Practical No 10

Aim

Using a function, write a Python program to analyze whether the input number is prime or not.

Apparatus / Software Required

- Python Interpreter (Python 3.14.2)

Theory

In this practical, we develop a Python program to determine whether a given number is **prime or not**.

A **prime number** is a number that has exactly **two factors**:

- 1
- The number itself

Examples:

- 2, 3, 5, 7 → Prime
- 4, 6, 8 → Not Prime

Working Concept of the Program

The program takes an integer input from the user and checks how many numbers divide it exactly.

- We use a **loop** to check all numbers from `1` to `num`
- If `num % i == 0`, then `i` is a factor of `num`
- We count such factors using a variable `count`
- At the end:
  - If `count == 2` → Prime number
  - If `count > 2` → Not prime

⚠️ **Note:**

Your program checks: if count > 2:

which is correct because non-prime numbers have more than 2 factors.

Algorithm

1. Start
2. Input a number `num` from the user
3. Initialize:
    - `count = 0`
    - `i = 1`
4. Repeat while `i <= num`:
    - If `num % i == 0`, then:
        - Increment `count` by 1
    - Increment `i` by 1
5. After loop ends:
    - If `count > 2`:
        - Print "Not Prime Number"
    - Else:
        - Print "Prime Number"
6. Stop

Program Code

Output

Conclusion