

# **ARTIFICIAL INTELLIGENCE LAB**

## **ASSIGNMENT – 5**

### **MIN MAX PROBLEM**

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#### **CODE :**

```
import java.util.Scanner;

public class Main {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);
        System.out.println("Enter value of n:");
        int n = sc.nextInt();
        int a[][] = new int[n][n];
        for (int i = 1; i <= n; i++) {
            System.out.print(i + " ");
        }
        System.out.println();
        System.out.println();
        for (int i = 1; i <= n; i++) {
            for (int j = 1; j <= n; j++) {
                int m = j + i;
                if (m % 2 == 0) {
                    a[i - 1][j - 1] = m;
                    System.out.print(a[i - 1][j - 1] + " ");
                } else {
```

```

        a[i - 1][j - 1] = -m;
        System.out.print(a[i - 1][j - 1] + " ");
    }
}
System.out.print(" ");
}
System.out.println();
System.out.println();
System.out.println("Now Maiximizer performs:(E)");
maxelement(n, a);
}
public static void maxelement(int num, int[][] a) {
    int i = 0;
    int max = 0;
    int[] result = new int[num];
    while (i < num) {
        for (int j = 0; j < a[i].length; j++) {
            if (a[i][j] > max) {
                max = a[i][j];
            }
        }
        result[i] = max;
        max = 0;
        i++;
    }
}

```

```
        printArray(result);
    }
    public static void printArray(int[] result) {
        for (int i = 0; i < result.length; i++) {
            System.out.print(result[i] + " ");
        }

        int smallest_element = result[0];
        for (int i = 0; i < result.length; i++) {
            {
                if (result[i] < smallest_element) {
                    smallest_element = result[i];
                }
            }
        }

        System.out.println();

        System.out.println("After Minimizer performance(O): " +
smallest_element);
    }
}
```

Main.java

```
1 import java.util.Scanner;
2 public class Main {
3     public static void main(String[] args) {
4         Scanner sc = new Scanner(System.in);
5         System.out.println("Enter value of n:");
6         int n = sc.nextInt();
7         int a[][] = new int[n][n];
8         for (int i = 1; i <= n; i++) {
9             System.out.print(i + " ");
10        }
11        System.out.println();
12        System.out.println();
13        for (int i = 1; i <= n; i++) {
14            for (int j = 1; j <= n; j++) {
15                int m = j + i;
16                if (m % 2 == 0) {
17                    a[i - 1][j - 1] = m;
18                    System.out.print(a[i - 1][j - 1] + " ");
19                } else {
20                    a[i - 1][j - 1] = -m;
21                    System.out.print(a[i - 1][j - 1] + " ");
22                }
23            }
24            System.out.print(" ");
25        }
26        System.out.println();
27        System.out.println();
28        System.out.println("Now Maiximizer performs:(E)");
29        maxelement(n, a);
30    }
31    public static void maxelement(int num, int[][] a) {
32        int i = 0;
33        int max = 0;
```

```

34     int[] result = new int[num];
35     while (i < num) {
36         for (int j = 0; j < a[i].length; j++) {
37             if (a[i][j] > max) {
38                 max = a[i][j];
39             }
40         }
41         result[i] = max;
42         max = 0;
43         i++;
44     }
45     printArray(result);
46 }
47 public static void printArray(int[] result) {
48     for (int i = 0; i < result.length; i++) {
49         System.out.print(result[i] + " ");
50     }
51     int smallest_element = result[0];
52     for (int i = 0; i < result.length; i++) {
53         {
54             if (result[i] < smallest_element) {
55                 smallest_element = result[i];
56             }
57         }
58     }
59     System.out.println();
60     System.out.println("After Minimizer performance(0): " + smallest_element);
61 }
62 }

```

## OUTPUT :

```

Enter value of n:
4
1      2      3      4

2 -3 4 -5    -3 4 -5 6    4 -5 6 -7    -5 6 -7 8

Now Maiximizer performs:(E)
4 6 6 8
After Minimizer performance(0): 4

```

Enter value of n:

6

1            2            3            4            5            6

2 -3 4 -5 6 -7      -3 4 -5 6 -7 8      4 -5 6 -7 8 -9      -5 6 -7 8 -9 10

6 -7 8 -9 10 -11      -7 8 -9 10 -11 12

Now Maiximizer performs:(E)

6 8 8 10 10 12

After Minimizer performance(0): 6