Anushka Sharma
22203014

Lab Assignment 4
Open source programming Lab

Q1.

```
'''Program to print  whether a number is odd or even'''
n=int(input("Enter a number : "))
def check(n):
    if(n%2==0):
        print(n," is an even number.")
    else:
        print(n," is an odd number.")
check(n)
```

Output:

```
PS C:\Anushka> & "C:/Program
odd.py
Enter a number : 5
5  is an odd number.
PS C:\Anushka> & "C:/Program
odd.py
Enter a number : 6
6  is an even number.
PS C:\Anushka>
```

Q2.

```
'''Program to reverse a number'''
x=int(input("Enter a four digit number : "))
def reverse(x):
    rev=0
    while(x!=0):
        r=int(x%10)
        rev=rev*10+r
        x=int(x/10)
    print("The reversed number is : ",rev)
reverse(x)
```

Output:

```
PS C:\Anushka> & "C:/Program Files/P
reverse.py
Enter a four digit number : 1234
The reversed number is :  4321
PS C:\Anushka>
```

Q3.

```
'''Program to check if a number is prime or not'''
from prime import is_prime
def prime():
    x=int(input("Enter a number to check: "))
    if is_prime(x):
        print(x," is a prime number")
    else:
        print(x," is not a prime number")
```

Module is_prime

```
'''Program to check if a number is prime number or not'''
def is_prime(x):
    flag=0
    for i in range(2,x,1):
        if((x%i)==0):
            break
        else:
            flag=1
    if(flag==1):
        return true
    else:
        return false
```

Output:

```
PS C:\Anushka> & "C:/Program Files/Python312/python.
exe" c:/Anushka/project/checkprime.py
Enter a number to check if its is prime or not : 5
5  is a prime number.
```

Q4.

```
'''Program to find the square of a number'''
x=int(input("Enter a number : "))
def square(x):
    sq=x*x
    print("The square of ",x," is : ", sq)
square(x)
```

Output:

```
PS C:\Anushka> & "C:/Program F
exe" c:/Anushka/project/sq.py
Enter a number : 6
The square of  6  is :  36
PS C:\Anushka>
```

Q5.

```
'''Program to find the sum of odd numbers'''
n=int(input("Enter a number upto which the sum is to be calculated: "))
def sum(n):
    sum=0
    for i in range(1,n+1,2):
        sum=sum+i
    return sum
su=sum(n)
print("The sum of odd numbers is: ",su)
```

Output:

```
PS C:\Anushka> & "C:/Program Files/Python312/python.exe" c:
nushka/project/sum_odd.py
Enter a number upto which the sum is to be calculated: 5
The sum of odd numbers is:  9
PS C:\Anushka>
```

Q6.

```
'''Program to calculate the factorial of a number'''
from fact import fact
n=int(input("Enter a number to calculate its factorial: "))
fa=fact(n)
print("The factorial of ",n," is : ", fa)
```

Module:

```
'''Program to print the factorial of a number'''
def fact(n):
    fact=1
    if(n=0):
        return fact*1
    else:
        return n*fact(n-1)
```

Output:

```
PS C:\Anushka> & "C:/Program Files/Python312/python
exe" c:/Anushka/project/fact_cal.py
Enter a number whose factorial is to be printed: 3
The factorial of x is:  6
```

Q7.

```
'''Program to calculate the sum of numbers'''
n=int(input("Enter the number upto which the sum is to be printed: "))
def sum(n):
    if(n==0):
        return n+0
    else:
        return n+sum(n-1)
su=sum(n)
print("The sum of first ",n," numbers is: ",su)
```

Output:

```
PS C:\Anushka> & "C:/Program Files/Python312/python.
exe" c:/Anushka/project/sum.py
Enter the number upto which the sum is to be printed
: 3
The sum of first  3  numbers is:  6
PS C:\Anushka>
```

Q8.

```
'''Program to calculate the exponent of a base'''
base=int(input("Enter the base: "))
expo=int(input("Enter the exponent: "))
def power(b,e):
    if((e==0)or(b==0)):
        return 1
    else:
        return b*power(b,e-1)
po=power(base,expo)
print("Power(",base,",",expo,") :", po)
```

Output:

```
PS C:\Anushka> & "C:/Program Files
exe" c:/Anushka/project/power.py
Enter the base: 2
Enter the exponent: 3
Power( 2 , 3 ) : 8
PS C:\Anushka>
```

Q9.

```
'''Program to print the countdown of a number'''
x=int(input("Enter the number whose countdown needs to be printed: "))
def count(x):
    if(x==0):
        print(0)
    else:
        print(x)
        count(x-1)
count(x)
```

Output:

```
PS C:\Anushka> & "C:/Program Files/Python312/python.exe"
Enter the number whose countdown needs to be printed: 8
8
7
6
5
4
3
2
1
0
PS C:\Anushka>
```