

**ASSIGNMENT NO:1**

**DATE:19/08/2014**

**PROGRAM TITLE:Find the LCM & GCD of two numbers.**

**PROGRAM ALGORITHM:**

```
algo lcd,gcd()
{
    /*x and y are the two numbers*/
    input x
    input y
    if(x or y equal to zero)
    {
        print lcm is zero and gcd is the non zero number
    }
    for(i=1 to x*y)
    {
        if(x and y both divisible by i)
        {
            set gcd to i
        }
        if(lcm not calculated before and i divisible by both x and y)
        {
            set lcm to i
        }
    }
    print lcm and gcd
}
```

**PROGRAM CODE:**

```
/* C Program to Find Lowest Common Multiple and Greatest Common Divisor.
*/
#include <stdio.h>
#include <stdlib.h>
int main()
{
    int i,num1,num2,gcd,lcm,flag=0;

    /*Read inputs from the user*/
    printf("Enter the first number\n");
    scanf("%d",&num1);
    printf("Enter the second number\n");
    scanf("%d",&num2);

    /*Checking if one of the numbers is zero*/
    if(num1==0||num2==0)
    {
        printf("The LCM of the numbers is: 0 and the GCD is: %d\n",
(num1==0)?num2:num1);
        exit(0);
    }
    for(i=1;i<=(num1*num2);i++)
    {
        /*Condition for GCD*/
```

```

        if ((num1%i==0) && (num2%i==0))
        {
            gcd=i;
        }

        /*Condition for LCM and also checking that only the LOWEST
common multiple is taken*/
        if ((flag==0) && (i%num1==0) && (i%num2==0))
        {
            lcm=i;
            flag=1;
        }
    }
    printf("The LCM of the numbers is: %d and the GCD is:
%d\n",lcm,gcd);
    return 0;
}

```

## OUTPUT:

### Set 1:

Enter the first number

9

Enter the second number

26

The LCM of the numbers is: 234 and the GCD is: 1

### Set 2:

Enter the first number

2

Enter the second number

8

The LCM of the numbers is: 8 and the GCD is: 2

### Set 3:

Enter the first number

5

Enter the second number

0

The LCM of the numbers is: 0 and the GCD is: 5

## DISCUSSION:

The Program functions if both the inputs are integers. Both the LCM and GCD are calculated inside the same loop. The complexity of this program can be decreased further because the for loop runs to the multiple of the two inputs.