ABHILASHA CHATTERJEE
DATA ANALYTICS & BUSINESS INTELLIGENCE BATCH 9

ASSIGNMENT 1

[1]:
```
# Creating a list of friends
Friends = ['Arushi', 'Pratik', 'Siddharth', 'Geetika']
for x in Friends:
 print(x)
```

```
Arushi
Pratik
Siddharth
Geetika
```

[2]:
```
# Changing a list into tuple
friends =('Arushi', 'Pratik', 'Siddharth', 'Geetika')
print(friends)
```

```
('Arushi', 'Pratik', 'Siddharth', 'Geetika')
```

[3]:
```
Details = ['Abhilasha', '22', 'Female', 'A']
```

[4]:
```
Friends.append ('Nishtha')
print (Friends)
```

```
['Arushi', 'Pratik', 'Siddharth', 'Geetika', 'Nishtha']
```

[5]:
```
Friends[2] = 'Chirag'
print (Friends)
```

```
['Arushi', 'Pratik', 'Chirag', 'Geetika', 'Nishtha']
```

[6]:
```
import numpy as np
arr = np.array([34,45,20,27,49,36,41,50,24,39])
```

[7]:
```
mean_val = np.mean(arr)
mean_val
```

[7]:
```
36.5
```

[8]:
```
sq_val = np.square(arr)
sq_val
```

[8]:
```
array([1156, 2025,  400,  729, 2401, 1296, 1681, 2500,  576, 1521])
```

[9]:
```
sqrt_val = np.sqrt(arr)
sqrt_val
```

[9]:
```
array([5.83095189, 6.70820393, 4.47213595, 5.19615242, 7.        ,
       6.        , 6.40312424, 7.07106781, 4.89897949, 6.244998  ])
```

[10]:
```
log_base = 10
log_val = np.log(arr) / np.log(10)
log_val
```

[10]:
```
array([1.53147892, 1.65321251, 1.30103   , 1.43136376, 1.69019608,
       1.5563025 , 1.61278386, 1.69897   , 1.38021124, 1.59106461])
```

[11]:
```
log_base = 2.7183
log_val = np.log(arr) / np.log(2.7183)
log_val
```

[11]:
```
array([3.52633695, 3.80663704, 2.99571225, 3.29581483, 3.89179428,
       3.58349498, 3.71354724, 3.91199685, 3.17803259, 3.66353716])
```

[12]:
```
import numpy as np
numbers = np.array ([4,5,6,7])
```

[13]:
```
exponent = 3
result = np.power(numbers,3)
result
```

[13]:
```
array([ 64, 125, 216, 343], dtype=int32)
```

[14]:
```
import pandas as pd
flowers = pd.Series(["Rose", "Lily", "Lotus"])
print (flowers)
```

```
0     Rose
1     Lily
2    Lotus
dtype: object
```

[15]:
```
flowers = ["Rose", "Lily", "Lotus"]
df2 = pd.DataFrame({'Flowers':flowers})
```

```
df2
```

[15]:
```
  Flowers
0    Rose
1    Lily
2   Lotus
```

[2]:
```
import pandas as pd
```

[3]:
```
pwd
```

[3]:
```
'C:\\Users\\abc'
```

[4]:
```
df = pd.read_excel(r"C:\Users\abc\Desktop\ASSINGMENTS\Loan Data.xlsx")
```

[5]:
```
print (df.head(5))
```

```
        ID Amount.Requested Amount.Funded.By.Investors  Interest.Rate  \
0  79542.0            25000                      25000         0.1849
1  75473.0            19750                      19750         0.1727
2  67265.0             2100                       2100         0.1433
3  80167.0            28000                      28000         0.1629
4  17240.0            24250                   17431.82         0.1223

  Loan.Length  Debt.To.Income.Ratio Home.Ownership  Monthly.Income  \
0   60 months                0.2756       MORTGAGE         8606.56
1   60 months                0.1339       MORTGAGE         6737.50
2   36 months                0.0350            OWN         1000.00
3   36 months                0.1962       MORTGAGE         7083.33
4   60 months                0.2379       MORTGAGE         5833.33

  Open.CREDIT.Lines Revolving.CREDIT.Balance  Inquiries.in.the.Last.6.Months  \
0                11                    15210                             3.0
1                14                    19070                             3.0
2                13                      893                             1.0
3                12                    38194                             1.0
4                 6                    31061                             2.0

  Employment.Length
0           5 years
1           4 years
2          < 1 year
3         10+ years
4         10+ years
```

[6]:
```
df = pd.read_csv(r"C:\Users\abc\Desktop\ASSINGMENTS\loan data.csv")
```

[7]:
```
print (df.tail(3))
```

```
           ID Amount.Requested Amount.Funded.By.Investors Interest.Rate  \
2197  94545.0            19800                      19775        15.31%
2198  53635.0            18000                      18000        20.99%
2199  67953.0             7550                       7550        10.16%

     Loan.Length Debt.To.Income.Ratio Home.Ownership  Monthly.Income  \
2197   60 months               15.03%       MORTGAGE         6666.67
2198   60 months               11.63%           RENT         9051.83
2199   36 months                3.83%       MORTGAGE         8333.33

     Open.CREDIT.Lines Revolving.CREDIT.Balance  \
2197                10                    46879
2198                 5                    32394
2199                10                    10204

      Inquiries.in.the.Last.6.Months Employment.Length
2197                             3.0           6 years
2198                             2.0           4 years
2199                             0.0           2 years
```

[8]:
```
text = "My name is Abhilasha"
for _ in range(5) :
 print (text)
```

```
My name is Abhilasha
My name is Abhilasha
My name is Abhilasha
My name is Abhilasha
My name is Abhilasha
```

[9]:
```
# Creating a formula to calculate simple interest
def calculate_simple_interest(principal, rate, time):
    return (principal * rate * time) / 100

principal = float(input("Enter the principal amount: "))
rate = float(input("Enter the interest rate (in percentage): "))
time = float(input("Enter the time (in years): "))

result_function = calculate_simple_interest(principal, rate, time)
print("Simple Interest (using function):", result_function)
```

```
Enter the principal amount: 8000
Enter the interest rate (in percentage): 8
Enter the time (in years): 5
Simple Interest (using function): 3200.0
```

[10]:
```
simple_interest = lambda p, r, t: (p * r * t) / 100

result_lambda = simple_interest(principal, rate, time)
print("Simple Interest (using lambda):", result_lambda)
```

```
Simple Interest (using lambda): 3200.0
```