CYCLE - 1

Expt. No. 1 (a) Page No. 1

Expt. Name. Handling Input and Output Date : 07-01-2022

Aim:

To write a python program Handling Input and Output.

Algorithm:

step 1: Start
step 2: Get the input from the user
step 3: print the output by multiplying the input value and 5
step 4: Stop

Program:

```
print ("Handling Input and Output");
n= int (input ("Enter a number to be multiplied by 5: "))
print ("Your answer for 5 x {0} is {1}".format(n, n*5))
```

Result:

The above program is executed successfully and the output is attached.

Expt. No. 1 (b) Page No. 2

Expt. Name. Looping Constructs Date : 07-01-2022

Aim:

To write a python program using looping constructs.

Algorithm:

step 1: start

step 2: Get the input from the user

step 3: Using for loop given range between 1 and 11

step 3.1: print the multiplication of input value and number

step 4: stop

Program:

```
print("Looping Constructs")
n=int(input("Enter a number to get their Multiplication tables:"))
for i in range(1,11):
    print("{0} x {1} = {2}".format(n,i,n*i))
```

Result:

The above program is executed successfully and the output is attached.

Expt. No. 1(c) Page No. 3

Expt. Name. Arrays, Lists and set, dictionaries Date : 07-01-2022

Aim:

To write a python program using Arrays, Lists, set and dictionaries

Algorithm:

step 1: start
step 2: import array library
step 3: print the array given in the code
step 4: initialize 2 lists and append
step 5: append the two lists and print it
step 6: initialize 2 sets
step 7: append the two sets and print it
step 8: initialize a dictionary
step 9: update the dictionary and print it
step 10: stop

Program:

```
import array as ar
print("Arrays, Lists, set and Dictionaries \n")
print("Arrays")
a = ar.array('i', [1,2,3])
for i in range(0,3):
    print(a[i], end=" ")
print()
print("Appending Lists\n")
l1 = ["a", "b", "c"]
l2 = [1, 2, 3]
```

```
for x in l2:
    l1.append(x)
print("append list : ", end=" ")
print(l1)
print("\n Appending Sets \n")
S1 = {"a", "b", "c"}
S2 = {1, 2, 3}
set 3 = S1.union(S2)
print("append set: ", end=" ")
print (set 3)
car = {'brand': 'Ford', 'model': 'Mustang', 'year': 1964}
print("\n Details of car before updating : \n{0}'.format(car))
car["color"] = "white"
print("\n Details of a car after updating: \n{0}".format(car))
```

Result:

The above program is executed successfully and the output is attached.

Expt. No. 2 (a) Page No. 5

Expt. Name. Modules and Function Date : 07-01-2022

Aim:

To write a python program using Modules and Function

Algorithm:

Step 1: Start

Step 2: Create a function for sum, difference, multiplication and ~~Divid~~ Division

step 3: Perform the respective operations in their function

step 4: Call the function with the parameters

step 5: stop

Program:

```
def add(x,y):
    print("sum of {0}+{1}={2}".format(x,y,x+y))
def sub(x,y):
    print("Difference of {0}-{1}={2}".format(x,y,x-y))
def mul(x,y):
    print("Product of {0}*{1}={2}".format(x,y,x*y))
def div(x,y):
    print("Quotient of {0}/{1}={2}".format(x,y,x/y))
add(2,3)
sub(5,3)
mul(10,5)
div(10,2)
```

Result:

The above program is executed successfully and the output is attached.

Expt. No. 2(b) Page No. 6

Expt. Name. File Handling Date : 07-01-2022

Aim:

To write a python program using File Handling

Algorithm:

Step 1 : start

step 2: take the file as input

step 3: print the file name, mode of opening,

step 4: stop

Program:

```
fo = open ("data.txt", "wb")
print ("Mode of opening:", fo.name)
print ("File name:", fo.name)
print ("Is closed:", fo.closed)
```

Result:

The above program is executed successfully and the output is attached.

Expt. No. 2(c) Page No. 7

Expt. Name. Exception Handling Date : 07-01-2022

Aim:

To write a python program using Exception Handling

Algorithm:

step 1 : Start
step 2: initialize a list
step 3: Using try print the elements
step 4: Using except print the error occured
step 5: stop

Program:

```
a = [1, 2, 3]
try:
    print ("Second element = %d" %(a[1]))
    print ("Fourth element = %d" %(a[3]))
except:
    print ("An error occurred")
```

Result:

The above code is executed successfully and the output is attached.

Expt. No. 3 Page No. 8

Expt. Name. Given list, find second highest value Date: 07-01-2022

Aim:

To write a python program to find the second highest value in a given list.

Algorithm:

step 1: start
step 2: initialize the array
step 3: sort array using sort method
step 4: print the second last element in the list
step 5: stop

Program:

```
arr = [6, 5, 2, 1, 6, 4]
arr.sort()
print ('second highest element in list is:', arr[-2])
```

Result:

The above code is executed successfully.

Output:

1.a. Handling Input and Output

```
#1. a.Handling Input and output
print("Handling Input and Output")
n=int(input("Enter a number to be multiplied by 5 :"))
print("Your answer for 5 x {0} is {1}".format(n,n*5))
```

```
Handling Input and Output
Enter a number to be multiplied by 5 :6
Your answer for 5 x 6 is 30
```

1.b. Looping Constructs

```
#b.Looping Construts
print("Looping constructs")
n=int(input("Enter a Number to get their Multiplication tables :"))
for i in range(1,11):
  print("{0} x {1} = {2}".format(n,i,n*i))
```

```
Looping constructs
Enter a Number to get their Multiplication tables :6
6 x 1 = 6
6 x 2 = 12
6 x 3 = 18
6 x 4 = 24
6 x 5 = 30
6 x 6 = 36
6 x 7 = 42
6 x 8 = 48
6 x 9 = 54
6 x 10 = 60
```

1.c. Arrays, Lists, Sets and Dictionaries

```
#c.Arrays, Lists, Sets and Dictionaries
import array as arr
print("Arrays, Lists, Sets and Dictionaries\n")
print("Arrays")
a = arr.array('i', [1, 2, 3])
for i in range (0, 3):
    print (a[i], end =" ")
print()
print("Appending Lists\n")
l1 = ["a", "b" , "c"]
l2 = [1, 2, 3]
for x in l2:
  l1.append(x)
print("appended list : ", end=" ")
print(l1)
print("\nAppending Sets\n")
s1 = {"a", "b" , "c"}
s2 = {1, 2, 3}
set3 = s1.union(s2)
print("appended Set : ", end=" ")
print(set3)
car = {'brand': 'Ford', 'model': 'Mustang', 'year': 1964}
print("\nDetails of car before updating : \n{0}".format(car))
car["color"]="white"
print("\nDetails of a car after updating : \n{0}".format(car))
```

```
Arrays, Lists, Sets and Dictionaries

Arrays
1 2 3
Appending Lists

appended list :  ['a', 'b', 'c', 1, 2, 3]

Appending Sets

appended Set :  {1, 2, 3, 'c', 'a', 'b'}

Details of car before updating :
{'brand': 'Ford', 'model': 'Mustang', 'year': 1964}

Details of a car after updating :
{'brand': 'Ford', 'model': 'Mustang', 'year': 1964, 'color': 'white'}
```

2.a. Modules and Functions

```
#2. a.Modules and Functions
def add(x,y):
  print("Sum of {0} + {1} = {2} ".format(x,y,x+y))
def sub(x,y):
  print("Difference of {0} - {1} = {2} ".format(x,y,x-y))
def mul(x,y):
  print("Product of {0} x {1} = {2} ".format(x,y,x*y))
def div(x,y):
  print("Quotient of {0} / {1} = {2} ".format(x,y,x/y))
add(2,3)
sub(5,3)
mul(10,5)
div(10,2)
```

```
Sum of 2 + 3 = 5
Difference of 5 - 3 = 2
Product of 10 x 5 = 50
Quotient of 10 / 2 = 5.0
```

2.b. File Handling

```
#b. File Handling
fo = open("data.txt", "wb")
print ("File Name: ", fo.name)
print ("Mode of Opening: ", fo.mode)
print ("Is Closed: ", fo.closed)
```

```
File Name:  data.txt
Mode of Opening:  wb
Is Closed:  False
```

2.c. Exception Handling

```
#c.Exception Handling
a = [1, 2, 3]
try:
    print ("Second element = %d" %(a[1]))

    # Throws error since there are only 3 elements in array
    print ("Fourth element = %d" %(a[3]))

except:
    print ("An error occurred")
```

```
Second element = 2
An error occurred
```

3. Write python code to, find the second highest value from the given input list.

```
#3.Write python code to , find the second highest value from the given input list.
arr=[6, 5, 2, 1, 6, 4]
arr.sort()
print("Second highest element in list is :",arr[-2])
```

```
Second highest element in list is : 6
```