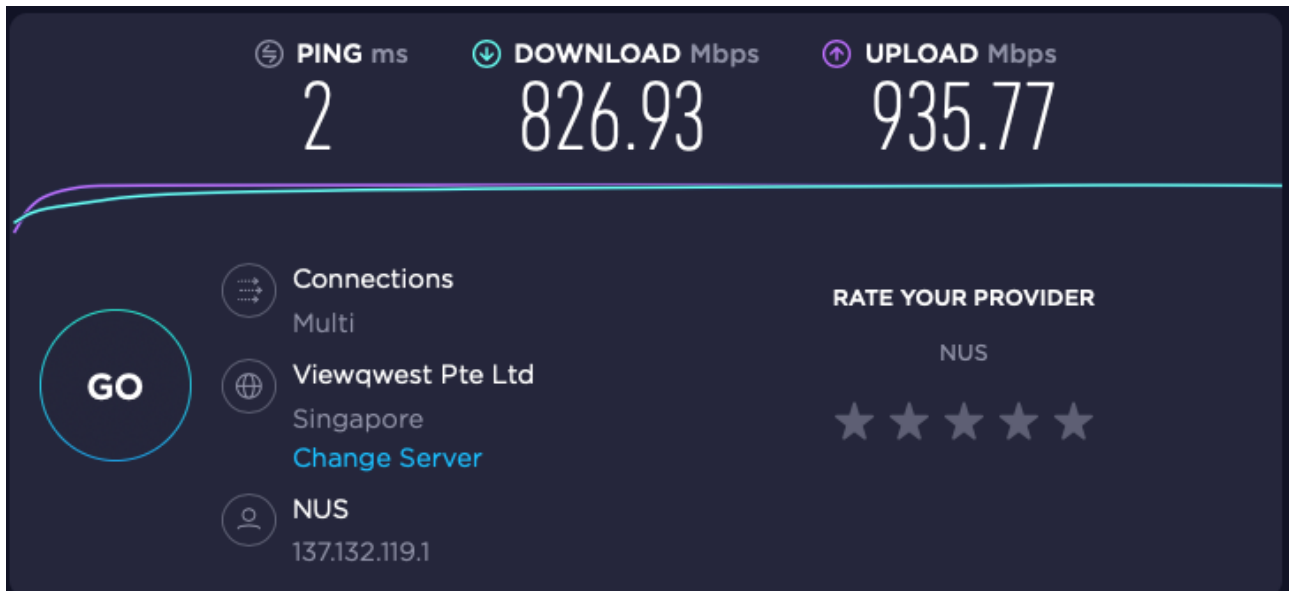


## Uncle Granda and movies

**Note:** This problem will be graded for 1%. Your coding style will contribute 30% toward your grade for the lab

Uncle Grandpa is in quarantine, and he is feeling very bored. Well, fortunately the internet here is very fast (speed test below), so he can watch 8K movies lol.



There are  $n$  movies to be shown during the day, the  $i^{th}$  movie is shown from moment  $L_i$  to moment  $R_i$ . A moment  $k$  is the moment that is exactly  $k$  minutes from the start of the day. Once Uncle Grandpa starts watching a movie, he must watch it from start to finish. Of course he can only watch one movie at a time. The time to change movies is negligible, so Uncle Grandpa can start watching a new movie right at the moment that the previous movie ends. It's guaranteed that a movie not start and end in the same moment.

Each movie has a pre-defined integer score. Please help Uncle Grandpa to choose **at most**  $m$  movies to watch so that the sum of score of watched movies is highest.

### Input

The first line contains two integers  $n, m$  ( $1 \leq m \leq n \leq 16$ ) – the number of available movies and the maximum number of movies he can choose.

The following  $n$  lines, each will contain 3 integers  $L_i, R_i, S_i$  ( $0 \leq L_i < R_i \leq 10^9, 0 \leq S_i \leq 10^8$ ) – the time that the  $i^{th}$  movie is shown and its score.

### Output

The maximum sum of score of movies that Uncle Grandpa can watch

## Examples

Input (movies1.in)	Output (movies1.out)
6 2 1 4 6 2 5 7 3 6 6 0 1 1 0 2 3 0 3 2	10

### Explanation:

In this example, one of the possible way is to choose the 2<sup>nd</sup> movie (starts at 2, ends at 5 and has a score of 7) and the 5<sup>th</sup> movie (starts at 0, ends at 2 and has a score of 3).

### Note:

1. A skeleton file has been given to help you. You should not create a new file or rename the file provided. You should develop your program using this skeleton file.
2. You are free to define your own helper methods and classes (or remove existing ones) if it is suitable but you must put all the new classes, if any, in the same skeleton file provided

## Skeleton File

You are given the skeleton file `Movies.java`. You should see the following contents when you open the file:

```
/**
 * Name      :
 * Matric. No :
 */

import java.util.*;

public class Movies {
    private void run() {

    }

    public static void main(String args[]) {
        Movies runner = new Movies();
        runner.run();
    }
}
```