```
In [ ]:  # Perform the following operations on any open source dataset (e.g., data.csv)
         # 1. Provide summary statistics (mean, median, minimum, maximum, standard deviat
         # dataset (age, income etc.) with numeric variables grouped by one of the qualit
         # variable. For example, if your categorical variable is age groups and quantita
         # income, then provide summary statistics of income grouped by the age groups. C
         # contains a numeric value for each response to the categorical variable.
         # 2. Write a Python program to display some basic statistical details like perce
         # deviation etc. of the species of 'Iris-setosa', 'Iris-versicolor' and 'Iris-ve
         # dataset.
```

```
In [ ]:  # Import necessary libraries
         import pandas as pd
         import seaborn as sns

         # Load the Titanic dataset
         titanic = sns.load_dataset('titanic')
```

```
In [ ]:  # 1. Provide summary statistics for a dataset with numeric variables grouped by
         # Here, we group by 'Sex' and provide summary statistics for 'Age'
         data = titanic.groupby('sex')['age']

         # Summary statistics
         print("Summary statistics for Age grouped")
         print("Mean\n", data.mean())
         print("Median\n", data.median())
         print("Minimum\n", data.min())
         print("Maximum\n", data.max())
         print("Standard Deviation\n", data.std())
```

```
Summary statistics for Age grouped
Mean
 sex
female    27.915709
male      30.726645
Name: age, dtype: float64
Median
 sex
female    27.0
male      29.0
Name: age, dtype: float64
Minimum
 sex
female    0.75
male      0.42
Name: age, dtype: float64
Maximum
 sex
female    63.0
male      80.0
Name: age, dtype: float64
Standard Deviation
 sex
female    14.110146
male      14.678201
Name: age, dtype: float64
```

```
In [ ]:  # Create a list that contains a numeric value for each response to the categoric
         numeric = [data.mean(), data.median(), data.min(), data.max(), data.std()]
```

```
print("List of numeric values for each response to the categorical variable\n",
```

List of numeric values for each response to the categorical variable
 [sex
female   27.915709
male   30.726645
Name: age, dtype: float64, sex
female   27.0
male   29.0
Name: age, dtype: float64, sex
female   0.75
male   0.42
Name: age, dtype: float64, sex
female   63.0
male   80.0
Name: age, dtype: float64, sex
female   14.110146
male   14.678201
Name: age, dtype: float64]

In [ ]:
```python
# Load the Iris dataset
iris = sns.load_dataset('iris')
```

In [ ]:
```python
# 2. Write a Python program to display some basic statistical details like perce
# deviation etc. of the species of 'Iris-setosa', 'Iris-versicolor' and 'Iris-ve
# dataset.

iris_setosa = iris[iris['species'] == 'setosa'].describe()
iris_versicolor = iris[iris['species'] == 'versicolor'].describe()
iris_virginica = iris[iris['species'] == 'virginica'].describe()

print("Basic statistical details of the species of 'Iris-setosa'\n", iris_setosa
print("Basic statistical details of the species of 'Iris-versicolor'\n", iris_ve
print("Basic statistical details of the species of 'Iris-virginica'\n", iris_vir
```

Basic statistical details of the species of 'Iris-setosa'

	sepal_length	sepal_width	petal_length	petal_width
count	50.00000	50.000000	50.000000	50.000000
mean	5.00600	3.428000	1.462000	0.246000
std	0.35249	0.379064	0.173664	0.105386
min	4.30000	2.300000	1.000000	0.100000
25%	4.80000	3.200000	1.400000	0.200000
50%	5.00000	3.400000	1.500000	0.200000
75%	5.20000	3.675000	1.575000	0.300000
max	5.80000	4.400000	1.900000	0.600000

Basic statistical details of the species of 'Iris-versicolor'

	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

Basic statistical details of the species of 'Iris-virginica'

	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