# Practical-7(a)

## Q. Program to calculate the GCD of two numbers using recursion.

## Code:-

```
//Harsh Bamotra AC-1216
//Program to calculate GCD of two numbers using recursion

#include <iostream>
using namespace std;

//defining function to calculate GCD
int recur_GCD(int n1 , int n2)
  {
        if(n1==0 || n2==0)                      //checking if one of the number is 0
                {
                        return 0;               //exception case
                }
        else if(n1==n2)                         //if n1 is equal to n2
                {
                        return n1;              // exit case
                }
        else if(n1>n2)                                          //checking if n1 is greater than n2
                {
                        return recur_GCD(n1-n2 , n2);
                }
        else                                                    //if n2 is greater than n1
                {
                        return recur_GCD(n1 , n2-n1);
                }
  }

int main()
  {
        cout << "***** Calculate GCD of two numbers *****" << endl;
        int n1 , n2;                                            //defining variables
        cout << "Enter the first number::";
        cin >> n1;                                              //taking first number
        cout << "Enter the second number::";
        cin >> n2;                                              //taking second number

        cout << "The GCD of the two number::" << recur_GCD(n1 , n2);        //printing the final result
        return 0;
  }
```

**Output:-**

```
C:\Users\harsh\Desktop>recur_GCD.exe
***** Calculate GCD of two numbers *****
Enter the first number::36
Enter the second number::60
The GCD of the two number::12
C:\Users\harsh\Desktop>recur_GCD.exe
***** Calculate GCD of two numbers *****
Enter the first number::30
Enter the second number::250
The GCD of the two number::10
C:\Users\harsh\Desktop>
```