

### Task (4)

The input file contains two integers  $n$  and  $p$  in the first line, followed by  $n$  lines of two integers each. The code sorts the input tuples based on the second element of each tuple. Then, it assigns each tuple to a processor such that no two tuples assigned to the same processor overlap in time. Finally, it writes the number of processors used in output file. The time complexity of this code is  $O(n^2)$  due to the nested loops used for sorting the input tuples. The time complexity of the rest of the code is  $O(n)$ .