INSTITUTE OF INFORMATION TECHNOLOGY

JAHANGIRNAGAR UNIVERSITY

Lab Exam : 02

Submission Date : 24/01/2022

Course Tittle : Algorithm Analysis and Design Lab

Course Code : ICT - 2202

Submitted To

Dr. M. Abu Yousuf

Professor

IIT – JU

Submitted By

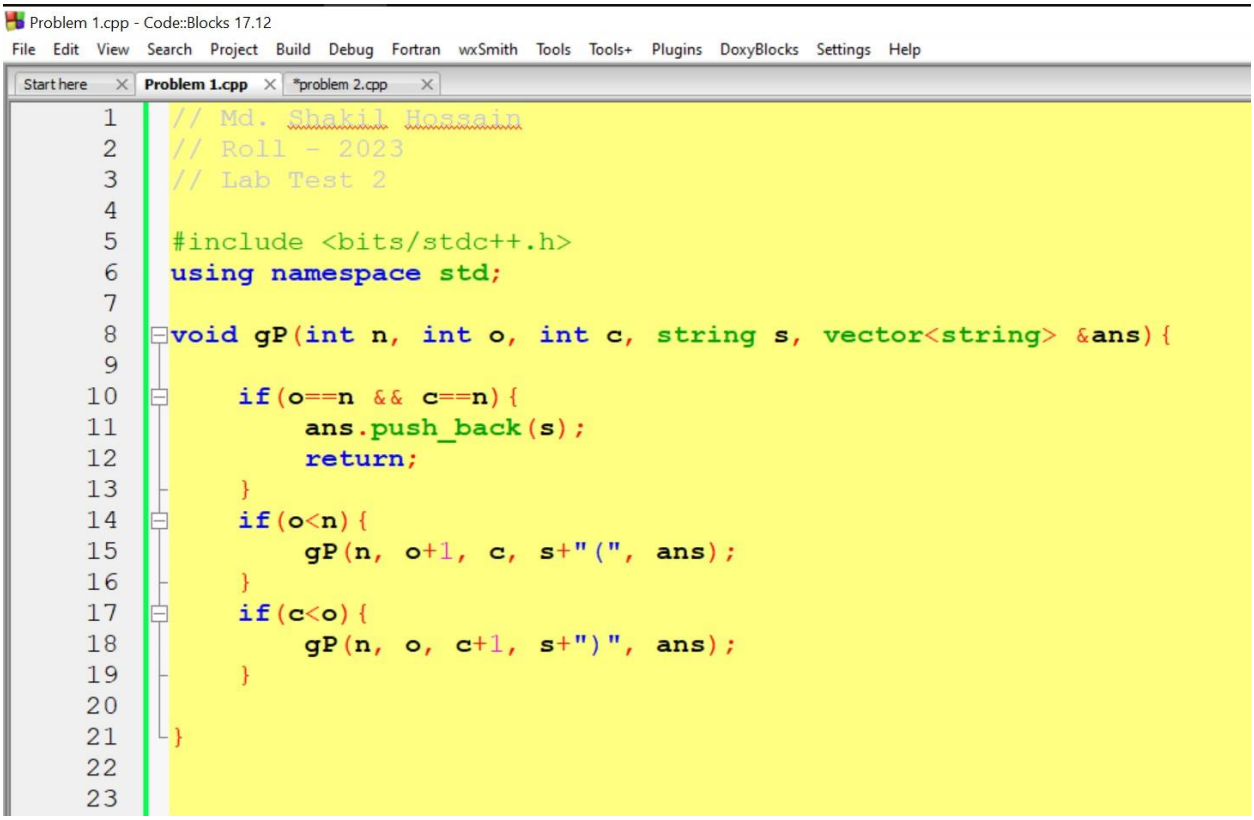
Md. Shakil Hossain

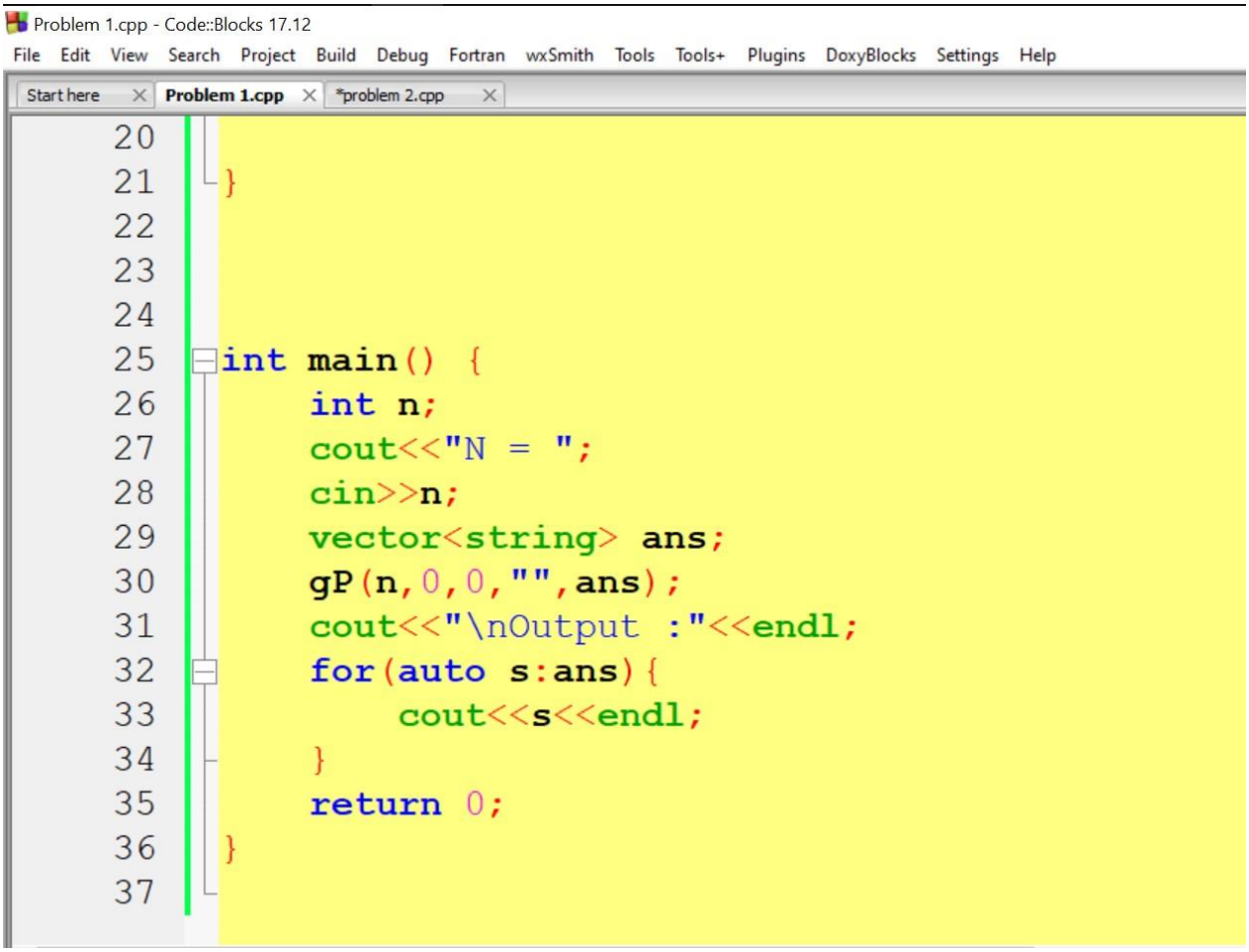
Roll – 2023

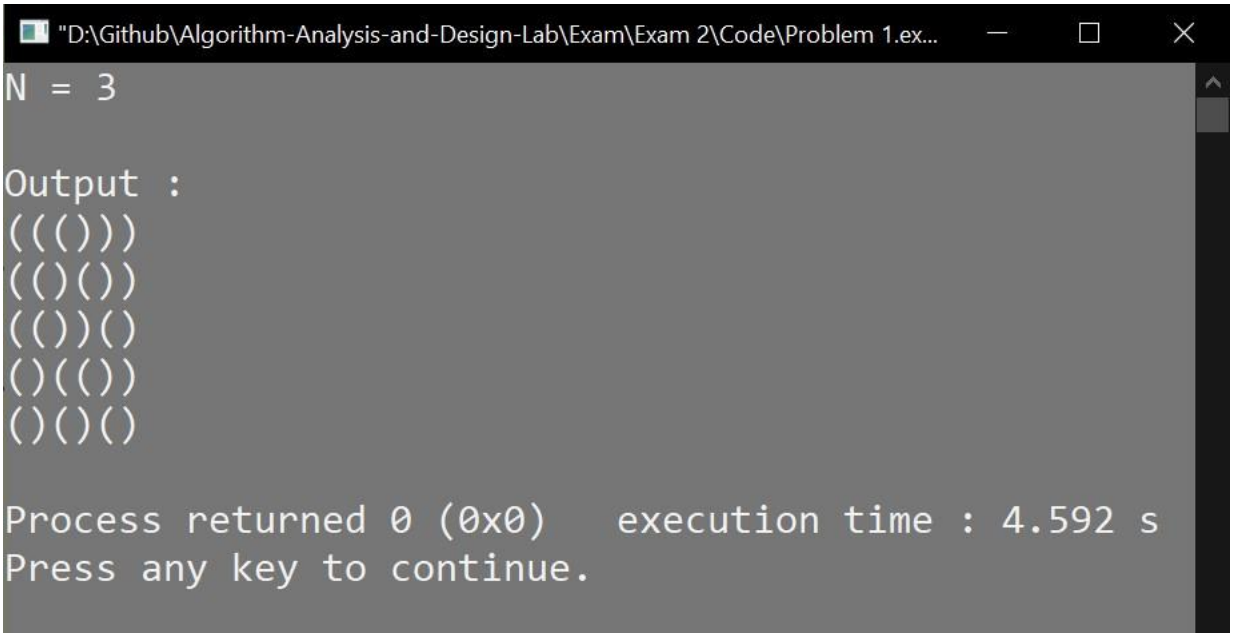
2nd year 2st Semester

IIT – JU

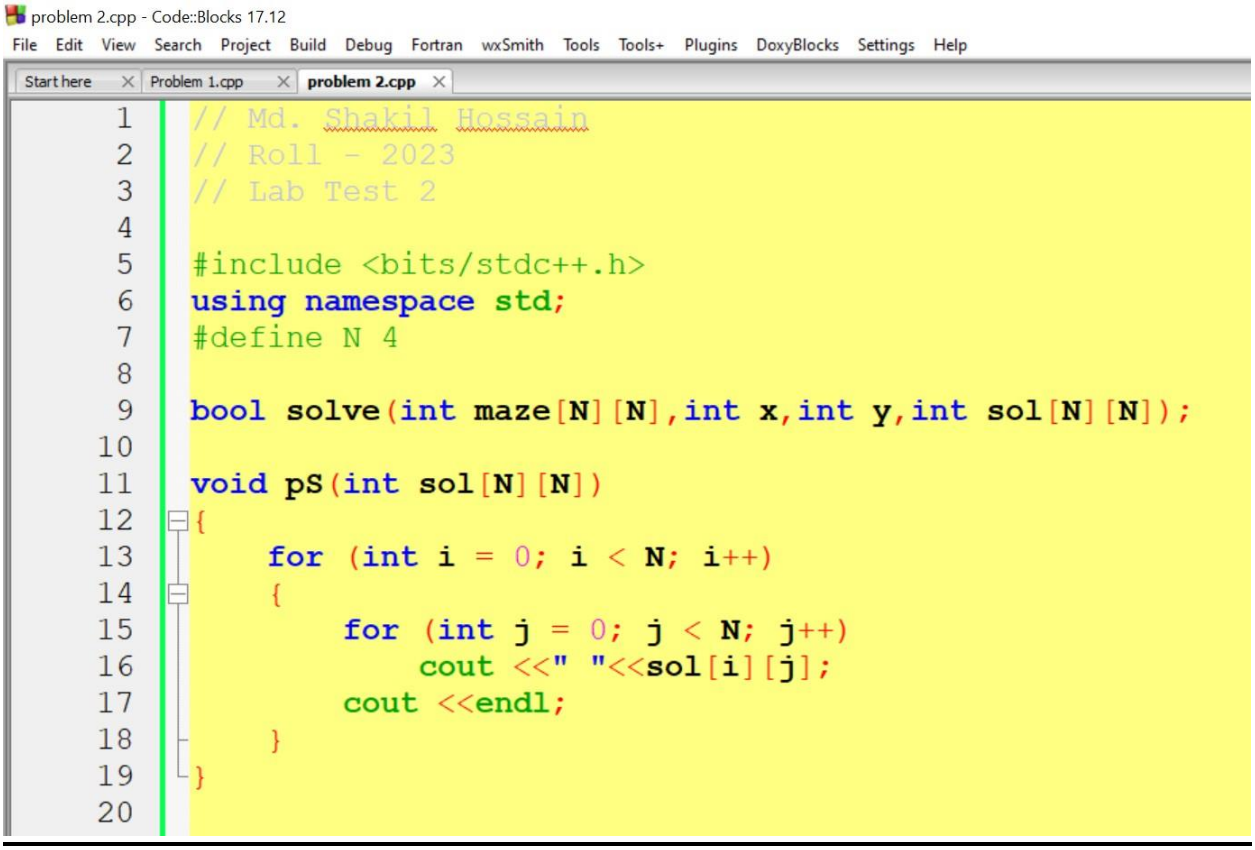
Answer to the problem no - 1

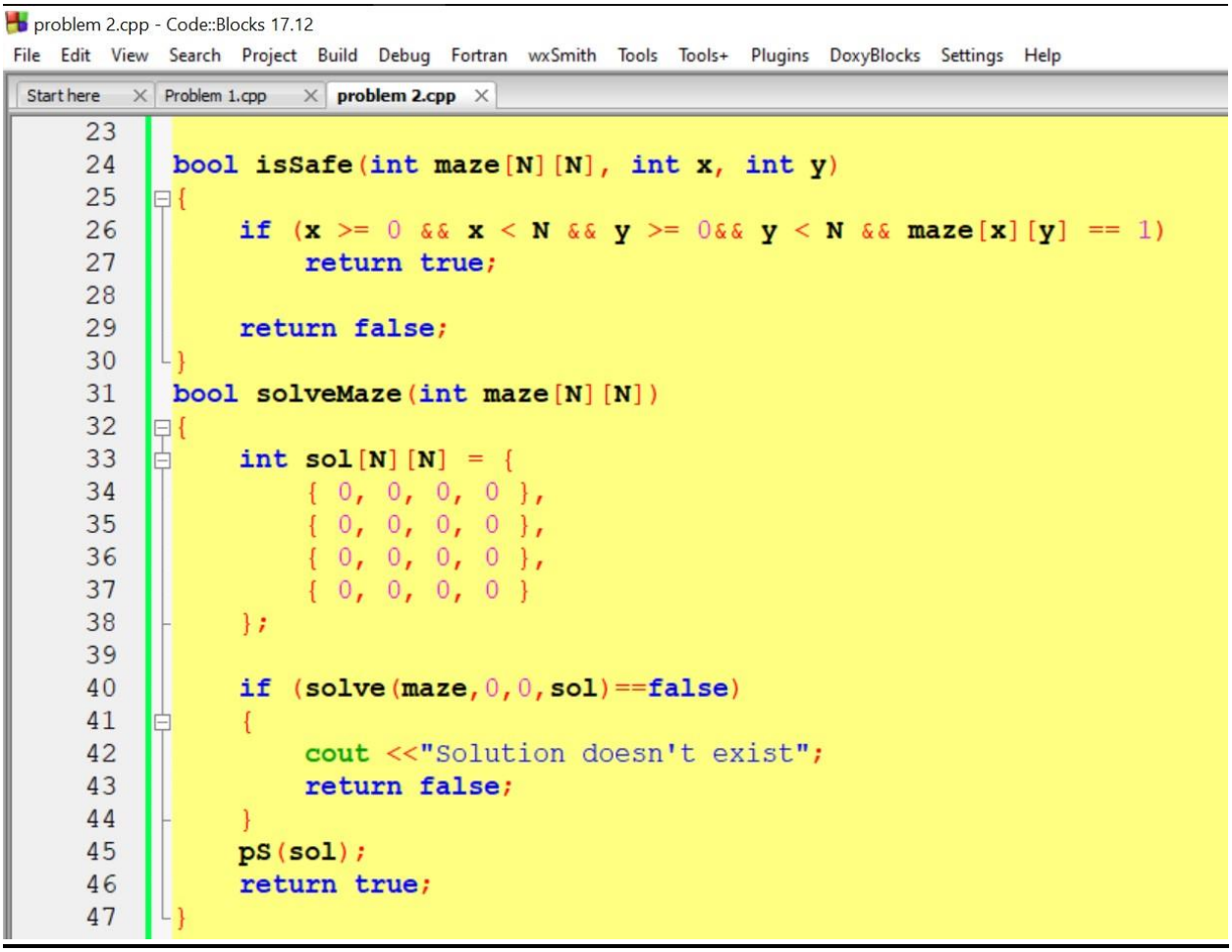


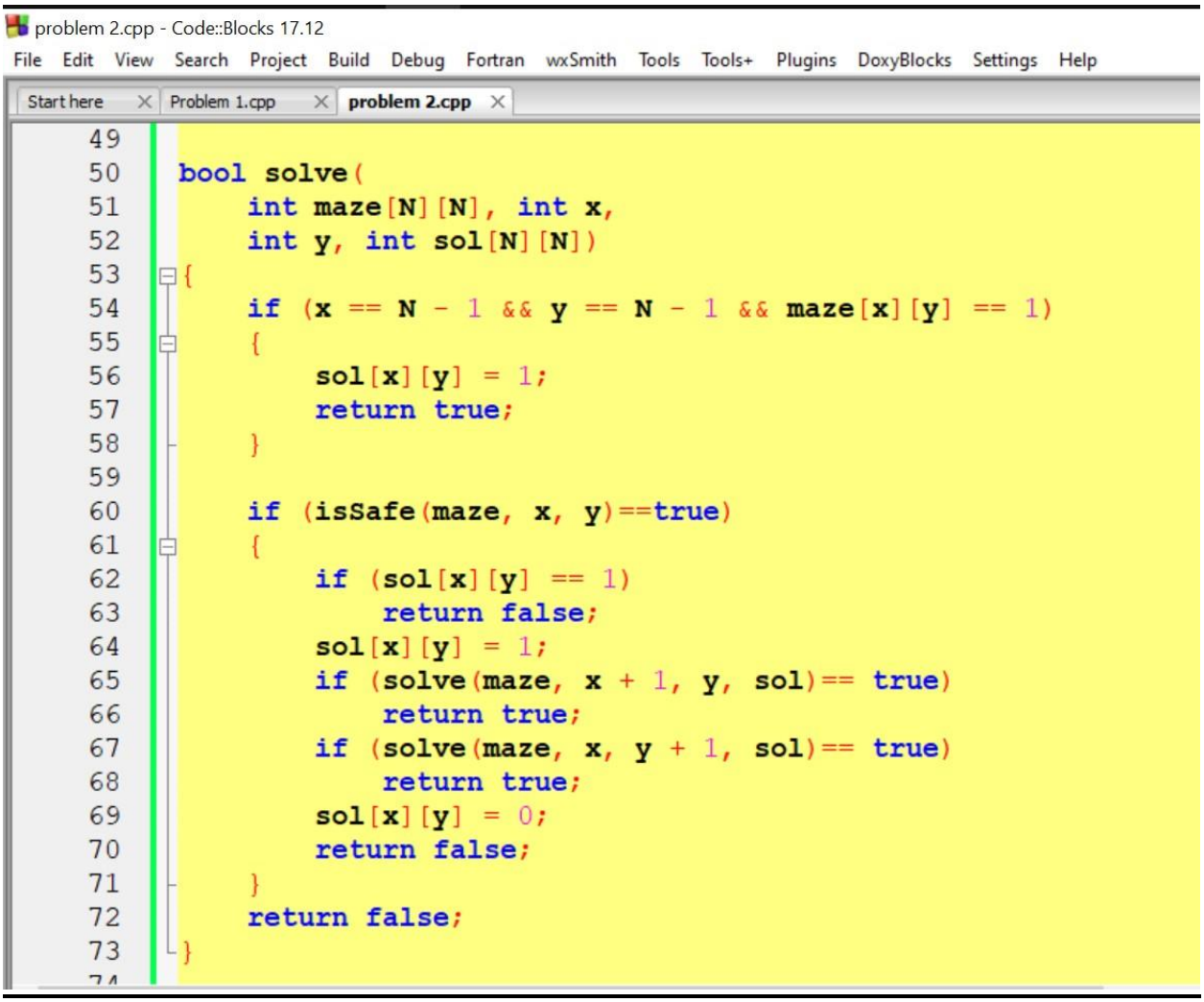

Problem 1.cpp - Code::Blocks 17.12
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Start here
Problem 1.cpp
*problem 2.cpp
20
21 }
22
23
24
25 int main() {
26 int n;
27 cout<<"N = ";
28 cin>>n;
29 vector<string> ans;
30 gP(n,0,0,"",ans);
31 cout<<"\nOutput :"<<endl;
32 for(auto s:ans){
33 cout<<s<<endl;
34 }
35 return 0;
36 }
37

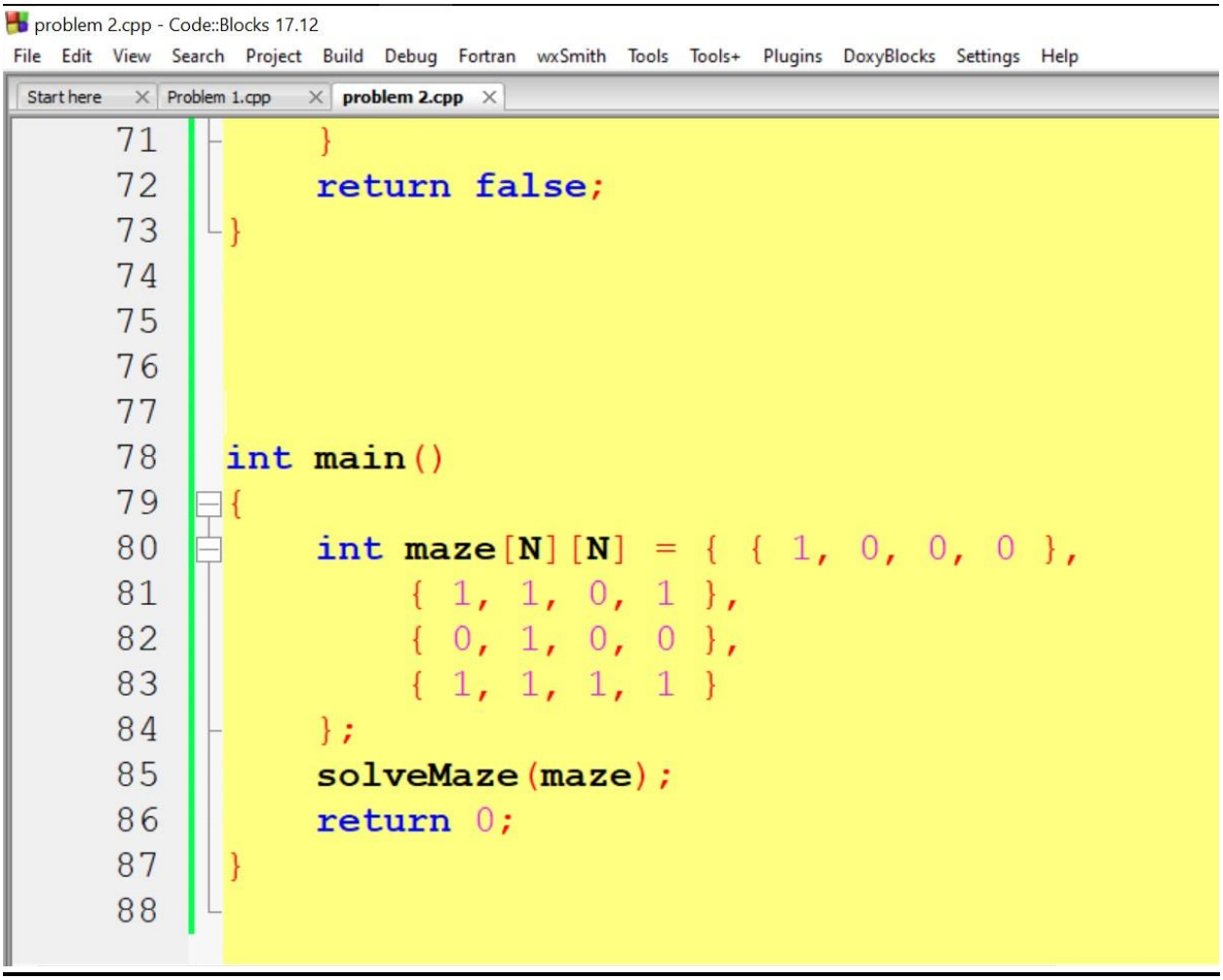

"D:\Github\Algorithm-Analysis-and-Design-Lab\Exam\Exam 2\Code\Problem 1.ex...
N = 3
Output :
(((())))
((()()))
((())())
(()(()))
(()()())
Process returned 0 (0x0) execution time : 4.592 s
Press any key to continue.

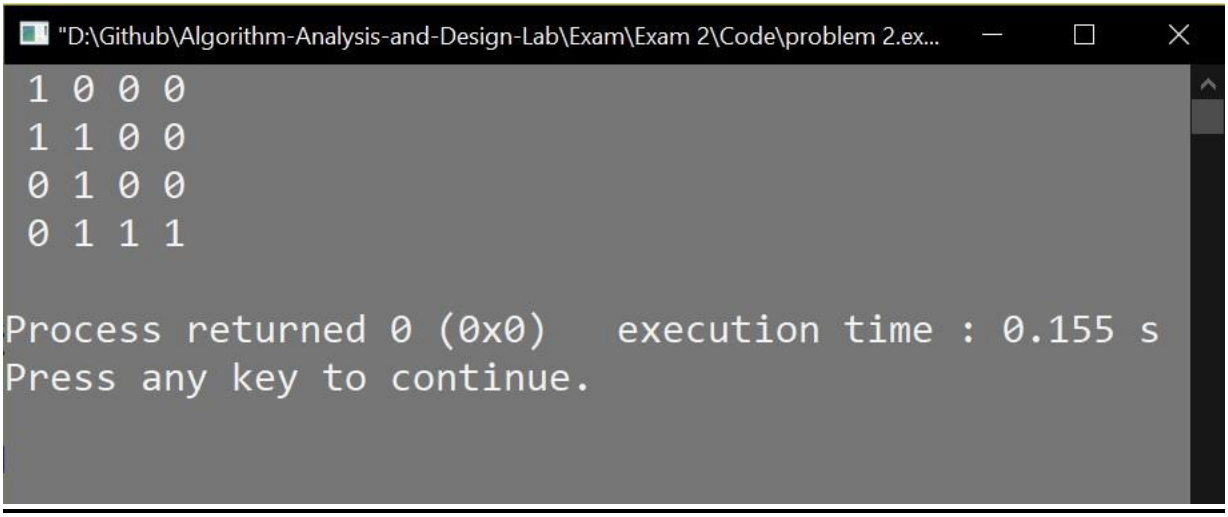
Answer to the problem no – 2




problem 2.cpp - Code::Blocks 17.12
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Start here
Problem 1.cpp
problem 2.cpp
23
24 bool isSafe(int maze[N][N], int x, int y)
25 {
26 if (x >= 0 && x < N && y >= 0&& y < N && maze[x][y] == 1)
27 return true;
28
29 return false;
30 }
31 bool solveMaze(int maze[N][N])
32 {
33 int sol[N][N] = {
34 { 0, 0, 0, 0 },
35 { 0, 0, 0, 0 },
36 { 0, 0, 0, 0 },
37 { 0, 0, 0, 0 }
38 };
39
40 if (solve(maze,0,0,sol)==false)
41 {
42 cout <<"Solution doesn't exist";
43 return false;
44 }
45 pS(sol);
46 return true;
47 }


problem 2.cpp - Code::Blocks 17.12
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Start here
Problem 1.cpp
problem 2.cpp
49
50 bool solve(
51 int maze[N][N], int x,
52 int y, int sol[N][N])
53 {
54 if (x == N - 1 && y == N - 1 && maze[x][y] == 1)
55 {
56 sol[x][y] = 1;
57 return true;
58 }
59
60 if (isSafe(maze, x, y)==true)
61 {
62 if (sol[x][y] == 1)
63 return false;
64 sol[x][y] = 1;
65 if (solve(maze, x + 1, y, sol)== true)
66 return true;
67 if (solve(maze, x, y + 1, sol)== true)
68 return true;
69 sol[x][y] = 0;
70 return false;
71 }
72 return false;
73 }


problem 2.cpp - Code::Blocks 17.12
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Start here
Problem 1.cpp
problem 2.cpp
71 }
72 return false;
73 }
74
75
76
77
78 int main()
79 {
80 int maze[N][N] = { { 1, 0, 0, 0 },
81 { 1, 1, 0, 1 },
82 { 0, 1, 0, 0 },
83 { 1, 1, 1, 1 }
84 };
85 solveMaze(maze);
86 return 0;
87 }
88


"D:\Github\Algorithm-Analysis-and-Design-Lab\Exam\Exam 2\Code\problem 2.ex...
1 0 0 0
1 1 0 0
0 1 0 0
0 1 1 1
Process returned 0 (0x0) execution time : 0.155 s
Press any key to continue.

THE END