Single Worker Single Queue

The task is to simulate the functioning of a task-queue, akin to the producer-consumer problem you learned in operating systems course.

You are expected to create a program which has following functionalities

- A producer producing tasks as specified in a task-queue.
- A consumer/worker consuming tasks and processing them.
- The producer and consumer work asynchronously.

Thus, you need to

i. create two threads - one produces tasks to a queue, and other thread consumes tasks from the same queue.
ii. implement a task-queue for the single-worker single-queue system.
iii. run the program and compute the following values.
    - Cumulative departure time for each task
    - Average queue length
    - Total idle time of the server

Input to the program will be a .txt file with the first line of the file specifying the number of customers and subsequent lines giving the Arrival times and Service times of each customer. You may use the following as sample input for your program.

input.txt

```
8
0 20
10 15
15 10
35 5
30 15
10 15
5 10
5 10
```