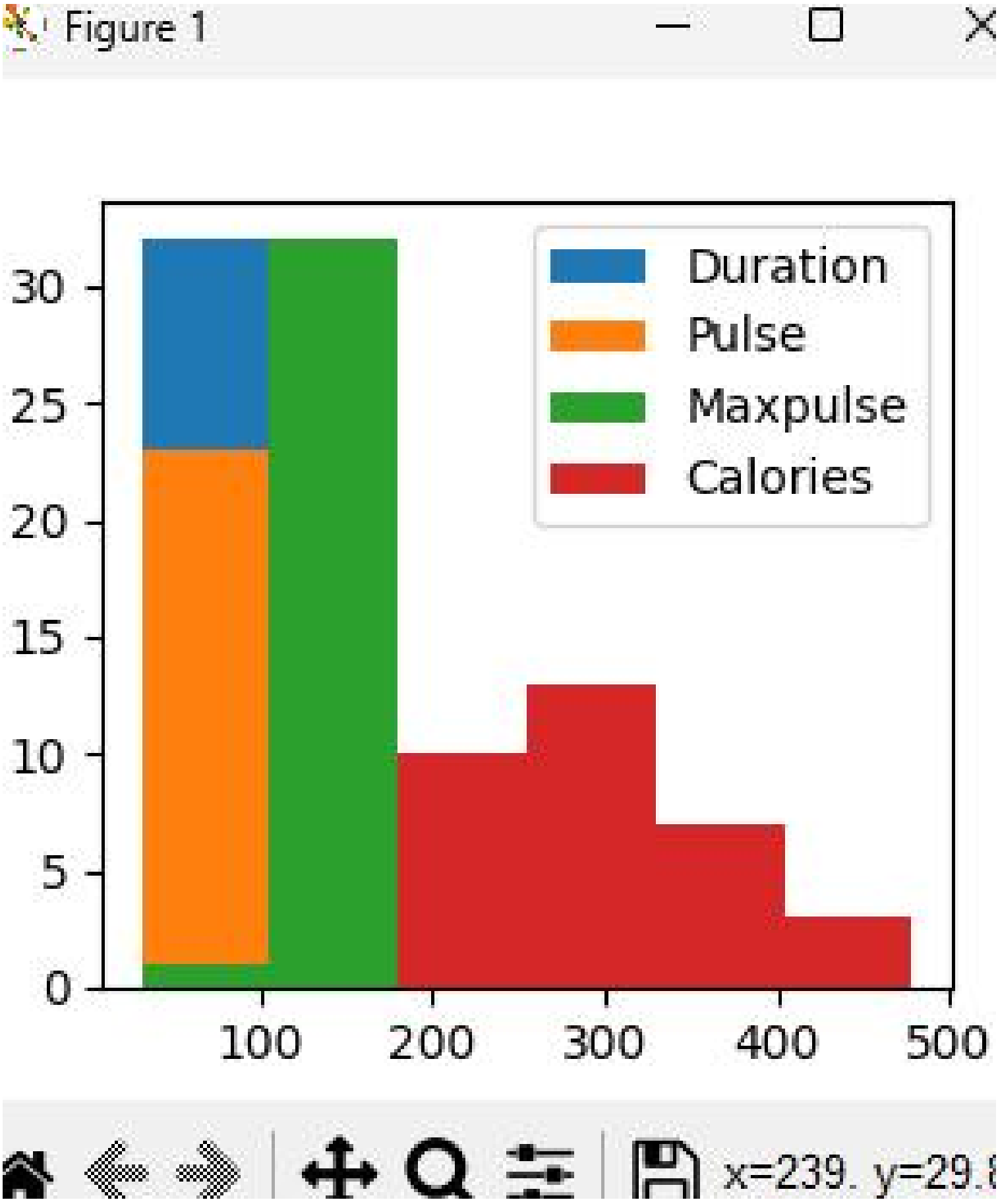


Figure 1
Duration
Pulse
Maxpulse
Calories
30
25
20
15
10
5
0
100
200
300
400
500
x=239. y=29.