Assignment No. 02

Python Programs

**Program No 1**

**Q1**. Write a program to Print First 10 natural numbers.

**Codes:**

for i in range(1, 11):

print(i)

**Program No. 02**

**Q2**. Write a program to Calculate the sum of all numbers from 1 to a given number.

**Codes:**

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

sum\_numbers = sum(range(1, n+1))

print("Sum of numbers from 1 to " + str(n) + " = " + str(sum\_numbers))

**Program No. 03**

**Q3**. Write a program to print multiplication table of a given number.

**Codes:**

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

for i in range(1, 11):

print(f"{num} x {i} = {num\*i}")

**Program No. 04**

**Q4**. Write a program to display only those numbers from a list (numbers = [12, 75, 150,

180, 145, 525, 50]) that satisfy the following conditions:

The number must be divisible by five

If the number is greater than 150, then skip it and move to the next number

If the number is greater than 500, then stop the loop

**Codes:**

numbers = [12, 75, 150, 180, 145, 525, 50]

for num in numbers:

if num % 5 == 0:

if num > 500:

break

elif num > 150:

continue

print(num)

**Program No. 05**

**Q5**. Write a program to Print list in reverse order using a loop.

**Codes:**

numbers = [12, 75, 150, 180, 145, 525, 50]

for i in range(len(numbers)-1, -1, -1):

print(numbers[i])

**Program No. 06**

**Q6**. Write a program to display all prime numbers within a range.

**Codes:**

start = int(input("Enter the starting number: "))

end = int(input("Enter the ending number: "))

def is\_prime(num):

if num < 2:

return False

for i in range(2, int(num\*\*0.5) + 1):

if num % i == 0:

return False

return True

print(f"Prime numbers between {start} and {end}:")

for i in range(start, end+1):

if is\_prime(i):

print(i)

**Program No. 07**

**Q7**. Write a program to Find the factorial of a given number.

**Codes:**

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

factorial = 1

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

factorial \*= i

print(f"The factorial of {num} is: {factorial}")

**Program No. 08**

**Q8**. Write a program to find the sum of the series up to n terms.

**Codes:**

n = int(input("Enter the number of terms: "))

sum\_series = sum(range(1, n+1))

print(f"The sum of the series up to {n} terms is: {sum\_series}")

**Program No. 09**

**Q9**. Write a Python program to guess a number between 1 and 9.

Note: User is prompted to enter a guess. If the user guesses wrong then the prompt appears again until the guess is correct, on successful guess, user will get a "Well guessed!" message, and the program will exit.

**Codes:**

import random

number\_to\_guess = random.randint(1, 9)

while True:

guess = int(input("Guess the number between 1 and 9: "))

if guess == number\_to\_guess:

print("Well guessed!")

break

else:

print("Try again.")

**Program No. 10**

**Q10**. Write a Python program that accepts a word from the user and reverses it.

**Codes:**

word = input("Enter a word: ")

reversed\_word = word[::-1]

print(f"Reversed word: {reversed\_word}")

**Program No. 11**

**Q11**. Write a Python program that accepts a string and calculates the number of digits and letters. Expected Output: Letters 6 , Digits 2

**Codes:**

input\_string = input("Enter a string: ")

letters\_count = sum(c.isalpha() for c in input\_string)

digits\_count = sum(c.isdigit() for c in input\_string)

print(f"Letters {letters\_count}")

print(f"Digits {digits\_count}")

**Program No. 12**

**Q12**. Write a program to calculate the length of string provide input by user (without using len)

**Codes:**

input\_string = input("Enter a string: ")

length = 0

for \_ in input\_string:

length += 1

print(f"Length of the string: {length}")

**Program No. 13**

**Q13**. Write a Python program to print the number of vowels and consonant in your full

name.

**Codes:**

full\_name = input("Enter your full name: ").lower()

vowels\_count = sum(c in 'aeiou' for c in full\_name)

consonants\_count = sum(c.isalpha() and c not in 'aeiou' for c in full\_name)

print(f"Vowels: {vowels\_count}")

print(f"Consonants: {consonants\_count}")

**Program No. 14**

**Q14**. Write a Python program that generates list of values. The values must be taken from user as input.

**Codes:**

num\_values = int(input("Enter the number of values: "))

user\_values = [input(f"Enter value {i + 1}: ") for i in range(num\_values)]

print("User values:", user\_values)

**Program No. 15**

**Q15**. Write a Python program to copy elements from one list to another.

**Codes:**

original\_list = [1, 2, 3, 4, 5]

new\_list = []

for element in original\_list:

new\_list.append(element)

print("Original List:", original\_list)

print("Copied List:", new\_list)

**Program No. 16**

**Q16**. Write a python program to select the maximum value from list (without using maximum function).

**Codes:**

numbers = [3, 7, 1, 9, 4, 5]

max\_value = numbers[0]

for num in numbers:

if num > max\_value:

max\_value = num

print("Maximum value:", max\_value)

**Program No. 17**

**Q17**. Write a Python program to count the number of even and odd numbers from a series of numbers. Sample numbers: numbers = (1, 2, 3, 4, 5, 6, 7, 8, 9)

**Codes:**

numbers = (1, 2, 3, 4, 5, 6, 7, 8, 9)

even\_count = sum(num % 2 == 0 for num in numbers)

odd\_count = sum(num % 2 != 0 for num in numbers)

print("Even numbers:", even\_count)

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

**Program No. 18**

**Q18**. Find the sum of squares of each element of the list using for loop. numbers = [3, 5, 23, 6, 5, 1, 2, 9, 8

**Codes:**

numbers = [3, 5, 23, 6, 5, 1, 2, 9, 8]

sum\_squares = sum(num\*\*2 for num in numbers)

print("Sum of squares:", sum\_squares)

**Program No 19:**

**Q19**. From given list: gadgets = ["Mobile", "Laptop", 100, "Camera", 310.28, "Speakers", 27.00, "Television", 1000, "Laptop Case", "Camera Lens"]

a) Create separate lists of strings and numbers.

b) Sort the strings list in ascending order

c) Sort the strings list in descending order

d) Sort the number list from lowest to highest e) Sort the number list from highest to lowest

**Codes:**

gadgets = ["Mobile", "Laptop", 100, "Camera", 310.28, "Speakers", 27.00, "Television", 1000, "Laptop Case", "Camera Lens"]

strings\_list = [item for item in gadgets if isinstance(item, str)]

numbers\_list = [item for item in gadgets if isinstance(item, (int, float))]

# Sort strings in ascending and descending order

strings\_list\_asc = sorted(strings\_list)

strings\_list\_desc = sorted(strings\_list, reverse=True)

# Sort numbers from lowest to highest and highest to lowest

numbers\_list\_asc = sorted(numbers\_list)

numbers\_list\_desc = sorted(numbers\_list, reverse=True)

print("Strings List (Ascending):", strings\_list\_asc)

print("Strings List (Descending):", strings\_list\_desc)

print("Numbers List (Ascending):", numbers\_list\_asc)

print("Numbers List (Descending):", numbers\_list\_desc)