LAB 7 FOR LOOP

1. Print the first 10 natural numbers using a for loop

for i in range(1, 11):

    print(i)

Output

1

2

3

4

5

6

7

8

9

10

def is\_palindrome(s):

    s = s.lower().replace(" ", "")

    for i in range(len(s) // 2):

        if s[i] != s[len(s) - i - 1]:

            return False

    return True

string = input("Enter a string: ")

if is\_palindrome(string):

    print("The string is a palindrome.")

else:

    print("The string is not a palindrome.")

Output

Enter a string: 445544

The string is a palindrome.

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

def is\_armstrong(number):

    num\_str = str(number)

    num\_digits = len(num\_str)

    sum\_of\_digits = 0

    for digit in num\_str:

        sum\_of\_digits += int(digit) \*\* num\_digits

    return sum\_of\_digits == number

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

if is\_armstrong(num):

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

else:

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

Output

Enter a number: 3453

3453 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

    for \_ in range(limit):

        print(a, end=" ")

        a, b = b, a + b

        if a > 50:

            break

fibonacci\_series(10)

Output

0 1 1 2 3 5 8 13 21 34

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

import re

def check\_password\_validity(password):

    if len(password) < 8:

        return "Password must be at least 8 characters long."

    has\_upper = has\_lower = has\_digit = False

    for char in password:

        if char.isupper():

            has\_upper = True

        elif char.islower():

            has\_lower = True

        elif char.isdigit():

            has\_digit = True

    if has\_upper and has\_lower and has\_digit:

        return "Password is valid."

    else:

        return "Password must contain at least one uppercase letter, one lowercase letter, and one digit."

password = input("Enter your password: ")

print(check\_password\_validity(password))

Output

Enter your password: 54565665

Password must contain at least one uppercase letter, one lowercase letter, and one digit.