Assignment (Loop)

1. Print the first 10 natural numbers using for loop

for num in range(1, 11):

print(num)

1. Python program to check if the given string is a palindrome

def is\_palindrome(s):

s = s.replace(" ", "").lower()

return s == s[::-1]

string = input("Enter a string: ")

if is\_palindrome(string):

print(f"'{string}' is a palindrome.")

else:

print(f"'{string}' is not a palindrome.")

1. Python program to check if a given number is an Armstrong number

def is\_armstrong(num):

digits = str(num)

num\_digits = len(digits)

sum\_of\_powers = sum(int(digit) \*\* num\_digits for digit in digits)

return num == sum\_of\_powers

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

if is\_armstrong(number):

print(f"{number} is an Armstrong number.")

else:

print(f"{number} is not an Armstrong number.")

4. Python program to get the Fibonacci series between 0 to 50

def fibonacci\_series(limit):

a, b = 0, 1

while a <= limit:

print(a, end=" ")

a, b = b, a + b

print("Fibonacci series between 0 and 50:")

fibonacci\_series(50)

5. Python program to check the validity of password input by users

import re

def is\_valid\_password(password):

pattern = re.compile(r'^(?=.\*[a-z])(?=.\*[A-Z])(?=.\*\d)(?=.\*[@$!%\*?&])[A-Za-z\d@$!%\*?&]{8,}$')

return bool(pattern.match(password))

password = input("Enter your password: ")

if is\_valid\_password(password):

print("Password is valid.")

else:

print("Password is invalid. It must be at least 8 characters long, contain both uppercase and lowercase letters, include at least one digit, and have at least one special character.")