**Artificial Intelligence with Python**

**ASSIGNMENT\_01**

1. Take list of elements from the user and find the square root of each number in the list and store in it another list and print that list.

Program:

import math

user\_list = input("Enter the values to List: ").split()

num\_list = [float(num) for num in user\_list]

new\_list = [math.sqrt(num) for num in num\_list]

print("Square roots:", new\_list)

Output:

Enter the values to List: 9 16 25 36 100

Square roots: [3.0, 4.0, 5.0, 6.0, 10.0]

1. Write a function which prints all the numbers divisible by 3 and 5

Program:

def func(a, b):

for num in range(a, b):

if num % 3 == 0 and num % 5 == 0:

print(num)

func(1, 100)

Output:

15

30

45

60

75

90

1. Write a program to check whether a given letter is vowel or consonant

Program:

import re

pattern = r"^[aeiouAEIOU]$"

letter = input("Enter the Letter that you want to Check Vowel Or Consonant :")

if re.match(pattern,letter):

print(letter,"is a Vowel")

else:

print(letter,"is Consonant")

Output:

Enter the Letter that you want to Check Vowel Or Consonant :A

A is a Vowel

1. Calculate the distance between any two characters given by user

(Example distance between “a” and “d” is 3)

Program:

def distance(char1, char2):

d = abs(ord(char1) - ord(char2))

return d

char1 = input("Enter the first character: ")

char2 = input("Enter the second character: ")

d = distance(char1, char2)

print("The distance between", char1, "and", char2, "is", d)

Output:

Enter the first character: a

Enter the second character: d

The distance between a and d is 3

1. Write a function which returns the number of vowels present in the given string

Program:

def count\_vowels(string):

vowels = "aeiouAEIOU"

count = 0

for char in string:

if char in vowels:

count += 1

return count

string = input("Enter a string: ")

count = count\_vowels(string)

print("Number of vowels:", count)

Output:

Enter a string: Sk. Zahir Hossain

Number of vowels: 5

1. Print all the alphabets by using loop and ascii code

Program:

print("Lowercase Alphabets:")

for i in range(ord('a'), ord('z') + 1):

print(chr(i), end=" ")

print()

print("Uppercase Alphabets:")

for i in range(ord('A'), ord('Z') + 1):

print(chr(i), end=" ")

print()

Output:

Lowercase Alphabets:

a b c d e f g h i j k l m n o p q r s t u v w x y z

Uppercase Alphabets:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

1. Write a program find the sum of all the even numbers of the list

Program:

l = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

even\_count = 0

odd\_count = 0

for i in l:

if i%2==0:

even\_count+=1

else :

odd\_count+=1

print("Number of Even number =",even\_count)

print("Number of Odd number =",odd\_count)

Output:

Number of Even number = 5

Number of Odd number = 5

1. Write a program for print the squares of all the numbers, except for factors of 3

Program:

def factors(n):

for num in range(1, n + 1):

if num % 3 == 0:

continue

print(num \*\* 2)

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

factors(n)

Output:

Enter a number: 3

1

4

1. Take 2 strings from user and then replace all the A’s with a’s and then concatenate the 2 strings and print

Program:

def replace\_strings(str1, str2):

str1 = str1.replace('A', 'a')

str2 = str2.replace('A', 'a')

concatenated\_string = str1 + str2

print(concatenated\_string)

string1 = input("Enter the first string: ")

string2 = input("Enter the second string: ")

replace\_strings(string1, string2)

Output:

Enter the first string: ZAHIR

Enter the second string: SAKIP

ZaHIRSaKIP

1. write a program to get a list of odd number from the list of numbers given by user (use list comprehension)

Program:

def get\_odd(numbers):

odd\_numbers = [num for num in numbers if num % 2 != 0]

return odd\_numbers

n = input("Enter the numbers for the List: ")

number\_list = list(map(int, n.split()))

odd\_list = get\_odd(number\_list)

print("Odd numbers:", odd\_list)

Output:

Enter the numbers for the List: 1 2 3 4 5 6 7 8 9 10

Odd numbers: [1, 3, 5, 7, 9]

1. write a program to print lower when you have upper letter in string and vice versa

(if your input is “aBcD” your output should be “AbCd”)

Program:

def swap(string):

swapped\_string = ''

for char in string:

if char.isupper():

swapped\_string += char.lower()

else:

swapped\_string += char.upper()

return swapped\_string

s = input("Enter a string: ")

result = swap(s)

print("Swapped case string:", result)

Output:

Enter a string: Zahir

Swapped case string: zAHIR

## Screenshots

