Universidad EAFIT
ST 0257
Programming Languages
Project II

Instructions:
You must submit the solution of the following problem on or before October 6 2021.
You must submit the source code and a printed report with the source code

(The Sleeping Barber Problem [Dijktra, 1965]) A barbershop consists of a waiting room with 10 chairs and a barber room containing the barber chair. If there are no customers to be served, the barber goes to sleep. If a customer enters the barbershop and finds the barber asleep, he wakes him up.

Write a deadlock-free program to coordinate the barber and the customers. Your code must be based on the producer-consumer discussed in class. The program must read the number of chairs and it must generate a customer randomly, the client arriving time must be between 0 and 3 seconds. Each customer arrives asking for a specific cut hair style of the following:

Cut hair	Lasting time
1	500ms
2	1000ms
3	2000ms
4	3000ms

The cut hair style must be generated randomly for each client.

The program must indicate:

- When a client arrives and the number of empty chairs and the cut hair style for each client in the queue
- When the barber pick-up a client and the style asked by the client.
- When the barber drop a client and the time consumed by the client.