

ASSIGNMENT-1

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Batch - 19

Assignment 1: Maximum Non-Overlapping Meetings (Greedy)

Problem Statement

You are given N meetings. Each meeting has a start time S_i and an end time E_i . You want to attend the maximum number of meetings. You can attend meeting j after meeting i only if the start time of meeting j is strictly greater than the end time of meeting i ($S_j > E_i$). For each test case, output the maximum number of meetings that can be attended.

Input Format

The first line contains an integer T, the number of test cases. For each test case:

- The first line contains an integer N.
- The next N lines each contain two integers S_i and E_i .

Output Format: For each test case, print a single integer: the maximum number of meetings that can be attended. **Constraints**

- $1 \leq T \leq 20$
- $1 \leq N \leq 200000$ (sum of N over all test cases ≤ 200000)
- $0 \leq S_i < E_i \leq 10^9$

Sample Input

```
1
3
1 3
2 4
3 5
```

Expected Output 2

The screenshot shows a Java application running in a debugger. The code editor displays a Java file named Main.java with the following content:

```
A_1.java > Main > main(String[] args)
1 import java.util.*;
2 class Main {
3     static class Meeting {
4         int start, end;
5         Meeting(int s, int e) {
6             start = s;
7             end = e;
8         }
9     }
10    public static void main(String[] args) {
11        Scanner sc = new Scanner(System.in);
12        int T = sc.nextInt();
13        while (T-- > 0) {
14            int N = sc.nextInt();
15            Meeting[] meetings = new Meeting[N];
16            for (int i = 0; i < N; i++) {
17                meetings[i] = new Meeting(sc.nextInt(), sc.nextInt());
18            }
19            Arrays.sort(meetings, (a, b) -> Integer.compare(a.end, b.end));
20            int count = 0;
21            int lastEnd = -1;
22            for (Meeting m : meetings) {
23                if (m.start >= lastEnd) {
24                    count++;
25                    lastEnd = m.end;
26                }
27            }
28        }
29        System.out.println(count);
30    }
31    sc.close();
32 }
33 }
```

The call stack pane shows several threads running, including "Attach Listener", "Finalizer", "Reference Handler", "Signal Dispatcher", "Notification Thread", and "Common-Cleaner". The debug console shows the output of the program.

The terminal window shows the following output:

```
PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL PORTS
```

Listening on 59384

User program running

```
→ 1
→ 3
→ 1 3
→ 2 4
→ 3 5
```

User program finished

```
2
```

