

SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY, SURAT
COMPUTER SCIENCE AND ENGINEERING DEPARTMENT

B. Tech-1st Year

(Even Semester- 2024-2025)

Subject – Web Programming (CS104)

Python Lab Assignment 9 - Controlling Statements and Functions

1. Python Program to count the number of vowels in a string.

```
p = (input("Enter a String :"))

n = str(p)

c = 0

for i in n:

    if(i=='a' or i=='e' or i=='i' or i=='o' or i=='u' or i=='A'
or i=='E' or i=='I' or i=='O' or i=='U'):

        c = c + 1

print("Number of Vowels in the given string {0} :
{1}".format(n, c))
```

```
PS C:\Users\CCC-99\Desktop\u24cs118\WPP\PYTHON> & C:/Users/CCC-99/Desktop/u24cs118/WPP/PYTHON/lab9/q1.py
Enter a String :Apple
Number of Vowels in the given string Apple : 2
PS C:\Users\CCC-99\Desktop\u24cs118\WPP\PYTHON>
```

2. Python Program to reverse a given number.

#2. Python Program to reverse a given number

```
n = str(input("Enter a number :"))
n = n[::-1]
n = int(n)
print("Number after reversing :",n)
```

```
PS C:\Users\CCC-99\Desktop\u24cs118\WPP\PYTHON> & C:/Users/CCC-99/Desktop/u24cs118/WPP/PYTHON/lab9/q2.py
Enter a number :87613251
Number after reversing : 15231678
```

3. Python Program to count the number of digits in a number.

```
n = str(input("Enter a number :"))
c = 0

for i in n:
```

```
    if(n.isalnum()):  
        c = c+ 1  
  
print("Number of digits :", c)
```

```
xe c:/Users/CCC-99/Desktop/u24cs118/WPP/PYTHON/lab9/q3.py  
Enter a number :5641  
Number of digits : 4  
PS C:\Users\CCC-99\Desktop\u24cs118\WPP\PYTHON> █
```

4. Python Program to find the factorial of a number with and without using recursion.

```
def rec(n):  
    if(n==0 or n==1):  
        return 1  
    return n*rec(n-1)  
  
n = int(input("Enter a number :"))  
m = 1  
for i in range(1, n + 1):  
    m = m*i  
  
print("Factorial of a given number {0} with recursion {1}")
```

```
and without recursion {2}".format(n,m,rec(n))
```

```
PS C:\Users\CCC-99\Desktop\u24cs118\WPP\PYTHON> & C:/Users/CCC-99/AppData/Local/Programs/Python/Python38-64/Python.exe c:/Users/CCC-99/Desktop/u24cs118/WPP/PYTHON/lab9/q4.py
Enter a number :5
Factorial of a given number 5 with recursion 120 and without recursion 120
```

5. Python Program to find the power of a number using recursion.

```
def po(n, p):
    if(p == 0):
        return 1
    return n * po(n, p - 1)

n = int(input("Enter a number :"))
p = int(input("Enter power:"))

print("Value :", po(n,p))
```

```
PS C:\Users\CCC-99\Desktop\u24cs118\WPP\PYTHON> & C:/Users/CCC-99/AppData/Local/Programs/Python/Python38-64/Python.exe c:/Users/CCC-99/Desktop/u24cs118/WPP/PYTHON/lab9/q5.py
Enter a number :2
Enter power:4
Value : 16
```

6. Python Program to find the sum of series: $1 + 1/2 + 1/3 + \dots + 1/N$.

```
n = int(input("Enter a number :"))
```

```
m = 0
for i in range(1, n+1):
    m = m + (1/i)

print("Value of series 1 + 1/2 + 1/3 + .... + 1/N :", m)
```

```
PS C:\Users\CCC-99\Desktop\u24cs118\WPP\PYTHON> & C:/Users/CCC-99/A
xe c:/Users/CCC-99/Desktop/u24cs118/WPP/PYTHON/lab9/q6.py
Enter a number :3
Value of series 1 + 1/2 + 1/3 + .... + 1/N : 1.8333333333333333
```

7. Define a function that accepts roll number and returns whether the student is present or absent.

8. Define a function in python that accepts 3 values and returns the maximum of three numbers.

```
def maxy(n1,n2,n3):
    if(n1>n2 and n1>n3):
        return n1
    elif(n2>n3 and n2>n1):
        return n2
    else:
        return n3
```

```
n1 = int(input("Enter number 1 :"))
n2 = int(input("Enter number 2 :"))
n3 = int(input("Enter number 3 :"))

print("Maximum Element :", maxy(n1,n2,n3))
```

```
PS C:\Users\CCC-99\Desktop\u24cs118\WPP\PYTHON> & C:/Users/CCC-99/Desktop/u24cs118/WPP/PYTHON/lab9/l8.py
Enter number 1 :13
Enter number 2 :4
Enter number 3 :9
Maximum Element : 13
```

9. Define a function that accepts radius and returns the area of a circle.

```
def rad(n):
    return 3.14*n*n

r = int(input("Enter radius :"))
print("Area of a Circle :", rad(r))
```

```
PS C:\Users\CCC-99\Desktop\u24cs118\WPP\PYTHON> & C:/Users/CCC-99/Desktop/u24cs118/WPP/PYTHON/lab9/q9.py
Enter radius :4
Area of a Circle : 50.24
```

10. A movie theater charges different ticket prices depending on a person's age. If a person

is under the age of 3, the ticket is free; if they are between 3 and 12, the ticket is \$10; and if they are over age 12, the ticket is \$15. Write a loop in which you ask users their age, and then tell them the cost of their movie ticket

11. Write a function called `make_album()` that builds a dictionary describing a music album. The function should take in an artist name and an album title, and it should return a dictionary containing these two pieces of information. Use the function to make three dictionaries representing different albums. Print each return value to show that the dictionaries are storing the album information correctly.
Add an optional parameter to `make_album()` that allows you to store the number of tracks on an album. If the calling line includes a value for the number of tracks, add that value to the album's dictionary. Make at least one new function call that includes the number of tracks on an album.
12. Create a list containing the names of magicians and pass it to a function called `show_magicians()`, which prints the name of each magician in the list.