Write two versions of a shortest-next-CPU-burst-first process scheduler algorithm, one pre-emptive and another non-pre-emptive. The algorithm always dispatches the job that has the shortest next CPU burst among the jobs that are in contention.

Input:

(i) A file in which a number of processes and their CPU bursts and I/O bursts are listed in milliseconds.

Eg:

1 0 100 30 80 75 35 70 3 (job number, arrival time, CPU burst, I/O burst, CPU burst, I/O burst..)
2 5 20 45 4 41 34 5
3 10 15 13 12 18 100

(ii) Whether to use pre-emptive algorithm or non-pre-emptive.

Assume that (i) There is a single I/O queue and a single I/O device, and FCFS algorithm (which is non-pre-emptive by definition) is used on the I/O queue. i.e, if there are two processes waiting on I/O queue, the one that reached the queue first will get access to the I/O device.
(ii) Context switch time is negligible.

Output: The processes executed on CPU, along with the time duration.

Eg: 1: 20 2:80 3:25 1:30 2:20 ... (either in a file r on standard output).