```
Coding:
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import java.util.Scanner;

public final class GameOfLife
{
      public final static int DEAD=0x00;
      public final static int LIVE=0x01;

      private void test(int itn)
        {
            int[][] board={
                    { 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 }
                              };
            System.out.println("Game of Life");
            printBoard(board);

            for (int i=0; i<itn; i++)
                {
                  System.out.println();
                  board=getNextBoard(board);
                  printBoard(board);
            }

            Scanner sc= new Scanner (System.in);
            System.out.println("Enter The Cell  You Want To Check ");

            System.out.println("Enter Row ");
            int r=sc.nextInt();

            System.out.println("Enter Column ");
            int c=sc.nextInt();
            if(r<board.length && c<board[0].length)
                {
                  int count=0;
                  for (int i=0; i<board.length; i++)
                        {
                        for (int j=0; j<board[i].length; j++)
                                {
                              if (board[r][c]==0)
                                    count=0;
                              else
                                    count=1;
                        }

                  }
                  if (count==0)
                        System.out.println("*********Cell is Dead*********");
                  else
                        System.out.println("*********Cell is Live*********");
            }
      }
```

```
       private void printBoard(int[][] board)
         {
             for (int i=0, x=board.length; i<x; i++)
                 {
                   for (int j=0,y=board[i].length; j<y; j++)
                         {
                    System.out.print(Integer.toString(board[i][j])+",");
                   }
                    System.out.println();
             }

       }

       public int[][] getNextBoard(int[][] board)
         {
             if(board.length==0 || board[0].length==0)
                  throw new IllegalArgumentException("Board must have a positive
amount of rows and/or columns");

             int nRows=board.length;
             int nCols=board[0].length;
             int [][] temp= new int[nRows][nCols];
             for (int row= 0; row<nRows; row++)
                 {
                   for (int col=0; col<nCols; col++)
                         {
                    temp[row][col]=getNewCellState(board[row]
[col],getLiveNeighbour(row,col,board));
                   }
             }
             return temp;
       }
       private int getLiveNeighbour(int cellRow, int cellCol, int[][]board)
         {
             int liveNeighbours=0;
             int rowEnd=Math.min(board.length, cellRow+2);
             int colEnd=Math.min(board[0].length, cellCol+2);

             for (int row=Math.max(0, cellRow-1); row<rowEnd; row++)
                 {
                   for (int col=Math.max(0, cellCol-1); col<colEnd; col++)
                         {
                    if((row!=cellRow || col!=cellCol) && board[row][col]==
LIVE)liveNeighbours++;
                   }
             }
             return liveNeighbours;
       }

       private int getNewCellState(int curState, int liveNeighbours)
         {
             int newState= curState;
             switch (curState){
             case LIVE:
                   if(liveNeighbours<2)
                         newState=DEAD;
                   if(liveNeighbours==2 || liveNeighbours==3)
                         newState=LIVE;
                   if(liveNeighbours>3)
                         newState=DEAD;
                   break;
             case DEAD:
                   if(liveNeighbours==3)
                         newState=LIVE;
                   break;
                   default:
                         throw new IllegalArgumentException("State of cell must
be either LIVE or DEAD");

             }
             return newState;
       }
      public final static void main(String[] args)
        {
            GameOfLife gol=new GameOfLife();
            Scanner sc= new Scanner (System.in);
            System.out.println("Enter number of iterations you want to
perform");
            int num=sc.nextInt();
            gol.test(num);
      }

}
```

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================================================================================
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Output:
================================================================================
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Enter number of iterations you want to perform
5
Game of Life
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,

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,
0,0,1,1,1,0,0,0,0,0,
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0,0,0,1,0,0,0,0,0,0,
0,0,1,0,1,0,0,0,0,0,
0,0,0,0,0,0,0,0,0,0,
0,0,1,1,1,0,0,0,0,0,
0,0,0,0,0,0,0,0,0,0,
0,0,0,0,0,0,0,0,0,0,

0,0,0,0,0,0,0,0,0,0,
0,0,0,1,1,0,0,0,0,0,
0,0,0,1,1,0,0,0,0,0,
0,0,0,1,1,0,0,0,0,0,
0,0,0,1,0,0,0,0,0,0,
0,0,0,1,0,0,0,0,0,0,
0,0,1,0,1,0,0,0,0,0,
0,0,0,1,0,0,0,0,0,0,
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0,0,0,0,0,0,0,0,0,0,
0,0,0,1,1,0,0,0,0,0,
0,0,1,0,0,1,0,0,0,0,
0,0,1,0,0,0,0,0,0,0,
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0,0,1,1,1,0,0,0,0,0,
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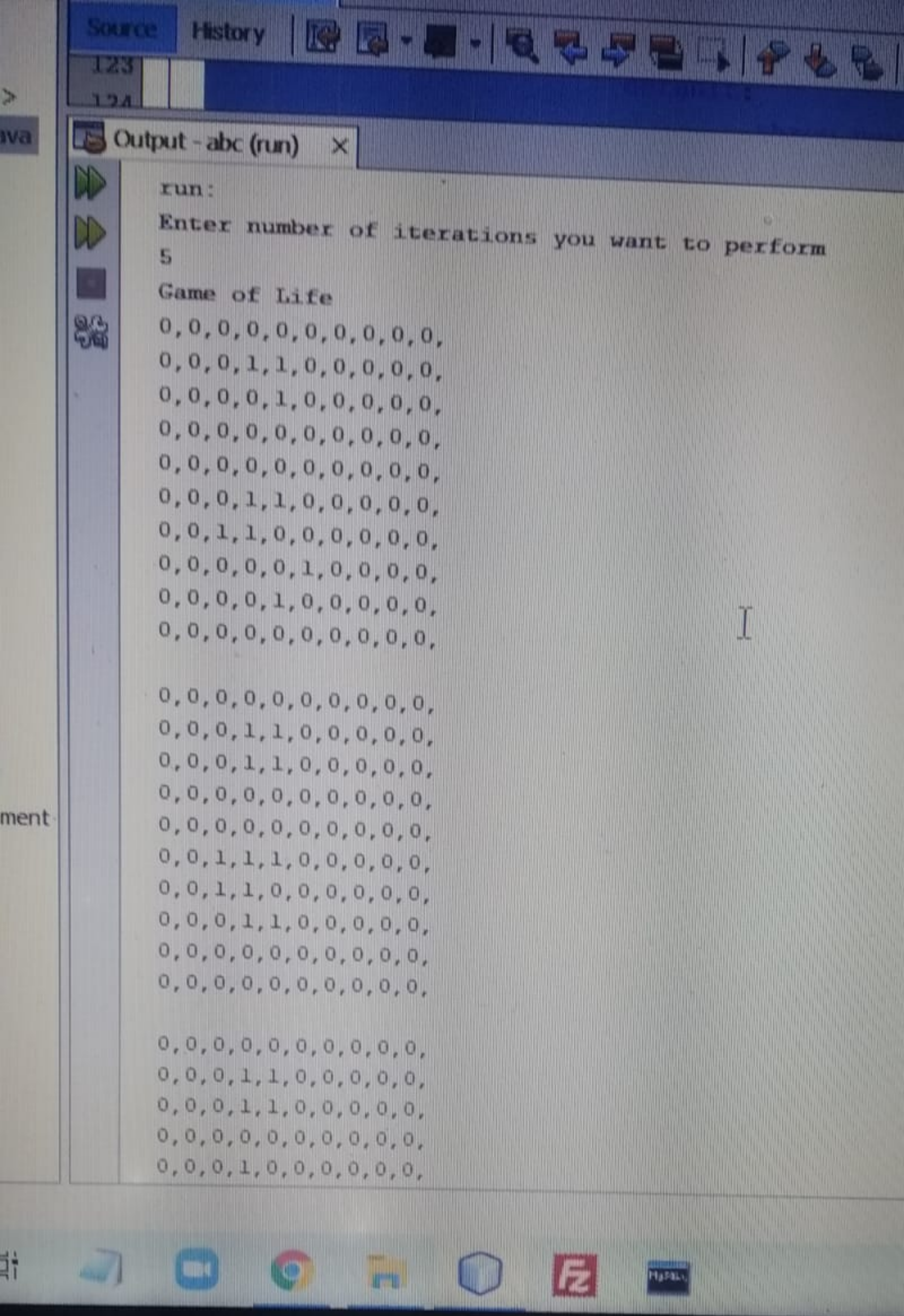
0,0,0,1,1,0,0,0,0,0,
0,0,1,0,1,0,0,0,0,0,
0,1,1,0,0,0,0,0,0,0,
0,1,0,0,1,0,0,0,0,0,
0,1,0,0,1,0,0,0,0,0,
0,1,0,0,0,1,0,0,0,0,
0,0,1,0,1,0,0,0,0,0,
0,0,0,1,0,0,0,0,0,0,
0,0,0,0,0,0,0,0,0,0,
Enter The Cell  You Want To Check
Enter Row
2
Enter Column
3
*********Cell is Dead*********
```



```
run:
Enter number of iterations you want to perform
5
Game of Life
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,

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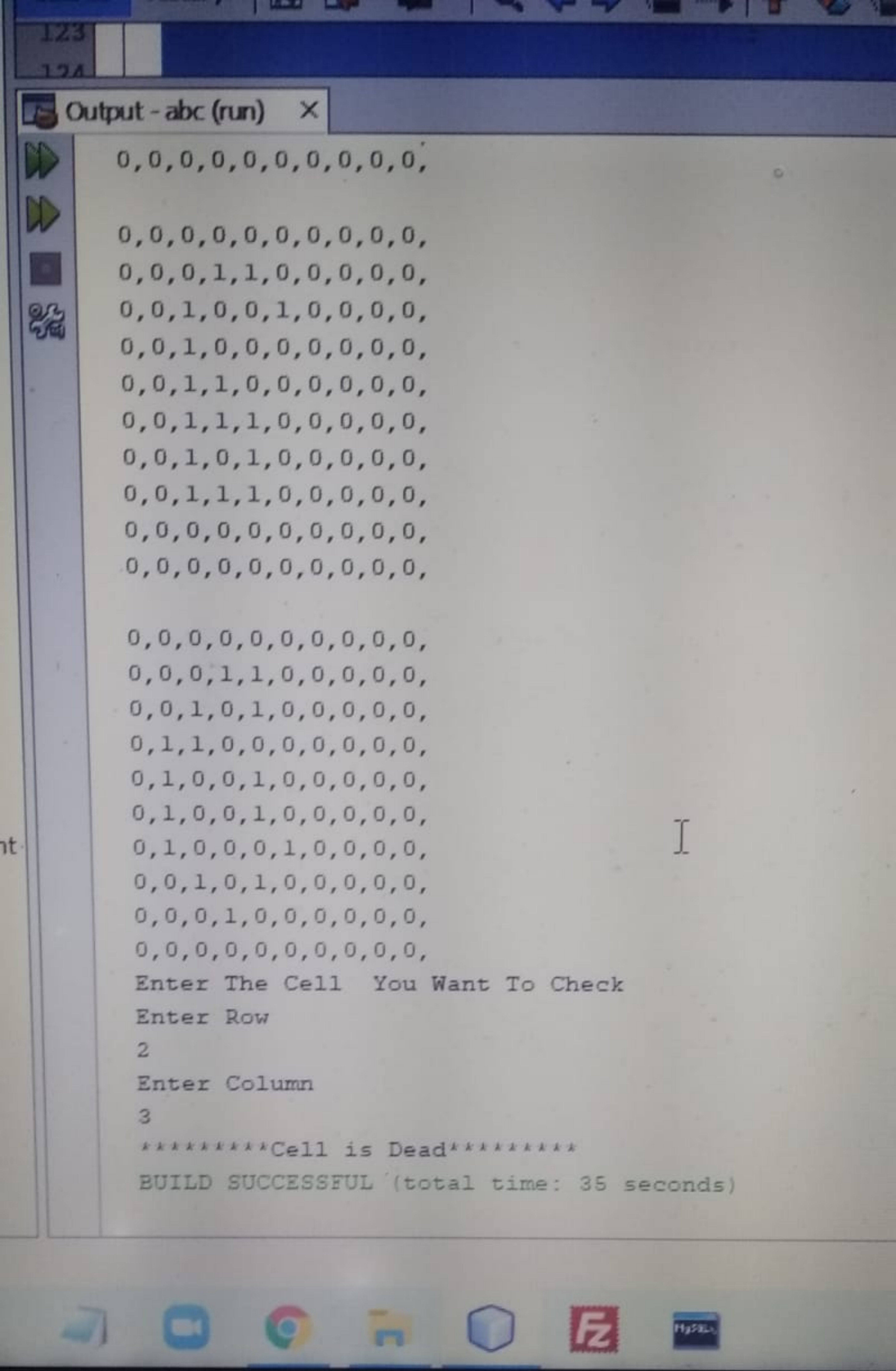
0,0,0,1,1,0,0,0,0,0,
0,0,0,1,1,0,0,0,0,0,
0,0,0,0,0,0,0,0,0,0,
0,0,0,0,0,0,0,0,0,0,
0,0,1,1,1,0,0,0,0,0,
0,0,1,1,0,0,0,0,0,0,
0,0,0,1,1,0,0,0,0,0,
0,0,0,0,0,0,0,0,0,0,
0,0,0,0,0,0,0,0,0,0,

0,0,0,0,0,0,0,0,0,0,
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,
0,0,0,1,0,0,0,0,0,0,
```

2021-9-18 20:39



```
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,
0,0,1,0,0,1,0,0,0,0,
0,0,1,0,0,0,0,0,0,0,
0,0,1,1,0,0,0,0,0,0,
0,0,1,1,1,0,0,0,0,0,
0,0,1,0,1,0,0,0,0,0,
0,0,1,1,1,0,0,0,0,0,
0,0,0,0,0,0,0,0,0,0,
0,0,0,0,0,0,0,0,0,0,

0,0,0,0,0,0,0,0,0,0,
0,0,0,1,1,0,0,0,0,0,
0,0,1,0,1,0,0,0,0,0,
0,1,1,0,0,0,0,0,0,0,
0,1,0,0,1,0,0,0,0,0,
0,1,0,0,1,0,0,0,0,0,
0,1,0,0,0,1,0,0,0,0,
0,0,1,0,1,0,0,0,0,0,
0,0,0,1,0,0,0,0,0,0,
0,0,0,0,0,0,0,0,0,0,
Enter The Cell  You Want To Check
Enter Row
2
Enter Column
3
*********Cell is Dead*********
BUILD SUCCESSFUL (total time: 35 seconds)
```