CSE4510: Operating Systems Laboratory (Fall'23)
Offline-3 sec: C Total-20 marks

Please do not copy codes from others/the internet. Each of the offline assignments will be evaluated with a viva. You must be able to explain your code. Any plagiarism will be severely penalized.

In a cybercafe, there are x computers. Customer comes to the café to use computer for a random time period. There is one punch card reader in the entry door (single entrance). That's why one customer can enter the café at a time.
After entering the café, customer can directly get access to a computer if at least 1 computer is free. If all the computers are occupied, then the customer has to wait until a customer has completed using the computer.
When a customer is done with using computer and logs out from the session, a record of customer is automatically sent to the counter.
In counter, there are y cashiers who process the bill of a customer. Each cashier can process bill of one customer at a time. After processing the bill, customer is given an exit pass. A customer has to use this exit pass to leave the café using the exit door.
The cashiers also have to enter the café using punch card and each cashier can come at any time.
Suppose that in a particular day total z customers visit the café. Customers come to the café at a random time interval. After all z customers have left the café, the cybercafe is closed for that day.

Sample output for x=2, y=2 and z=5;

```
Customer - 1 has arrived
Customer - 1 successfully entered
Customer - 1 waiting for computer
Cashier 1 has arrived
Cashier - 1 successfully entered
Customer - 1 has got access to computer
Customer - 2 has arrived
Customer - 3 has arrived
Customer - 2 successfully entered
Customer - 2 waiting for computer
Customer - 2 has got access to computer
Customer - 4 has arrived
Customer - 3 successfully entered
Customer - 3 waiting for computer
Customer - 2 completed and waiting in line for payment
Customer - 3 has got access to computer
Customer - 5 has arrived
Customer - 4 successfully entered
Customer - 4 waiting for computer
Cashier - 1 is processing bill of customer 2
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Customer - 5 successfully entered
Customer - 5 waiting for computer
Customer - 1 completed and waiting in line for payment
Customer - 4 has got access to computer
Customer - 3 completed and waiting in line for payment
Customer - 5 has got access to computer
Cashier - 1 has completed the billing process of customer 2
Customer - 2 has paid the bill and is leaving the cafe
Cashier - 1 is processing bill of customer 1
Cashier 2 has arrived
Cashier - 2 successfully entered
Customer - 4 completed and waiting in line for payment
Cashier - 2 is processing bill of customer 3
Cashier - 1 has completed the billing process of customer 1
Customer - 1 has paid the bill and is leaving the cafe
Cashier - 1 is processing bill of customer 4
Customer - 5 completed and waiting in line for payment
Cashier - 2 has completed the billing process of customer 3
Customer - 3 has paid the bill and is leaving the cafe
Cashier - 2 is processing bill of customer 5
Cashier - 1 has completed the billing process of customer 4
Customer - 4 has paid the bill and is leaving the cafe
Cashier - 2 has completed the billing process of customer 5
Customer - 5 has paid the bill and is leaving the cafe
Cybar cafe is closed for today
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***Note that the output is not deterministic that is always different result is produced.

Submission guideline:

Write a cpp file and rename it using your student ID and submit the cpp file.

Submission deadline: 28 Nov, 11 PM.