Assignment - 12 More on loops

1. Write a python script to reverse a number.

```
n=int(input("Enter a number:"))
reverse=0
while n>0:
    last_digit=n%10
    reverse=(reverse*10)+last_digit
    n=n//10
print(reverse)
```

Output:-

```
Enter a number:456
654
```

2. Write a python script to check whether a given number is Prime or not.

```
number = int(input("Enter a number: "))
if number < 2:
    is_prime = False
else:
    is_prime = True
    for i in range(2, int(number ** 0.5) + 1):
        if number % i == 0:
            is_prime = False
            break
if is_prime:
    print(number, "is a prime number")
else:
    print(number, "is not a prime number")
```

Output:-

Enter a number: 37

37 is a prime number

3. Write a python script to print all Prime numbers under 100.

```
print("Prime numbers under 100:")
for number in range(2, 100):
   is_prime = True
   for i in range(2, int(number ** 0.5) + 1):
      if number % i == 0:
         is_prime = False
         break
   if is_prime:
      print(number,end=' ')
```

Output:-

Prime numbers under 100:

2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97

4. Write a python script to print all Prime numbers between two given numbers (both values inclusive)

```
start = int(input("Enter the starting number: "))
end = int(input("Enter the ending number: "))
print(f"Prime numbers between {start} and {end}:")
for number in range(start, end+1):
   if number < 2:
      continue
   is_prime = True
   for i in range(2, int(number ** 0.5) + 1):
      if number % i == 0:
```

```
            is_prime = False
            break
    if is_prime:
        print(number,end=' ')
```

Output:-

```
Enter the starting number: 45
Enter the ending number: 100
Prime numbers between 45 and 100:
47 53 59 61 67 71 73 79 83 89 97
```

5. Write a python script to find next prime number of a given number.

```
def is_prime(num):
    if num < 2:
        return False
    for i in range(2, int(num ** 0.5) + 1):
        if num % i == 0:
            return False
    return True
number = int(input("Enter a number: "))
next_prime = number + 1
while not is_prime(next_prime):
    next_prime += 1
print("The next prime number after", number, "is:", next_prime)
```

Output:-

```
Enter a number: 45
The next prime number after 45 is: 47
```

6. Write a python script to print first N prime numbers.

```
n=int(input("Enter a number:"))
for number in range(2,n):
   is_prime = True
   for i in range(2, int(number ** 0.5) + 1):
      if number % i == 0:
         is_prime = False
         break
   if is_prime:
      print(number,end=' ')
```

Output:-

```
Enter a number:50
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47
```

7. Write a python script to check whether a given pair of numbers are co-Prime numbers or not.

```
number1 = int(input("Enter the first number: "))
number2 = int(input("Enter the second number: "))
while number2 != 0:
   number1, number2 = number2, number1 % number2
if number1 == 1:
   print("The numbers are co-prime")
else:
   print("The numbers are not co-prime")
```

Output:-

```
Enter the first number: 5
Enter the second number: 7
The numbers are co-prime
```

8. Write a python script to print first N terms of a Fibonacci series.

```
 n = int(input("Enter the value of N: "))
term1, term2 = 0, 1
print("Fibonacci series:")
print(term1,end=' ')
for _ in range(n - 1):
   print(term2,end=' ')
   term1, term2 = term2, term1 + term2
```

Output:-

```
Enter the value of N: 10
Fibonacci series:
0 1 1 2 3 5 8 13 21 34
```

9. Write a python script to calculate LCM of two numbers.

```
number1 = int(input("Enter the first number: "))
number2 = int(input("Enter the second number: "))
max_num = max(number1, number2)
while True:
   if max_num % number1 == 0 and max_num % number2 == 0:
      lcm = max_num
      break
   max_num += 1
print("The LCM of", number1, "and", number2, "is:", lcm)
```

Output:-

```
Enter the first number: 5
Enter the second number: 10
The LCM of 5 and 10 is: 10
```

10. Write a python script to calculate HCF of two numbers.

```
number1 = int(input("Enter the first number: "))
number2 = int(input("Enter the second number: "))
min_num = min(number1, number2)
hcf = 1
for i in range(2, min_num + 1):
    if number1 % i == 0 and number2 % i == 0:
        hcf = i
print("The HCF of", number1, "and", number2, "is:", hcf)
```

Output:-

```
Enter the first number: 8
Enter the second number: 12
The HCF of 8 and 12 is: 4
```