Raul Rodriguez

```python
'''Exercise 1
Using an infinite loop, enter your homework grades (enter at least 10 grades) of float data type
and append them into a grades list. Break the loop when the user enters a grade smaller than 0.
Create a NumPy array out of the grades list; create a Panda Series out of the NumPy array and
rename the indices to begin from 1 instead of 0 (since you know the length of the list you can
create a new list using list comprehension that begins from 1). Using a built-in method, print
the descriptive statistics of the grades entered (e.g., mean, std, max, min, 25% percentile, etc.).
Create three plots within a single graph, namely a plot, a scatter, and a bar superimposed one
over the other; the x-axis is the indices beginning with 1 and the y-axis is the grades entered (see
first Figure in the next page)
Note: Do not hard code the name of indices beginning with 1 as you do not know in advance
how many grades the user will enter, that is why you are advised to use a list comprehension'''
import numpy as np
import pandas as pd
from matplotlib import pyplot as plt

gradesList=[]
while True:
    grade=float(input("Enter a grade: "))
    if grade<0:
        break
    else:
        gradesList.append(grade)
gradesArray=np.array(gradesList)
gradesSeries=pd.Series(gradesArray,index=[i+1 for i in range(len(gradesArray))])
print(gradesSeries.describe())
x=gradesSeries.index.values
y=gradesSeries.values
plt.plot(x,y)
plt.scatter(x,y)
plt.bar(x,y)
plt.show()
```

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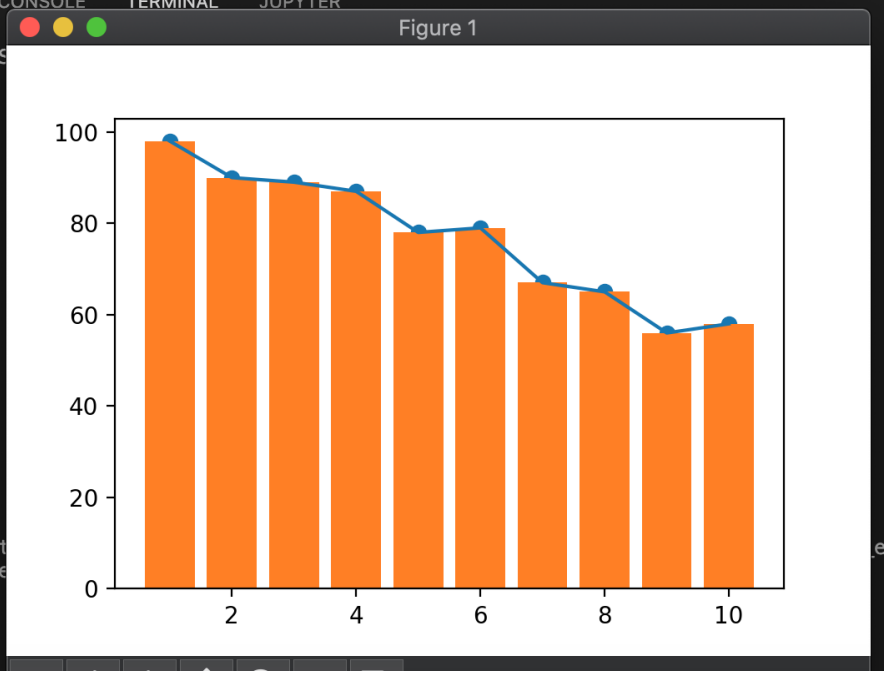
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  JUPYTER

driguez/Documents/WorkSpaceVS
Enter a grade: 98
Enter a grade: 90
Enter a grade: 89
Enter a grade: 87
Enter a grade: 78
Enter a grade: 79
Enter a grade: 67
Enter a grade: 65
Enter a grade: 56
Enter a grade: 58
Enter a grade: -9
count    10.000000
mean     76.700000
std      14.545331
min      56.000000
25%      65.500000
50%      78.500000
75%      88.500000
max      98.000000
dtype: float64
/Users/raulrodriguez/Document
er. Use callbacks.process('re
  plt.plot(x,y)
```



HW7_2.py > ...

```python
'''Exercise 2
Based on the Ex. 1, and after having created a Panda Series, create 5 lists from the Panda
Series, one for each grade, that is, A to F. For instance, a list that holds B grades taken from the
grades Panda Series would be: B = list(grades[(grades >= 80) & (grades < 90)]). Create a pie chart
where the slices are the number of elements in each one of the lists of A, B, C, D, F. For colors,
use r, g, b, y, m, start at 90◦, use shadow, and explode the F grades in the pie chart (see second
Figure in the next page)'''
import numpy as np
import pandas as pd
from matplotlib import pyplot as plt

gradesList=[]
while True:
    grade=float(input("Enter a grade: "))
    if grade<0:
        break
    else:
        gradesList.append(grade)
gradesArray=np.array(gradesList)
gradesSeries=pd.Series(gradesArray,index=[i+1 for i in range(len(gradesArray))])
a=list(gradesSeries[(gradesSeries>=90)])
b=list(gradesSeries[(gradesSeries<90)&(gradesSeries>=80)])
c=list(gradesSeries[(gradesSeries<80)&(gradesSeries>=70)])
d=list(gradesSeries[(gradesSeries<70)&(gradesSeries>=60)])
f=list(gradesSeries[(gradesSeries<60)])
numElements=[len(a),len(b),len(c),len(d),len(f)]
plt.pie(numElements,labels= ['a','b','c','d','f'],colors=['r','g','b','y','m'],startangle=90,shadow=True,explode=(0,0,0,0,0.1),autopct='%1.1f%%')
plt.show()
```

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/usr/local/bin/python3 /Users/raulrodriguez/Documents/WorkSpaceVSPython/HW7_2.py
s/raulrodriguez/Documents/WorkSpaceVSPython/HW7_2.py
Enter a grade: 90
Enter a grade: 98
Enter a grade: 87
Enter a grade: 89
Enter a grade: 78
Enter a grade: 79
Enter a grade: 67
Enter a grade: 68
Enter a grade: 57
Enter a grade: 54
Enter a grade: -8
/Users/raulrodrigue
er. Use callbacks.p
  plt.pie(numElement
```