 # 1.1 Implement a recursive function to calculate the factorial of a given number

```
def recur_factorial(n):
   if n == 1:
      return n
   else:
      return n*recur_factorial(n-1)
# take input from the user
num = int(input("Enter a number: "))
# check is the number is negative
if num < 0:
   print("Sorry, factorial does not exist for negative numbers")
elif num == 0:
   print("The factorial of 0 is 1")
else:
   print("The factorial of",num,"is",recur_factorial(num))
```

 # 1.2 Write a program that determines whether a year entered by the user is a leap year or not using ifelif-else statements.

```
year = 2023

# To get year (integer input) from the user

# year = int(input("Enter a year: "))

# divided by 100 means century year (ending with 00)

# century year divided by 400 is leap year

if (year % 400 == 0) and (year % 100 == 0):

    print("{0} is a leap year".format(year))

# not divided by 100 means not a century year

# year divided by 4 is a leap year

elif (year % 4 ==0) and (year % 100 != 0):

    print("{0} is a leap year".format(year))

# if not divided by both 400 (century year) and 4 (not century year)

# year is not leap year

else:

    print("{0} is not a leap year".format(year))
```