***CS558: Computer Systems Lab***

**Assignment-2**

**Report on Problem 3**

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**How we developed solution:**

We have created N threads for N customer and one thread for banking server. Each customer thread will continuously ask for one of three services (I.e. Net banking ,draft processing ,cheque processing).

The banking system will serve these requests by offering one request at a time. It also puts the unique voucher number to all the services it provided and keep all on log.

Here In our solution we have used Atomic integer locks so that only one thread can get the service at a time.

**Limitation:**

1.there are no ordering of customers as it happens in bank in real life.

2. At a time only one customer is served, and bank is offering only one service bank can parallelize the service counters

**Solution to Overcome Problem:**

We can introduce a waiting queue in which thread can wait in order they arrive so that they can get service fairly.

We can introduce a queuing system with 3 severs so that independent services can be served at a time with independent queues.

**Solution to 1:**

At time = 0 , Thread 1 comes::

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Thread\_1 |  |  |  |  |

At time = 1 Thread 2 comes::

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Thread\_1 | Thread\_2 |  |  |  |

At time = 2 Thread 3 comes::

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Thread\_1 | Thread\_2 | Thread\_3 |  |  |

**Solution to 2:**

For three service at a time with 3 queues:

 

|  |  |  |
| --- | --- | --- |
| Net Banking | Cheque Service | Draft Service |