```
In [ ]:  '''
         DSBDAL Assignment 3

         Descriptive Statistics - Measures of Central Tendency and variability

         Perform the following operations on any open source dataset (e.g., data.c
         1. Provide summary statistics (mean, median, minimum, maximum, standard d
         a dataset (age, income etc.) with numeric variables grouped by one of the
         (categorical) variable. For example, if your categorical variable is age
         quantitative variable is income, then provide summary statistics of incom
         age groups. Create a list that contains a numeric value for each response
         variable.

         2. Write a Python program to display some basic statistical details like
         standard deviation etc. of the species of 'Iris-setosa', 'Iris-versicolor
         of iris.csv dataset.
         Provide the codes with outputs and explain everything that you do in this
         '''
```

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

```
In [3]:  df = pd.read_excel('StudentsPerformanceTest1.xlsx')
```

```
In [4]:  df
```

Out[4]:

	gender	math score	reading score	writing score	Placement Score	placement offer count
0	female	72.000000	72.00	74	78.000	1
1	female	69.000000	90.00	88	62.125	2
2	female	90.000000	95.00	93	74.000	2
3	male	47.000000	57.00	77	78.000	1
4	male	52.285714	78.00	75	81.000	3
5	female	71.000000	72.25	78	70.000	4
6	male	12.000000	44.00	52	12.000	2
7	male	52.285714	65.00	67	49.000	1
8	male	5.000000	77.00	89	55.000	0

```
In [6]:  df_stats = df.describe()
         df_stats
```

Out[6]:

	math score	reading score	writing score	Placement Score	placement offer count
count	9.000000	9.000000	9.0000	9.000000	9.000000
mean	52.285714	72.250000	77.0000	62.125000	1.777778
std	28.123452	15.698328	12.5499	21.791268	1.201850
min	5.000000	44.000000	52.0000	12.000000	0.000000
25%	47.000000	65.000000	74.0000	55.000000	1.000000
50%	52.285714	72.250000	77.0000	70.000000	2.000000
75%	71.000000	78.000000	88.0000	78.000000	2.000000
max	90.000000	95.000000	93.0000	81.000000	4.000000

In [8]:
```python
df2 = pd.read_csv('IRIS.csv')
```

In [19]:
```python
df2.describe()
```

Out[19]:

	sepal_length	sepal_width	petal_length	petal_width
count	150.000000	150.000000	150.000000	150.000000
mean	5.843333	3.054000	3.758667	1.198667
std	0.828066	0.433594	1.764420	0.763161
min	4.300000	2.000000	1.000000	0.100000
25%	5.100000	2.800000	1.600000	0.300000
50%	5.800000	3.000000	4.350000	1.300000
75%	6.400000	3.300000	5.100000	1.800000
max	7.900000	4.400000	6.900000	2.500000

In [11]:
```python
df3 = df2[df2['species']== 'Iris-setosa']
```

In [12]:
```python
df3
```

Out[12]:

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	Iris-setosa
1	4.9	3.0	1.4	0.2	Iris-setosa
2	4.7	3.2	1.3	0.2	Iris-setosa
3	4.6	3.1	1.5	0.2	Iris-setosa
4	5.0	3.6	1.4	0.2	Iris-setosa
5	5.4	3.9	1.7	0.4	Iris-setosa
6	4.6	3.4	1.4	0.3	Iris-setosa
7	5.0	3.4	1.5	0.2	Iris-setosa
8	4.4	2.9	1.4	0.2	Iris-setosa
9	4.9	3.1	1.5	0.1	Iris-setosa
10	5.4	3.7	1.5	0.2	Iris-setosa
11	4.8	3.4	1.6	0.2	Iris-setosa
12	4.8	3.0	1.4	0.1	Iris-setosa
13	4.3	3.0	1.1	0.1	Iris-setosa
14	5.8	4.0	1.2	0.2	Iris-setosa
15	5.7	4.4	1.5	0.4	Iris-setosa
16	5.4	3.9	1.3	0.4	Iris-setosa
17	5.1	3.5	1.4	0.3	Iris-setosa
18	5.7	3.8	1.7	0.3	Iris-setosa
19	5.1	3.8	1.5	0.3	Iris-setosa
20	5.4	3.4	1.7	0.2	Iris-setosa
21	5.1	3.7	1.5	0.4	Iris-setosa
22	4.6	3.6	1.0	0.2	Iris-setosa
23	5.1	3.3	1.7	0.5	Iris-setosa
24	4.8	3.4	1.9	0.2	Iris-setosa
25	5.0	3.0	1.6	0.2	Iris-setosa
26	5.0	3.4	1.6	0.4	Iris-setosa
27	5.2	3.5	1.5	0.2	Iris-setosa
28	5.2	3.4	1.4	0.2	Iris-setosa
29	4.7	3.2	1.6	0.2	Iris-setosa
30	4.8	3.1	1.6	0.2	Iris-setosa
31	5.4	3.4	1.5	0.4	Iris-setosa
32	5.2	4.1	1.5	0.1	Iris-setosa
33	5.5	4.2	1.4	0.2	Iris-setosa
34	4.9	3.1	1.5	0.1	Iris-setosa
35	5.0	3.2	1.2	0.2	Iris-setosa
36	5.5	3.5	1.3	0.2	Iris-setosa

	sepal_length	sepal_width	petal_length	petal_width	species
37	4.9	3.1	1.5	0.1	Iris-setosa
38	4.4	3.0	1.3	0.2	Iris-setosa
39	5.1	3.4	1.5	0.2	Iris-setosa
40	5.0	3.5	1.3	0.3	Iris-setosa
41	4.5	2.3	1.3	0.3	Iris-setosa
42	4.4	3.2	1.3	0.2	Iris-setosa
43	5.0	3.5	1.6	0.6	Iris-setosa
44	5.1	3.8	1.9	0.4	Iris-setosa
45	4.8	3.0	1.4	0.3	Iris-setosa
46	5.1	3.8	1.6	0.2	Iris-setosa
47	4.6	3.2	1.4	0.2	Iris-setosa
48	5.3	3.7	1.5	0.2	Iris-setosa
49	5.0	3.3	1.4	0.2	Iris-setosa

In [13]:
```python
df3.describe()
```

Out[13]:

	sepal_length	sepal_width	petal_length	petal_width
count	50.00000	50.000000	50.000000	50.00000
mean	5.00600	3.418000	1.464000	0.24400
std	0.35249	0.381024	0.173511	0.10721
min	4.30000	2.300000	1.000000	0.10000
25%	4.80000	3.125000	1.400000	0.20000
50%	5.00000	3.400000	1.500000	0.20000
75%	5.20000	3.675000	1.575000	0.30000
max	5.80000	4.400000	1.900000	0.60000

In [14]:
```python
df4 = df2[df2['species']== 'Iris-versicolor']
```

In [16]:
```python
df4.describe()
```

Out[16]:

	sepal_length	sepal_width	petal_length	petal_width
count	50.000000	50.000000	50.000000	50.000000
mean	5.936000	2.770000	4.260000	1.326000
std	0.516171	0.313798	0.469911	0.197753
min	4.900000	2.000000	3.000000	1.000000
25%	5.600000	2.525000	4.000000	1.200000
50%	5.900000	2.800000	4.350000	1.300000
75%	6.300000	3.000000	4.600000	1.500000
max	7.000000	3.400000	5.100000	1.800000

In [17]:
```python
df5 = df2[df2['species']== 'Iris-virginica']
```

In [18]:
```python
df5.describe()
```

Out[18]:

	sepal_length	sepal_width	petal_length	petal_width
count	50.00000	50.000000	50.000000	50.00000
mean	6.58800	2.974000	5.552000	2.02600
std	0.63588	0.322497	0.551895	0.27465
min	4.90000	2.200000	4.500000	1.40000
25%	6.22500	2.800000	5.100000	1.80000
50%	6.50000	3.000000	5.550000	2.00000
75%	6.90000	3.175000	5.875000	2.30000
max	7.90000	3.800000	6.900000	2.50000

In [ ]: