**3. Write a Java Program to determine whether a given matrix is a sparse matrix**

import java.util.\*;

public class SparseMatrix

{

public static void main(String[] args) {

int rows, cols, size, count = 0,i,j;

int a[][] = new int[10][10];

Scanner sc=new Scanner(System.in);

System.out.println("enter num of rows and column:");

rows=sc.nextInt();

cols=sc.nextInt();

System.out.println("Enter " +(rows\*cols)+ " Array Elements : ");

for(i=0; i<rows; i++)

{

for(j=0; j<cols; j++)

{

a[i][j] = sc.nextInt();

}

}

System.out.print("The Array is :\n");

for(i=0; i<rows; i++)

{

for(j=0; j<cols; j++)

{

System.out.print(a[i][j]+ " ");

}

System.out.println();

}

size = rows \* cols;

for( i = 0; i < rows; i++){

for( j = 0; j < cols; j++){

if(a[i][j] == 0)

count++;

}

}

if(count > (size/2))

System.out.println("Given matrix is a sparse matrix");

else

System.out.println("Given matrix is not a sparse matrix");

}

}

