Assignment No.8

#WAP to calculate area of rectangle

```python
def area(length,breadth):
    return length * breadth
l=int(input("Enter area of rectangle:"))
b=int(input("Enter area of rectangle:"))
output=area(l,b)
print(f'Area of rectangle is:{output}')
```

#WAP to calculate area of circle

```python
def circle(pi,r):
    return pi*r**2
x=float(input("Enter area of circle (pi) :"))
y=int(input("Enter radius of circle :"))
result=circle(x,y)
print(f'Area of circle is : {result}')
```

#WAP to print following series using functions:1+2+3+4+.....+5

```python
def sum(n):
    if(n == 0):
        return 0
    else:
        return n + sum (n - 1)
n=int(input("Enter numbers:"))
print("Sum is:",sum(n))
```

#1!+2!+3!+.....+n!

```python
def fact(num):
    if(num == 0):
        return 1
    else:
```

```python
        return num*fact(num - 1)
num=int(input("Enter number : "))
print("Factorial is :",fact(num))
#1^2+2^2+3^3+......n^n
def num(total):
    if(total == 0):
        return 0
    else:
        return total ** total + num (total - 1)
total = int(input("Enter number :"))
print("Sum is:",num(total))
#sum of all odd numbers between 1 to n
def odd(num):
    total = 0
    for i in range(1,num+1):
        if(i%2!=0):
            total+=i
    return total
num=int(input("Enter number:"))
print("Sum of odd number is:",odd(num))
#WAP sum of all prime number between 1 to n
def sumOfPrime(num):
    sum = 0
    for num in range(2, num + 1):
        for i in range(2, (num // 2) + 1):
            if(num % i == 0):
                break
        else:
```

```python
        sum += num
    return sum
num = int(input("Enter number:"))
print("Sum of all prime numbers:",sumOfPrime(num))
```

#WAP to print fibonacci series using functions.

```python
def fibonacci(n):
    a, b = 0, 1
    print("Fibonacci Series:")
    for _ in range(n):
        print(a, end=' ')
        a, b = b, a + b
num = int(input("Enter number of terms: "))
fibonacci(num)
```

#WAP to find sum of digits of number

```python
def sumdigit(n):
    if(n == 0):
        return 0
    else:
        return (n % 10) + sumdigit (n // 10)
n=int(input("Enter numbers:"))
print("Sum is:",sumdigit(n))
```

```python
#WAP find reverse of a number
def reverse(num):
    rev=0
    while(num>0):
        d=num%10
        num=num//10
        rev=(rev*10)+d
```

```python
        return rev
num=int(input("Enter number:"))
print("Reverse number is:",reverse(num))
```

#WAP to check if entered number is palindrome or not

```python
def palindrome(num):
    a = num
    if (num > 0):
        d1 = num % 10
        num = num // 10
        d2 = num % 10
        num = num // 10
        d3 = num % 10
        rev = (d1 * 100) + (d2 * 10) + d3
        if a == rev:
            print("Number is palindrome")
        else:
            print("Number is not palindrome")
num = int(input("Enter number: "))
palindrome(num)
```

#WAP to check if entered year is leap year or not.

```python
def leap_year(year):
    if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
        return 1
    else:
        return 0
year = int(input("Enter a year: "))
if leap_year(year):
    print(f"{year} is a leap year.")
```

```python
else:
    print(f"{year} is not a leap year.")
```

#WAP to check if a given number is armstrong number or not.for each task create separate functions.Function to count the number of digits in a number

```python
def count_digits(num):
    count=0
    while(num>0):
        count+=1
        num=num//10
    return count
def armstrong_sum(num):
    power = count_digits(num)
    total = 0
    for digit in str(num):
        total += int(digit) ** power
    return total
def is_armstrong(num):
    return num == armstrong_sum(num)
number = int(input("Enter a number: "))
if is_armstrong(number):
    print(f"{number} is an Armstrong number.")
else:
    print(f"{number} is not an Armstrong number.")
```