

9. Write a program to check a number is a prime number or not using recursion.

Code:

```
def is_prime_recursive(n, i=2):  
    if n <= 2:  
        return n == 2  
    if n % i == 0:  
        return False  
    if i * i > n:  
        return True  
  
    return is_prime_recursive(n, i + 1)  
  
number = int(input("Enter a number: "))  
  
if is_prime_recursive(number):  
    print(f"{number} is a prime number")  
else:  
    print(f"{number} is not a prime number")
```

Output:

```
Enter a number: 15  
15 is not a prime number
```

```
Enter a number: 13  
13 is a prime number
```

Time Complexity:

- $T(n) = O(\sqrt{n})$