```
print("kavinkumar_k_k148698")
```

```
kavinkumar_k_k148698
```

1. Even or Odd Checker: Write a program that prompts the user to enter a number and then determines if the number is even or odd.

```
num = int(input("Enter a number: "))
if (num % 2) == 0:
   print("{0} is Even".format(num))
else:
   print("{0} is Odd".format(num))
```

```
Enter a number: 5
5 is Odd
```

```
num = float(input("Enter a number: "))
if num > 0:
   print("Positive number")
elif num == 0:
   print("Zero")
else:
   print("Negative number")
```

```
Enter a number: 0.1
Positive number
```

2. Sum of Natural Numbers: Write a program that calculates and prints the sum of the first N natural numbers (positive integers) using a loop. The user should be able to specify the value of N.

```
n = int(input("enter a number: "))
i = 1
sum = 0
while (i <= n):
    sum = sum + i
    i = i + 1
print("The sum is: ", sum)
```

```
enter a number: 5
The sum is:  15
```

3. Multiplication Table: Write a program that prints the multiplication table of a given number entered by the user. Utilize a loop to generate the table.

```
multiplier = int(input("Enter the multiplier: "))
start = 1
end = int(input("Enter the range end: "))

while start <= end:
    result = start * multiplier
    print(f"{start} x {multiplier} = {result}")
    start += 1
```

```
Enter the multiplier: 4
Enter the range end: 10
1 x 4 = 4
2 x 4 = 8
3 x 4 = 12
4 x 4 = 16
5 x 4 = 20
6 x 4 = 24
7 x 4 = 28
8 x 4 = 32
9 x 4 = 36
10 x 4 = 40
```

4. Factorial Calculator: Write a function that calculates the factorial of a number entered by the user. The factorial of a non-negative integer is the product of all positive integers less than or equal to that number. Call this function from the main program and print the result.

```
def factorial(n):

    return 1 if (n==1 or n==0) else n * factorial(n - 1)

num = 5
print("Factorial of",num,"is",factorial(num))
```

```
Factorial of 5 is 120
```

```
def factorial(n):
        if n == 0:
          return 1
        else:
          return n * factorial(n - 1)
n = int(input("Input a number to compute the factorial: "))

print(factorial(n))
```

```
Input a number to compute the factorial: 5
120
```

5. Prime Number Checker: Write a function that checks if a given number is a prime number. A prime number is a natural number greater than 1 that has no positive divisors other than 1 and itself. Use this function in the main program to prompt the user for a number and print whether it's prime or not.

```
num = 11
if num > 1:
  for i in range(2, (num//2)+1):
      if (num % i) == 0:
          print(num, "is not a prime number")
          break
  else:
        print(num, "is a prime number")
else:
    print(num, "is not a prime number")
```

```
11 is a prime number
```

6. Fibonacci Sequence Generator: Write a function that generates and returns the first N numbers in the Fibonacci sequence. The Fibonacci sequence is a series of numbers where each number is the sum of the two preceding numbers, starting from 0 and 1. Call this function in the main program and print the generated sequence.

```
def fibonacci():
    x, y = 0, 1
    while True:
        yield x
        x, y = y, x + y

# Accept input from the user
n = int(input("Input the number of Fibonacci numbers you want to generate? "))

print("Number of first ",n,"Fibonacci numbers:")
fib = fibonacci()
for _ in range(n):
    print(next(fib),end=" ")
```

```
Input the number of Fibonacci numbers you want to generate? 10
Number of first  10 Fibonacci numbers:
0 1 1 2 3 5 8 13 21 34
```

7. Palindrome Checker: Write a function that checks if a given string is a palindrome. A palindrome is a word or phrase that reads the same backward as forward (e.g., "racecar", "madam"). Use this function in the main program to prompt the user for a string and print whether it's a palindrome or not.

```
def isPalindrome(string):
  if(string== string[::-1]):
    return"The string is a palindrome."
  else:
    return"The string is not a palindrome."
string=input ("Enter string: ")
print(isPalindrome(string))
```

```
Enter string: radar
The string is a palindrome.
```