**import** java.io.BufferedReader;

**import** java.io.FileNotFoundException;

**import** java.io.FileReader;

**import** java.io.IOException;

**import** java.util.Scanner;

**public** **class** MazeSolver {

**static** **char**[][] *maze*;

**int** n, startX, startY, goalX, goalY;

String filename;

**public** MazeSolver(String filename)

{

**this**.filename = filename;

}

**public** **void** readMaze() {

**try**

{

FileReader fr = **new** FileReader(filename);

BufferedReader br = **new** BufferedReader(fr);

n = Integer.*parseInt*(br.readLine());

*maze* = **new** **char**[n][n];

**for**(**int** i = 0; i < n ;i++)

{

String s = br.readLine();

**for**(**int** j = 0; j< n; j++)

{

*maze*[i][j] = s.charAt(j);

**if**(*maze*[i][j] == 'S')

{

//Code to get start coordinate

startX=i;

startY=j;

}

**if**(*maze*[i][j] == 'G')

{

//Code to get the end coordinate

goalX=i;

goalY=j;

}

}

}

}

**catch**(FileNotFoundException e)

{

e.getMessage();

e.printStackTrace();

System.***out***.println("File Not Found");

}

**catch**(IOException e) {

e.getMessage();

e.printStackTrace();

System.***out***.println("Invalid Entry");

}

}

**public** **void** displayMaze()

{

System.***out***.println();

**for**(**int** i = 0; i < n ; i++)

{

**for**(**int** j = 0; j < n ; j++)

System.***out***.print(*maze*[i][j]);

System.***out***.println();

}

}

**public** **void** solveMaze()

{

**int** x=startX,y=startY;

**boolean** s = solveMaze(x, y);

**while**((x!=goalX)&&(y!=goalY))

{

// x=x+1;

// y=y+1;

solveMaze(x, y);

}

}

**private** **boolean** solveMaze(**int** x, **int** y) {

Scanner mys = **new** Scanner(System.***in***);

// System.out.println("sX="+startX+"sY="+startY+"gX="+goalX+"gY="+goalY);

System.***out***.println("Press Enter for next step \n "

+ "Currently Checking row = "+x+ " and column ="+y+" goalX = "+goalX+ " goalY = "+goalY );

String e = mys.nextLine();

**if**(x<0 || x>=n || y<0 || y>=n)

**return** **false**;

**if**(x == goalX && y == goalY)

**return** **true**;

**if**(x == startX && y == startY);

**else**

{

**if**(*maze*[x][y]=='#')

**return** **false**;

**else**

{

*maze*[x][y]='P';

displayMaze();

// x=x+1;

// y=y+1;

**return** **true**;

}

}

**if**(solveMaze(x-1,y) == **true**)

**return** **true**;

**if**(solveMaze(x,y-1) == **true**)

**return** **true**;

**if**(solveMaze(x+1,y) == **true**)

**return** **true**;

**if**(solveMaze(x, y+1) == **true**)

{

**return** **true**;

}

**return** **false**;

}

}