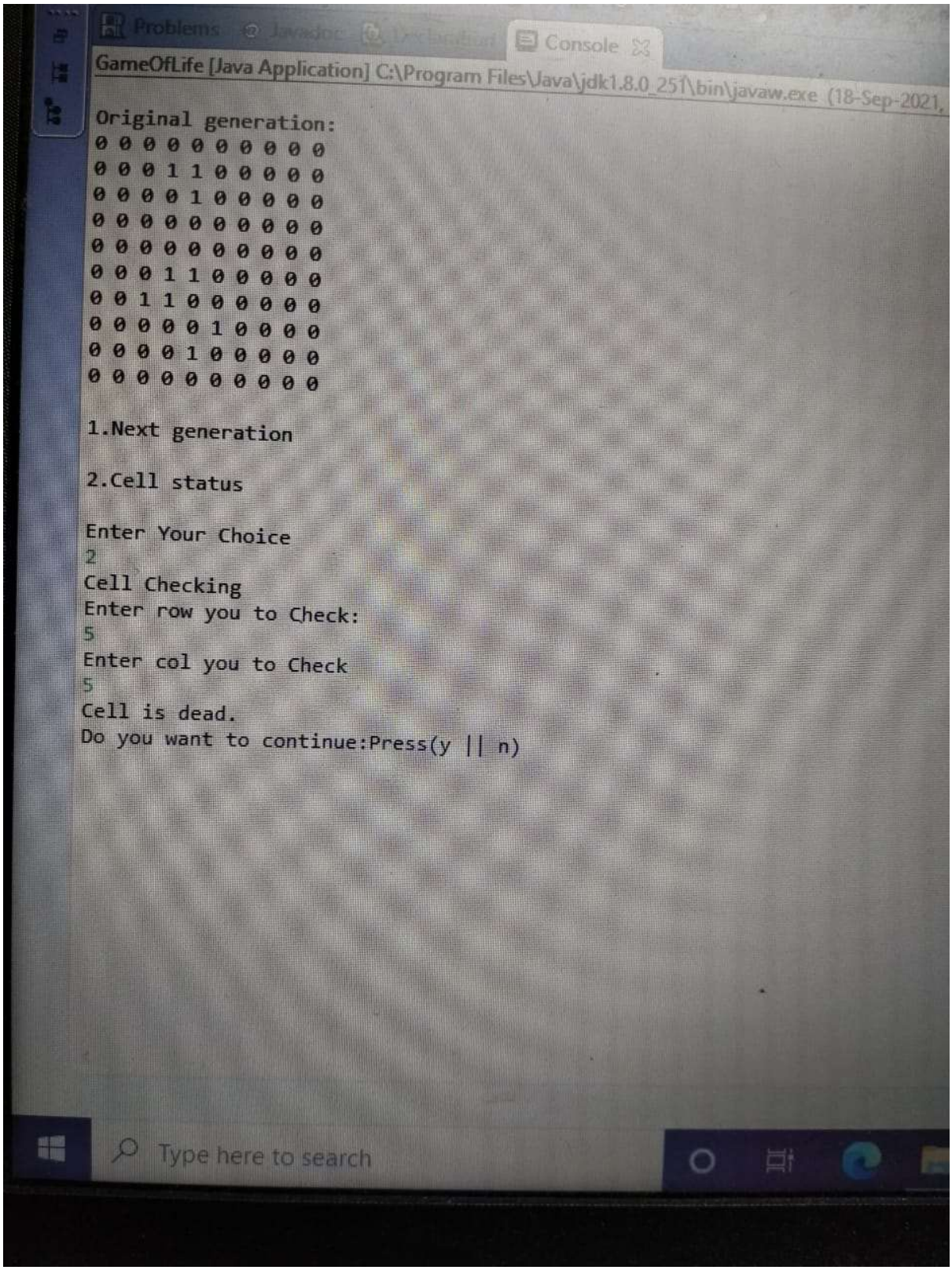
Name:-Swapnil Urkude

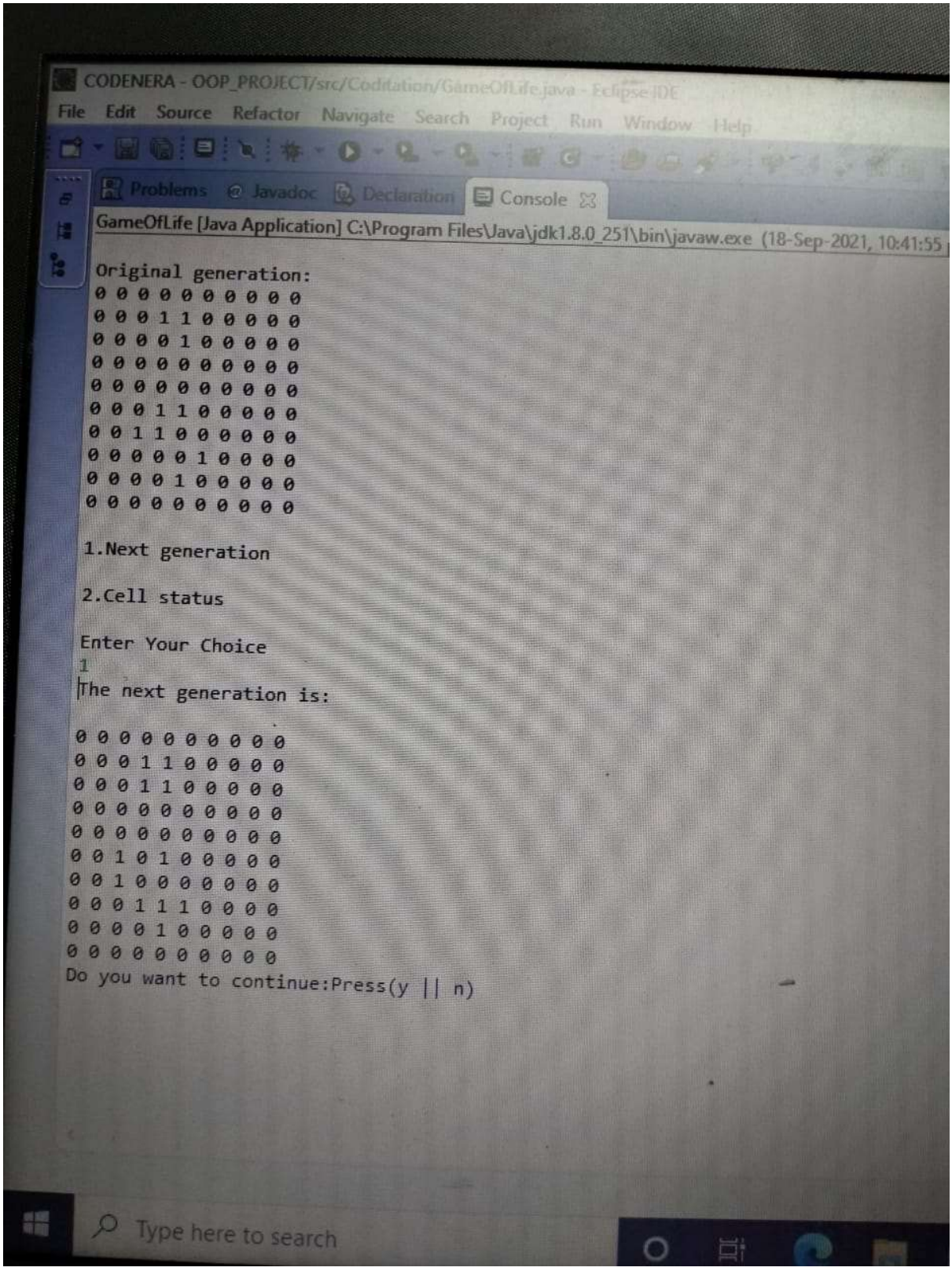
```
package Coditation;

import java.util.Scanner;

/*
1. Any live cell with fewer than two live neighbors dies, as if by loneliness.
2. Any live cell with more than three live neighbors dies, as if by overcrowding.
3. Any live cell with two or three live neighbors lives, unchanged, to the next
generation.
4. Any dead cell with exactly three live neighbors comes to life.

 */
public  class GameOfLife{


        public static void main(String args[])
           {
               GameOfLife  s=new GameOfLife ();
               Scanner sc=new Scanner(System.in);
               int r=10,c=10;
               char choice;
               int ch;
               // Initializing the grid
               int[][] grid= { { 0, 0, 0, 0, 0, 0, 0, 0, 0, 0 },
                       { 0, 0, 0, 1, 1, 0, 0, 0, 0, 0 },
                       { 0, 0, 0, 0, 1, 0, 0, 0, 0, 0 },
                       { 0, 0, 0, 0, 0, 0, 0, 0, 0, 0 },
                       { 0, 0, 0, 0, 0, 0, 0, 0, 0, 0 },
                       { 0, 0, 0, 1, 1, 0, 0, 0, 0, 0 },
                       { 0, 0, 1, 1, 0, 0, 0, 0, 0, 0 },
                       { 0, 0, 0, 0, 0, 1, 0, 0, 0, 0 },
                       { 0, 0, 0, 0, 1, 0, 0, 0, 0, 0 },
                       { 0, 0, 0, 0, 0, 0, 0, 0, 0, 0 }
               };

               int grid1[][] = new int[r][c];

               do
               {
                   System.out.print("\nOriginal generation:\n");
                   for(int i=0;i<grid.length;i++)
                   {
                       for(int j=0;j<grid.length;j++)
                       {
                           System.out.print(grid[i][j]+" ");
                       }
                       System.out.println();
                   }
                   System.out.println("\n1.Next generation");
                   System.out.println("\n2.Cell status");
                   System.out.println("\nEnter Your Choice ");
                   ch=sc.nextInt();

                   switch(ch)
                   {
                       case 1 : System.out.println("The next generation is:\n");
                           s.nextGrid(grid,r,c,grid1);
```

```
                break;

            case 2 :
                s.checkStatus(grid1);
                break;


            default:
                System.out.println("Wrong Choice");
        }
        System.out.println("Do you want to continue:Press(y || n)");
        choice=sc.next().charAt(0);
    }while(choice=='y');
}
public  void nextGrid(int grid[][], int r, int c,int grid1[][])
{

    for (int l = 1; l < r - 1; l++)
    {
        for (int m = 1; m < c - 1; m++)
        {
            // finding no Of Neighbours that are alive
            int alive_Neighbours = 0;
            for (int i = -1; i <= 1; i++)
                for (int j = -1; j <= 1; j++)
                    alive_Neighbours += grid[l + i][m + j];

            // Cell is lonely and dies
            if ((grid[l][m] == 1) && (alive_Neighbours < 2))
                grid1[l][m] = 0;

                // Cell dies due to overcrowding
            else if ((grid[l][m] == 1) && (alive_Neighbours > 3))
                grid1[l][m] = 0;

                // A new cell is born
            else if ((grid[l][m] == 0) && (alive_Neighbours == 3))
                grid1[l][m] = 1;
            else        // Remains the same
                grid1[l][m]=grid[l][m];
        }

    }

    for (int i = 0; i < r; i++)
    {
        for (int j = 0; j < c; j++)
        {
            System.out.print(grid1[i][j] + " ");
        }
        System.out.println();
    }

}

public  void checkStatus(int grid1[][])
{
    Scanner sc=new Scanner(System.in);
    System.out.println("Cell Checking");
```

```
                System.out.println("Enter row you to Check:");
                int cell1=sc.nextInt();
//Input

                System.out.println("Enter col you to Check ");
                int cell2=sc.nextInt();
//Input

                if(grid1[cell1][cell2]==1)
                    System.out.println("Cell is live.");
                else
                    System.out.println("Cell is dead.");
            }

             }
```

OUTPUT:-


Problems
Javadoc
Declaration
Console
GameOfLife [Java Application] C:\Program Files\Java\jdk1.8.0_251\bin\javaw.exe (18-Sep-2021,
Original generation:
0 0 0 0 0 0 0 0 0 0
0 0 0 1 1 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 1 1 0 0 0 0 0
0 0 1 1 0 0 0 0 0 0
0 0 0 0 0 1 0 0 0 0
0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
1.Next generation
2.Cell status
Enter Your Choice
2
Cell Checking
Enter row you to Check:
5
Enter col you to Check
5
Cell is dead.
Do you want to continue:Press(y || n)
Type here to search


CODENERA - OOP_PROJECT/src/Coditation/GameOfLife.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Problems Javadoc Declaration Console
GameOfLife [Java Application] C:\Program Files\Java\jdk1.8.0_251\bin\javaw.exe (18-Sep-2021, 10:41:55
Original generation:
0 0 0 0 0 0 0 0 0 0
0 0 0 1 1 0 0 0 0 0
0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 1 1 0 0 0 0 0
0 0 1 1 0 0 0 0 0 0
0 0 0 0 0 1 0 0 0 0
0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
1.Next generation
2.Cell status
Enter Your Choice
1
The next generation is:
0 0 0 0 0 0 0 0 0 0
0 0 0 1 1 0 0 0 0 0
0 0 0 1 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 1 0 1 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0
0 0 0 1 1 1 0 0 0 0
0 0 0 0 1 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
Do you want to continue:Press(y || n)
Type here to search