



Online Java Compiler IDE

For Multiple Files, Custom Library and File Read/Write, use our new - [Advanced Java IDE](#)

```
1
2 import java.util.Scanner;
3 public class TabuSearch {
4
5     /**
6      * @param args the command line arguments
7      */
8     private int V, numOfColors;
9     private int[] color;
10    private int[][] graph;
11
12    /** Function to assign color */
13    public void graphColor(int[][] g, int noc)
14    {
15        V = g.length;
16        numOfColors = noc;
17        color = new int[V];
18        graph = g;
19
20        try
21        {
22            solve(0);
23            System.out.println("No solution");
24        }
25        catch (Exception e)
26        {
27            System.out.println("\nSolution exists ");
28            display();
29        }
30    }
31    /** function to assign colors recursively */
32    public void solve(int v) throws Exception
33    {
34        /** base case - solution found */
35        if (v == V)
36            throw new Exception("Solution found");
37        /** try all colours */
38        for (int c = 1; c <= numOfColors; c++)
39        {
40            if (isPossible(v, c))
41            {
42                /** assign and proceed with next vertex */
43                color[v] = c;
44                solve(v + 1);
45                /** wrong assignement */
46                color[v] = 0;
47            }
48        }
49    }
50    /** function to check if it is valid to allot that color to vertex */
51    public boolean isPossible(int v, int c)
52    {
53        for (int i = 0; i < V; i++)
54            if (graph[v][i] == 1 && c == color[i])
55                return false;
56        return true;
57    }
58    /** display solution */
59    public void display()
60    {
61        System.out.print("\nColors : ");
62        for (int i = 0; i < V; i++)
63            System.out.print(color[i] + " ");
64        System.out.println();
65    }
66 }
```

```
65     }
66     public static void main(String args[]) {
67         // TODO code application logic here
68         Scanner scan = new Scanner(System.in);
69         System.out.println("Graph Coloring Algorithm Test\n");
70         /** Make an object of GraphColoring class */
71         TabuSearch gc = new TabuSearch();
72
73         /** Accept number of vertices */
74         System.out.println("Enter number of vertices\n");
75         int V = scan.nextInt();
76
77         /** get graph */
78         System.out.println("\nEnter matrix\n");
79         int[][] graph = new int[V][V];
80         for (int i = 0; i < V; i++)
81             for (int j = 0; j < V; j++)
82                 graph[i][j] = scan.nextInt();
83
84         System.out.println("\nEnter number of colors");
85         int c = scan.nextInt();
86
87         gc.graphColor(graph, c);
88     }
89 }
```

Execute Mode, Version, Inputs & Arguments

CommandLine Arguments

Result

compiled and executed in 34.409 sec(s)

Graph Coloring Algorithm Test

Enter number of vertices

4

Enter matrix

```
1 0 1 0
1 0 1 1
0 0 0 0
1 1 1 1
```


Enter number of colors

4

Solution exists

Colors : 1 1 1 2

Note:

1. For file operations - upload files using upload button . Files will be upload to /uploads folder. You can read those files in program from /uploads folder. To write a file from your program, write files to '/myfiles' folder. Please note the uploaded files stored in the server only for the current session.
2. For detailed documentation check - [Our Documentation](#), or check our [Youtube channel](#).

Thanks for using our

Online Java Compiler IDE

to execute your program



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