

# ASSIGNMENT:-01

1] Check the given number is odd or even.

```
In [3]: def check_odd_even(number):  
        if number%2==0:  
            return "even"  
        else:  
            return "odd"  
num=int(input("Enter the number:"))  
print(f"The number {num} is {check_odd_even(num)}.")
```

Enter the number: 3

The number 3 is odd.

2] Count the total number of digits in a number.

```
In [4]: def count_digit(number):  
        return len(str(abs(number)))  
num=int(input("Enter the number: "))  
print(f"The number {num} is having {count_digit(num)} digits in it.")
```

Enter the number: 123465

The number 123465 is having 6 digits in it.

3] Write a Python program to print the reverse number pattern using a for loop  
5 4 3 2 1 4 3 2 1 3 2 1 2  
1 1

```
In [7]: def reverse_number_pattern(n):  
        for i in range (n, 0, -1):  
            for j in range (i, 0, -1):  
                print(j, end=" ")  
            print()  
  
num=int(input("enter the number:"))  
reverse_number_pattern(num)
```

enter the number: 6

```
6 5 4 3 2 1  
5 4 3 2 1  
4 3 2 1  
3 2 1  
2 1  
1
```

4]Print all prime numbers within a range.

```
In [6]: def print_primes(start, end):
        for num in range (start, end+1):
            if num>1:

                for i in range (2, int(num**0.5)+1):
                    if (num%i)==0:
                        break
                    else:
                        print(num,end="")

        print()

        start_range = int(input("enter the start of the range"))
        end_range = int(input("enter the end of the range"))
        print(f"Prime numbers between {start_range} and{end_range}")
        print_primes(start_range, end_range)
```

enter the start of the range 2  
enter the end of the range 7

Prime numbers between 2 and7  
57

5]Find the factorial of a given number.

```
In [10]: def factorial(n):
        if n==0 or n==1:
            return 1
        else:
            return n * factorial(n-1)
        num= int(input("enter the number:"))
        print(f"The factorial of {num} is {factorial(num)}.")
```

enter the number: 0

The factorial of 0 is 1.

6]Program to check if number is palindrome.

```
In [17]: def is_palindrome(number):
        return str(number) == str(number)[::-1]

        num= int(input("enter the number:"))
        if is_palindrome(num):
            print(f"the number {num} is palindrome")
        else:
            print(f"the number {num} is not palindrome")
```

enter the number: 121

the number 121 is palindrome

7]Program to Check Armstrong Number.

```
In [18]: def is_armstrong(number):
        num_str = str(number)
        power = len(num_str)
        total = sum(int(digit) ** power for digit in num_str)
```

```
    return total == number
```

```
num = int(input("Enter a number: "))
if is_armstrong(num):
    print(f"The number {num} is an Armstrong number.")
else:
    print(f"The number {num} is not an Armstrong number.")
```

Enter a number: 153

The number 153 is an Armstrong number.

8]Find Maximum of three numbers.

```
In [21]: def find_maximum(a, b, c):
        return max(a, b, c)

num1 = int(input("Enter first number: "))
num2 = int(input("Enter second number: "))
num3 = int(input("Enter third number: "))
print(f"The maximum number among {num1}, {num2}, and {num3} is {find_maximu
```

Enter first number: 1  
Enter second number: 6  
Enter third number: 4

The maximum number among 1, 6, and 4 is 6.

9]Find the Sum of digits.

```
In [22]: def sum_of_digits(number):
        return sum(int(digit) for digit in str(abs(number)))

num = int(input("Enter a number: "))
print(f"The sum of digits in {num} is {sum_of_digits(num)}.")
```

Enter a number: 12312

The sum of digits in 12312 is 9.

10]Python Program to Print the Natural Numbers Summation Pattern Given a natural number n, the task is to write a Python program to first find the sum of first n natural numbers and then print each step as a pattern. Input: 5 Output: 1 = 1 1 + 2 = 3 1 + 2 + 3 = 6 1 + 2 + 3 + 4 = 10 1 + 2 + 3 + 4 + 5 = 15

```
In [23]: def summation_pattern(n):
        total = 0
        for i in range(1, n + 1):
            total += i
            print(" + ".join(map(str, range(1, i + 1))), "=", total)

num = int(input("Enter a natural number: "))
summation_pattern(num)
```

Enter a natural number: 5

```
1 = 1
1 + 2 = 3
1 + 2 + 3 = 6
1 + 2 + 3 + 4 = 10
1 + 2 + 3 + 4 + 5 = 15
```

In [ ]: