CS558 Computer Systems Lab
Assignment 2 Question 3
Report

❑ Solution Approach:

For each customer, a thread is created and along with it, each customer is associated with a service. The bank started providing random services and threads running simultaneously keep checking if their desired service is being provided.
In case the thread's(customer's) desired service is being given by the main thread(bank), the customer will get his service. Otherwise, the thread(customer) will won't do any operation.
The program will terminate when all customers get their service done.

❑ Approach Limitation:

Every customer is represented by a thread which keeps on running simultaneously. The consequence of the approach is once a thread is executing its run() method, the other threads keep on busy waiting.
This leads to wastage of resources and as well as it takes more execution time. CPU cycles are being wasted continuously because of busy wait and that CPU cycles could be used for useful operations

❑ Solution for limitation:

The above limitation can be overcome by use of wait() and notify() methods. Such that if any thread's desired service is not being served by main thread at that time, the thread will wait(blocked).
In this scenario, only the appropriate thread will get executed and upon completion, it will notifyAll() to unblock the blocked threads.

The patch file for the solution of problem 1 can be found in the specified link.
https://drive.google.com/open?id=1dOweP34jUwPBwrzykNW7dAGF5ult0xJu