



University Institute of Engineering Department of Computer Science & Engineering

Experiment: 1.1

Student Name:

UID:

Branch: Computer Science & Engineering

Section/Group:

Semester: 1st

Date of Performance:

Subject Name: Disruptive Technology

Subject Code:

1. Aim of the practical:

- WAP to execute Left shift operator and Right Shift Operator.
- WAP to find max among three numbers and input from user [Hint: Try max() function]
- WAP to print the table of n number; where n will be given by the user.
- Sum all numbers from 1 to 10.
- WAP using function that will add all even numbers from 1 to n; n given by user.
 - Read from one file, Convert it to upper case and write to other file → Create a dataframe and draw a sample data to work.
- Read a csv file and apply “Dropping columns” function. [Dataset file namenba16.csv]
- Read a csv file and select particular column while reading using loc and iloc. → Draw a bar graph on Dataset provided. [Dataset file name- nba16.csv]

2. Tool Used:

PYTHON 3
pandas

3. Basic Concept/ Command Description:



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1.

Bitwise left shift: Shifts the bits of the number to the left and fills 0 on voids right as a result. Similar effect as multiplying the number with some power of two.

Bitwise right shift: Shifts the bits of the number to the right and fills 0 on voids left(fills 1 in the case of a negative number) as a result. Similar effect as of dividing the number with some power of two.

2.

- Initialize three number by n1, n2 and n3
- Add three numbers into list lst = [n1, n2, n3].
- Using max() function to find the greatest number max(lst).
- And finally we will print maximum number

3.

User is asked to enter the number and the program prints the multiplication table of the input number using for loop. The loops run from 1 to 10 and the input number is multiplied by the loop counter in each step to display the steps of multiplication table.

4.

We've used an if...else statement in combination with a while loop to calculate the sum of natural numbers up to num.

5.

We are using Python For Loop to keep the number between 1 and maximum value.



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6.

We will use loop to iterate via contents of first file and then convert them to upper case then copy them to second file.

7.

This program will make a dataframe from the dictionary data.

8.

This program will delete all empty cells from the dataframed data of nba16 csv file.

9.

This program will select a certain row and then display them.

10.

This program will create a bar chart of values from nba16 csv file and then print it.

4. Code :

1.

```
print('Ayushya Saxena, 21BCS4392')
```

```
a = 10 b = -10
```

```
# print bitwise right shift operator
```

```
print("a >> 1 =", a >> 1)
```

```
print("b >> 1 =", b >> 1)
```



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```
a = 5 b  
= -10
```

```
# print bitwise left shift operator  
print("a << 1 =", a << 1) print("b  
<< 1 =", b << 1)
```

2.

```
print('Ayushya Saxena, 21BCS4392')  
def maximum(a, b, c): list = [a, b, c]  
return max(list)  
a = 10  
b = 14  
c = 12  
print(maximum(a, b, c))
```

3.

```
num = int(input("Enter the number: "))  
print('Ayushya Saxena, 21BCS4392')  
print("Multiplication Table of", num)  
for i in range(1, 11):  
print(num, "X", i, "=", num * i)
```

4.

```
num = 10
```



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```
print('Ayushya Saxena, 21BCS4392')  
if num < 0:  
    print("Enter a positive number")  
else:  
    sum = 0  
    while(num > 0):  
        sum += num  
        num -= 1  
    print("The sum is", sum)
```

5.

```
maximum = int(input(" Please Enter the Maximum Value : "))  
total = 0  
for number in range(1, maximum+1):  
    if(number % 2 == 0):  
        print("{0}".format(number))  
        total = total + number  
print("The Sum of Even Numbers from 1 to {0} = {1}".format(maximum,  
total))
```

```
with open('first.txt', 'r') as firstfile, open('second.txt', 'a') as secondfile:  
    for line in firstfile:  
        x=line.upper()  
        secondfile.write(x)
```



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7.

```
import pandas as pd
```

```
data = {  
    "calories": [420, 380, 390],  
    "duration": [50, 40, 45]  
}
```

```
#load data into a DataFrame object:
```

```
df = pd.DataFrame(data)  
print('Ayushya saxena, 21BCS4392')  
print(df)
```

8.

```
import pandas as pd
```

```
df = pd.read_csv('nba16.csv')
```

```
new_df = df.dropna()
```

```
print(new_df.to_string())
```



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9.

```
import pandas as pd
df = pd.read_csv('nba16.csv')
new_df = df.dropna()
print(df.loc[9])
```

10. import sys import

matplotlib

matplotlib.use('Agg') import

pandas as pd import

matplotlib.pyplot as plt df =

pd.read_csv('nba16.csv')

df["Duration"].plot(kind =

'hist') print('Ayushya saxena,

21BCS4392') plt.show()

plt.savefig(sys.stdout.buffer)

sys.stdout.flush()

5. Observations, Simulation Screen Shots and
Discussions:



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1.

Ayushya Saxena, 21BCS4392

$a \gg 1 = 5$

$b \gg 1 = -5$

$a \ll 1 = 10$

$b \ll 1 = -20$

> |

2.



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Ayushya Saxena, 21BCS4392

14

>

3.



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```
Enter the number: 7
Ayushya Saxena, 21BCS4392
Multiplication Table of 7
7 X 1 = 7
7 X 2 = 14
7 X 3 = 21
7 X 4 = 28
7 X 5 = 35
7 X 6 = 42
7 X 7 = 49
7 X 8 = 56
7 X 9 = 63
7 X 10 = 70
> |
```



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```
Ayushya Saxena, 21BCS4392  
The sum is 55  
> |
```

5.

```
Please Enter the Maximum Value : 19  
Ayushya Saxena, 21BCS4392  
2  
4  
6  
8  
10  
12  
14  
16  
18  
The Sum of Even Numbers from 1 to 19 = 90  
> |
```

6.



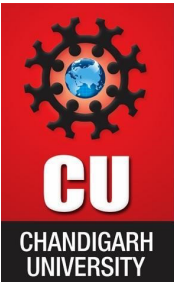
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```
secondfile - Notepad
File Edit Format View Help
MY NAME IS PYTHON.|
```

7.

```
Ayushya saxena, 21BCS4392
  calories  duration
0         420        50
1         380        40
2         390        45
```

8.



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Ayushya Saxena, 21BCS4392

	Duration	Date	Pulse	Maxpulse	Calories
0	60	'2020/12/01'	110	130	409.1
1	60	'2020/12/02'	117	145	479.0
2	60	'2020/12/03'	103	135	340.0
3	45	'2020/12/04'	109	175	282.4
4	45	'2020/12/05'	117	148	406.0
5	60	'2020/12/06'	102	127	300.0
6	60	'2020/12/07'	110	136	374.0
7	450	'2020/12/08'	104	134	253.3
8	30	'2020/12/09'	109	133	195.1
9	60	'2020/12/10'	98	124	269.0
10	60	'2020/12/11'	103	147	329.3
11	60	'2020/12/12'	100	120	250.7
12	60	'2020/12/12'	100	120	250.7
13	60	'2020/12/13'	106	128	345.3
14	60	'2020/12/14'	104	132	379.3
15	60	'2020/12/15'	98	123	275.0
16	60	'2020/12/16'	98	120	215.2
17	60	'2020/12/17'	100	120	300.0
19	60	'2020/12/19'	103	123	323.0
20	45	'2020/12/20'	97	125	243.0
21	60	'2020/12/21'	108	131	364.2
23	60	'2020/12/23'	130	101	300.0
24	45	'2020/12/24'	105	132	246.0
25	60	'2020/12/25'	102	126	334.5
26	60	20201226	100	120	250.0
27	60	'2020/12/27'	92	118	241.0
29	60	'2020/12/29'	100	132	280.0
30	60	'2020/12/30'	102	129	380.3
31	60	'2020/12/31'	92	115	243.0



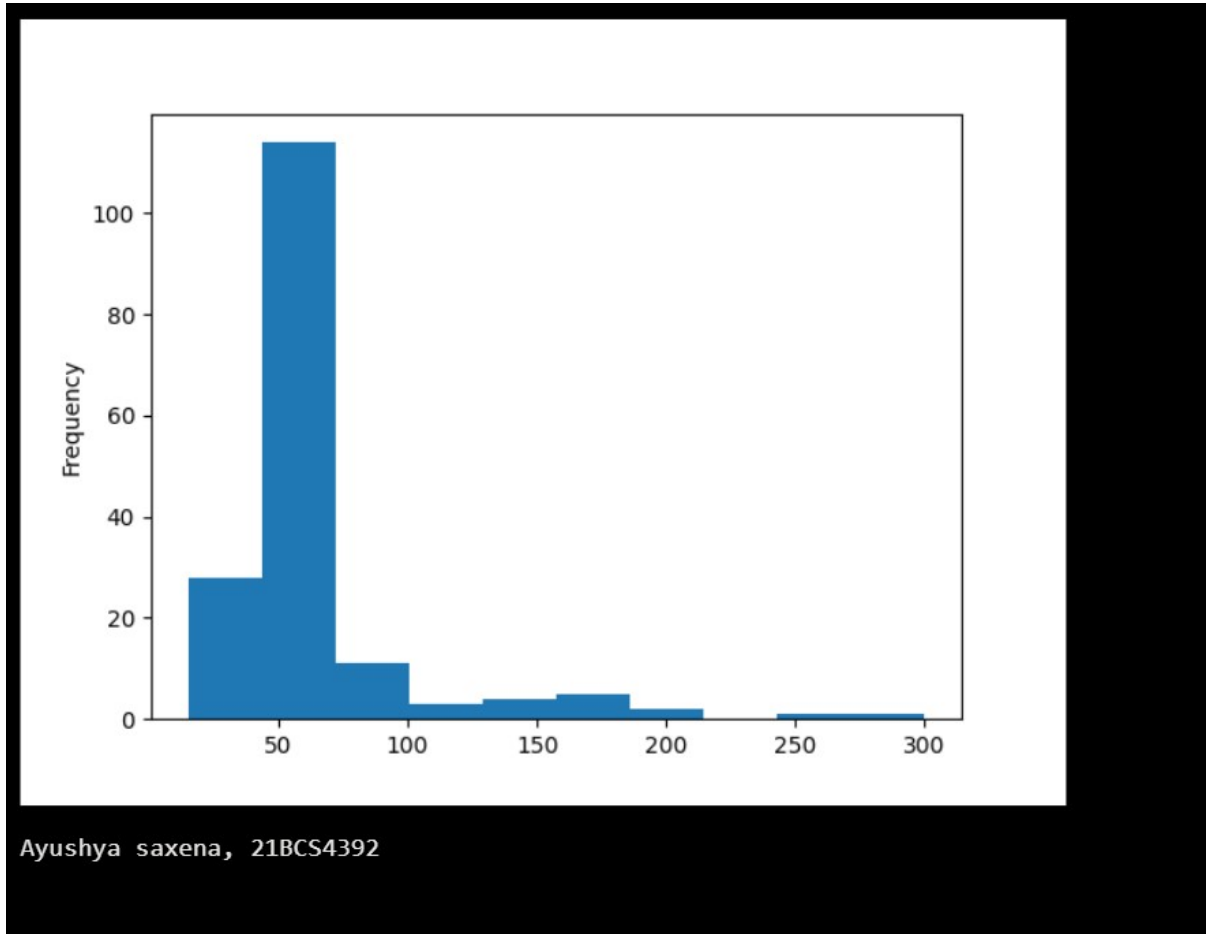
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```
Ayushya saxena, 21BCS4392  
Duration          60  
Date              '2020/12/10'  
Pulse             98  
Maxpulse          124  
Calories          269  
Name: 9, dtype: object
```

10.



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7. Additional Creative Inputs (If Any): NONE

Learning outcomes (What I have learnt):

- Remember the concepts related to Pandas, create Dataframes and write csv files.
- Understand the way of execution and debug programs in Python language.
- Apply various constructs, loops, functions to solve a mathematical and scientific problem.
- Analyze the data in the dataframe and manipulating it.



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- Design and develop modular programs for real-world problems using controlstructure and selection structure.

Evaluation Grid (To be filled by Faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Worksheet completion including writing learning objectives/Outcomes.(To be submitted at the end of the day)		10
2.	Post Lab Quiz Result.		5
3.	Student Engagement in Simulation/Demonstration/Performance and Controls/Pre-Lab Questions.		5
	Signature of Faculty (with Date):	Total Marks Obtained:	20