LAB ASSIGNMENT 9

U24CS076

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

def count\_vowels(string):

vowels = 'aeiouAEIOU'

count = 0

for char in string:

if char in vowels:

count += 1

return count

count\_vowels('Hello World')

count\_vowels('Python Programming')

OUTPUT:

3

4

#. Python Program to reverse a given number.

def reverse\_number(n):

    return int(str(n)[::-1])

print(reverse\_number(12345))

OUTPUT:

54321

# Python Program to count the number of digits in a number

def count\_digits(n):

    return len(str(n))

print(count\_digits(12345))

OUTPUT

5

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

def factorial\_rec(n):

     if n == 0:

         return 1

     else:

         return n \* factorial\_rec(n-1)

def factorial(n):

    fact = 1

    for i in range(1, n+1):

        fact \*= i

    return fact

print(factorial\_rec(5))

print(factorial(5))

OUTPUT:

**120**

**120**

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

def power(base, exp):

    if exp == 0:

        return 1

    else:

        return base \* power(base, exp-1)

print(power(120, 5))

**OUTPUT**

24883200000

#Python Program to find the sum of series: 1 + 1/2 + 1/3 + ….. + 1/N

def sum\_of\_series(n):

    sum = 0

    for i in range(1, n+1):

        sum += 1/i

    return sum

print(sum\_of\_series(5))

OUTPUT

2.283333333333333

# Define a function

#that accepts roll number and returns whether the student is present or absent.

def check\_presence(roll):

    if roll in [1, 2, 3, 4, 5]:

        return "Present"

    else:

        return "Absent"

print(check\_presence(3))

print(check\_presence(6))

OUTPUT:

Present

Absent

#Define a function in python that accepts 3 values and returns the maximum of three

#numbers.

def max\_of\_three(a, b, c):

    return max(a, b, c)

print(max\_of\_three(1, 2, 3))

print(max\_of\_three(-8, 2, 1))

print(max\_of\_three(1, 4, 2))

OUTPUT:

3

2

4

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

import math

def area\_of\_circle(radius):

    return math.pi \* radius \* radius

print(area\_of\_circle(3))

OUTPUT:

28.274333882308138

# . 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

def ticket\_price(age):

    if age < 3:

        return 0

    elif age >= 3 and age <= 12:

        return 10

    else:

        return 15

a=int(input("Enter age: "))

while 1:

    if a==-1 or a=="":

        break

    print(ticket\_price(a))

    a=input("Enter age: ")

OUTPUT:

Enter age: 3

10

#  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.

def make\_album(artist, album):

    album\_dict = {"artist": artist, "album": album}

    return album\_dict

def make\_album\_tracks(artist, album, tracks=0):

    album\_dict = {"artist": artist, "album": album}

    if tracks:

        album\_dict["tracks"] = tracks

    return album\_dict

# Test the function with three different albums

print(make\_album("Taylor Swift", "Red"))

print(make\_album("Arijit Singh", "Tum Hi Ho"))

print(make\_album\_tracks("Ed Sheeran", "Shape of You", 12))

OUTPUT:

{'artist': 'Taylor Swift', 'album': 'Red'}

{'artist': 'Arijit Singh', 'album': 'Tum Hi Ho'}

{'artist': 'Ed Sheeran', 'album': 'Shape of You', 'tracks': 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.

def show\_magicians(magicians):

    for magician in magicians:

        print(magician)

magicians = ['m1', 'm2', 'm3', 'm4', 'm5']

show\_magicians(magicians)

OUTPUT:

m1

m2

m3

m4

m5