

## CA 5314: Practice Exercise 1

### Descriptive Statistics

#### Aim:

1. Explore all the statistical operations of Pandas and given in Catalog 1
2. Use Describe command and explore the dataset as given in Catalog 2
3. Use Descriptive Statistics for univariate and bivariate data as given in Catalog 3

#### Catalog 1

```
import pandas as pd
col_list=["id","first","last","gender","Marks","selected"]
df = pd.read_csv("SampleDB.csv",usecols=col_list)
print(df)

mean1 = df['Marks'].mean()
sum1 = df['Marks'].sum()
max1 = df['Marks'].max()
min1 = df['Marks'].min()
count1 = df['Marks'].count()
median1 = df['Marks'].median()
sd1 = df['Marks'].std()
var1 = df['Marks'].var()

print('Mean Marks\n' + str(mean1))
print('Sum of the Marks\n' + str(sum1))
print('Maximum of the marks\n' + str(max1))
print('Minimum of the marks\n' + str(min1))
print('Count of the marks\n' + str(count1))
print('Standard deviation of the marks\n' + str(sd1))
print('Variance of the marks\n' + str(var1))
print('End of Summary \n\n\n')
```

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#### Catalog 2

```
import pandas as pd
col_list=["id","first","last","gender","Marks","selected"]
df = pd.read_csv("SampleDB.csv",usecols=col_list)
print(df)
print(df.shape)
print(df.head(5))
print(df.describe())
```

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### Catalog 3

```
# Catalog 3
# Illustrates the use of univariate, bivariate Statistics

from scipy import stats
data = [1,2,3,4,5,6,8,8,8,8,9,10,10,10,12,14,18,18,18,22,39,44,55,55,55,55,66,78,79,88]

print("\n Details of the data \n", stats.describe(data))
print("\n The cumulative frequency of the data-n",stats.cumfreq(data))
print("\n The Geometric mean of the data-n",stats.gmean(data))
print("\n The Harmonic mean of the data-n",stats.hmean(data))
print("\n The IQR of the data-n",stats.iqr(data))
print("\n The Zscore of the data-n",stats.zscore(data))
print("\n The skewness of the data-n",stats.skew(data))
print("\n The Kurtosis of the data-n",stats.kurtosis(data))

# Check correlation of the data

data = [1,2,3,6,8,10]
data1 = [2,3,4,5,9,12]

print("\n The Spearman correlation of the data-n",stats.spearmanr(data,data1))
```