

4. Implement the optimal algorithm for Weighted Interval Scheduling (for a definition of the problem, see the slides on Canvas) in either C, C++, C#, Java, or Python. Be efficient and implement it in $O(n^2)$ time, where n is the number of jobs. We saw this problem previously in HW3 Q2a, where we saw that there was no optimal greedy heuristic.

The input will start with an positive integer, giving the number of instances that follow. For each instance, there will be a positive integer, giving the number of jobs. For each job, there will be a trio of positive integers i , j and k , where $i < j$, and i is the start time, j is the end time, and k is the weight.

A sample input is the following:

```
2
1
1 4 5
3
1 2 1
3 4 2
2 6 4
```

The sample input has two instances. The first instance has one job to schedule with a start time of 1 and an end time of 4. The second instance has 3 jobs.

For each instance, your program should output the total weight of the intervals scheduled on a separate line. Each output line should be terminated by a newline. The correct output to the sample input would be:

```
5
5
```

Note: In the third set of tests, some outputs will cause overflow on 32-bit signed integers.