Task 5: Create a Python Program to Check for Prime Numbers

DESCRIPTION:

- This is the description of Task-5 of my python internship at Happieloop.
- Here, the task is to check for a **Prime Number**.
- I have created a file **task5.py** and developed python code according to the requirements to implement the task.
- The purpose of the program that I have developed is to check whether the given number i.e., the user defined input is a prime number or not a prime number.
- I have developed a function named **is_prime** and have implemented the required code in it.
- The condition for a number to be a prime number is that the number be divided by **number and itself** only.
- That means it should have only 2 factors (1, number).
- So I have written an **if** condition whether the given number is divisible by any other number than the given number.
- If the if condition fails then the Boolean condition is **True** or else the condition is **False**.
- Based on the Boolean condition obtained the number will be declared as a prime number or not.
- So the corresponding output is displayed in the console window.

- By seeing the implementation of the code, the accuracy of determining the prime number can be verified too by giving various inputs.
- Below will be the implementation and example inputs to determine the output as well as the accuracy of the code.

CODE:

```
def is_prime(n):
    if n <= 1:
        return False
    if n == 2:
        return True
    if n % 2 == 0:
        return False
    for i in range(3, int(n**0.5) + 1, 2):
        if n % i == 0:
            return False
    return True

num = int(input("Enter a number: "))
if is_prime(num):
    print(f"{num} is a prime number.")
else:
    print(f"{num} is not a prime number.")
```

- Now let me show some of the sample inputs and corresponding outputs for the above code.

OUTPUTS:

Enter a number: 55
55 is not a prime number.

Enter a number: 7
7 is a prime number.

Enter a number: 13
13 is a prime number.

Enter a number: 797
797 is a prime number.

Enter a number: 85798
85798 is not a prime number.