**Recursion**

**Question 1**

A class HiFact has been defined to find the HCF of two numbers using recursive technique. This HCF is used to find the LCM of the two numbers. Some members of the class are given below:

Class Name: HiFact

Data Members: int a, b, hcf.

HiFact(): contructor to assign initial values

void getdata(): to input values of 'a' and 'b'

void change(): to swap a and b if a>b

int rechcf(int): to find hcf using recursive technique

int fn\_lcm(int):to find lcm using 'a', 'b' and hcf

void results(): To invoke rechcf() and fn\_lcm() and to print lcm, hcf of the two numbers, 'a' and 'b'

import java.util.\*;

class HiFact

{Scanner sc=new Scanner(System.in);

int a,b,hcf;

HiFact()

{

a=0;

b=0;

hcf=0;

}

void getdata()

{

System.out.println("Enter two values");

a=sc.nextInt();

b=sc.nextInt();

}

void change()

{

int t;

if(a>b)

{ t=a;

a=b;

b=t;

}

}

void rechcf(int n)

{

if(n<=a)

{ if(a%n==0&&b%n==0)

hcf=n;

rechcf(n+1);

}

}

int fn\_lcm()

{ int lcm=(a\*b)/hcf;

return lcm;

}

void results()

{

rechcf(1);

System.out.println("The two numbers are"+ a+","+b );

System.out.println("The HCF is"+hcf+" The LCM is "+ fn\_lcm());

}

public static void main (String args[])

{

HiFact H=new HiFact();

H.getdata();

H.change();

H.results();

}

}

**Sample Input**

Enter two values

4

8

**Output**

The two numbers are 4 , 8

The HCF is 4

The LCM is 8

**Question 2**

Class name: Convert

Data Members: int n (integer whose digits are to be expressed in words)

Convert(): constructor to assign 0 to n

void inpnum(): to accept value of n

void extdigit(int): to extract digits of n using recursive technique

void num\_to\_words(int): to display digits of an integer in words

import java.util.\*;

class Convert

{ Scanner sc=new Scanner(System.in);

int n;

Convert()

{ n=0;

}

void inpnum()

{ System.out.println("Enter a number");

n=sc.nextInt();

extdigit(n);

}

void extdigit(int n)

{ if (n!=0)

{ int r;

r=n%10;

extdigit(n/10);

num\_to\_words(r);

}

}

void num\_to\_words(int n1)

{ if (n1==0)

System.out.print(" zero " );

if (n1==1)

System.out.print(" one " );

if (n1==2)

System.out.print(" two " );

if (n1==3)

System.out.print(" three " );

if (n1==4)

System.out.print(" four " );

if (n1==5)

System.out.print(" fife " );

if (n1==6)

System.out.print(" six " );

if (n1==7)

System.out.print(" seven " );

if (n1==8)

System.out.print(" eight " );

if (n1==9)

System.out.print(" nine " );

}

public static void main(String args[])

{ Convert C=new Convert();

C.inpnum();

}

}

Sample Input

1024

**Output**

One Zero Two Four