

## CNT 4714 – Project 1 – Summer 2022

**Title:** “Project 1: An Application Employing Synchronized/Cooperating Multiple Threads In Java Using Locks – A Banking Simulator”

**Points:** 100 points

**Due Date:** Sunday June 5, 2022 by 11:59 pm (WebCourses time)

**Objectives:** To practice programming cooperating, synchronized multiple threads of execution.

**Description:** In this programming assignment you will simulate the deposits and withdrawals made to a fictitious bank account (I'll let you use my real bank account if you promise to make only deposits! ☺). In this case the deposits and withdrawals will be made by user agents (synchronized threads). Synchronization is required for two reasons – (1) mutual exclusion (updates cannot be lost) and (2) because a withdrawal cannot occur if the amount of the withdrawal request is greater than the current balance in the account. This means that access to the account (the shared object) must be synchronized. This application requires cooperation and communication amongst the various agents (cooperating synchronized threads). (In other words, this problem is similar to the producer/consumer problem where there is more than one producer and more than one consumer process active simultaneously.) If a withdrawal agent attempts to withdraw an amount greater than the current balance in the account – then it must block itself and wait until a depositing agent has added money to the account before it can try again. As we covered in the lecture notes, this will require that the depositing agents signal all waiting withdrawing agents whenever a deposit is completed.

1. You should have **five depositor** agents (threads) and **ten withdrawal** agents (threads) simultaneously executing. Use a `FixedThreadPool()` and an `Executor` object to control the threads.
2. To keep things relatively simple, as well as to see immediate results from a series of transactions (deposits and withdrawals), assume that deposits are made in amounts ranging from \$1 to \$500 (whole dollars only) and withdrawals are made in amounts ranging from \$1 to \$99 (again, whole dollars only). Since we have more withdrawal threads than depositor threads, the account balance should constantly decrease over time. This will lead to withdrawal agents repeatedly blocking for insufficient funds. Start the simulation with a balance of \$0.

3. Once a depositor agent (thread) has deposited into the account, put it to sleep for few milliseconds (randomly generate this number – don’t use a constant sleep time) or so (depends a little bit on the speed of your system as to how long you will want to sleep the depositing threads - basically we want to ensure a lot more withdrawals than deposits) to allow other agents to execute. This is the only situation in which a deposit agent will block.
4. For withdrawal agents, things will be a bit different depending on whether you are working on a single or multi-core processor.
  - a. For single core processors, once a withdrawal agent has withdrawn funds from the account, have it yield the processor unit. Since the agent is giving up the processor voluntarily, it will be unlikely to run again (attempt a second withdrawal in a row), before another agent runs. Note however, that it does not prevent it from running again, if all other withdrawal agents are blocked and all depositors are sleeping, it will run again. So occasional back-to-back runs of withdrawal agents might occur (see below).
  - b. For multi-core processors, once a withdrawal agent has executed, have it sleep for some random period of time (again, a few milliseconds should be fine). Depending on which core a thread is executing, yielding the CPU won’t ensure that the same thread will not run again immediately. While, sleeping the thread will also not ensure that it will not run two or more times in succession, it is less likely to do so in the multi-core environment.
  - c. What we don’t want to happen is a single withdrawal agent gaining the CPU and then executing a long sequence of withdrawal operations. Recall though that withdrawal agents block if they attempt to withdraw more than the current balance in the account.
  - d. Similarly, we don’t want depositor agents monopolizing the CPU either and causing the balance in the account to grow continuously. This would most likely occur when the withdrawal agents are sleeping too long in comparison to the average sleep time of the depositing agents. See page 8 for an illustration of this.
5. Assume all threads have the same priority. **Do not** give different priority to depositor and withdrawal agents (threads).
6. The output from your program must look reasonably similar to the sample output shown below.

7. **Do not put the threads into a counted loop for your simulation.** In other words, the `run()` method for all threads should be an infinite loop. Just stop the simulation from your IDE after a few seconds.
8. **Do not use the Java synchronized statement.** I want you to handle the locking and signaling yourself. No monitors!
9. You must utilize a reentrant lock from the `java.util.concurrent.locks` package for implementing your locking protocols. We will specify no fairness policy for this application. **Do not create your own lock using a Boolean or any other type of variable.**
10. The Money Laundering Suppression Act, enacted by Congress in 1994, is a policy regulation that requires banking institutions to file currency transaction reports (CTRs) with the federal government (Department of the Treasury) for any deposits of \$10,000 or more into a bank account. You are going to simulate this process by flagging any depositing transaction with a deposit value greater than \$350.00 and any withdrawal amount greater than \$75.00. You will flag the transaction in the normal output of the simulation as well as making an entry into a transaction log file which will keep track of all flagged transactions independently of the simulation. See below for more details.

### References:

Notes: Lecture Notes for Multithreaded Applications.

### Restrictions:

Your source files shall begin with comments containing the following information:

```
/* Name:  
Course: CNT 4714 Summer 2022  
Assignment title: Project 1 – Synchronized, Cooperating Threads Under Locking  
Due Date: June 5, 2022  
*/
```

**Input Specification:** Internal to the program.

**Output Specification:** Console based. Your output should appear reasonably similar to the output shown below.

**Deliverables:**

- (1) Zip up all of your .java files and submit them via WebCourses no later than 11:59pm Sunday June 5, 2022.
- (2) Include at least one screen shot which illustrates the execution of your synchronized threaded application. See below for some representative examples. You can either do a screen shot of the console window like I did below or redirect your output to a file and take a screen shot from an editor. Your screenshot should illustrate all the different types of output we expect to see. Include more than one screenshot if necessary. Label all screenshots clearly.
- (3) Include a screenshot of the simulation output and copy of your transaction log file that matches the simulation output (see below for explanation).

**Additional Information:**

Shown below are some examples of the output from this program to help illustrate how your application is to operate and display the results. The last page illustrates execution runs that you do not want to produce.

eclipse-workspace-2022-03 - CNT 4714 - Project 1 - Summer 2022/src/project1V2/ABankAcco

Declaration Console X

```
<terminated> ABankingSimulator (1) [Java Application] /Library/Java/JavaVirtualMachines/jdk-18.0.1.1.jdk/Contents/Home/bin/java (May 22, 2022, 5:07:30 PM – 5:07:38 PM) [pid: 32769]
```

Deposit Agents	Withdrawal Agents	Balance
	Agent WT3 withdraws \$80 Agent WT4 withdraws \$65 Agent WT6 withdraws \$71 Agent WT5 withdraws \$32	(*****) WITHDRAWAL BLOCKED – INSUFFICIENT FUNDS!!! (*****) WITHDRAWAL BLOCKED – INSUFFICIENT FUNDS!!! (*****) WITHDRAWAL BLOCKED – INSUFFICIENT FUNDS!!! (*****) WITHDRAWAL BLOCKED – INSUFFICIENT FUNDS!!!
Agent DT3 deposits \$321	Agent WT2 withdraws \$65	(+) Balance is \$321 (-) Balance is \$256
Agent DT4 deposits \$229	Agent WT1 withdraws \$80	(+) Balance is \$485 (-) Balance is \$405
* * * Flagged Transaction – WIthdrawal Agent WT1 Made A Withdrawal In Excess Of \$75.00 USD – See Flagged Transaction Log.		
	Agent WT7 withdraws \$33 Agent WT8 withdraws \$50	(-) Balance is \$372 (-) Balance is \$322
Agent DT1 deposits \$359		(+) Balance is \$681
* * * Flagged Transaction – Depositor Agent DT1 Made A Deposit In Excess Of \$350.00 USD – See Flagged Transaction Log.		
	Agent WT9 withdraws \$87	(-) Balance is \$594
* * * Flagged Transaction – WIthdrawal Agent WT9 Made A Withdrawal In Excess Of \$75.00 USD – See Flagged Transaction Log.		
Agent DT0 deposits \$73 Agent DT2 deposits \$52	Agent WT0 withdraws \$73 Agent WT2 withdraws \$58 Agent WT4 withdraws \$30 Agent WT3 withdraws \$24 Agent WT8 withdraws \$38 Agent WT8 withdraws \$57 Agent WT7 withdraws \$38 Agent WT5 withdraws \$40	(+) Balance is \$667 (+) Balance is \$719 (-) Balance is \$646 (-) Balance is \$588 (-) Balance is \$558 (-) Balance is \$534 (-) Balance is \$496 (-) Balance is \$439 (-) Balance is \$401 (-) Balance is \$361
Agent DT4 deposits \$3	Agent WT9 withdraws \$85	(+) Balance is \$364 (-) Balance is \$279
* * * Flagged Transaction – WIthdrawal Agent WT9 Made A Withdrawal In Excess Of \$75.00 USD – See Flagged Transaction Log.		
	Agent WT6 withdraws \$16 Agent WT5 withdraws \$68 Agent WT1 withdraws \$40 Agent WT7 withdraws \$12 Agent WT0 withdraws \$80	(-) Balance is \$263 (-) Balance is \$195 (-) Balance is \$155 (-) Balance is \$143 (-) Balance is \$63
* * * Flagged Transaction – WIthdrawal Agent WT0 Made A Withdrawal In Excess Of \$75.00 USD – See Flagged Transaction Log.		
Agent DT0 deposits \$162	Agent WT4 withdraws \$36 Agent WT7 withdraws \$36 Agent WT0 withdraws \$17 Agent WT9 withdraws \$30 Agent WT4 withdraws \$38	(+) Balance is \$225 (-) Balance is \$189 (-) Balance is \$153 (-) Balance is \$136 (-) Balance is \$106 (-) Balance is \$68
Agent DT1 deposits \$114	Agent WT3 withdraws \$57 Agent WT2 withdraws \$19 Agent WT6 withdraws \$79	(+) Balance is \$182 (-) Balance is \$125 (-) Balance is \$106 (-) Balance is \$27
* * * Flagged Transaction – WIthdrawal Agent WT6 Made A Withdrawal In Excess Of \$75.00 USD – See Flagged Transaction Log.		
Agent DT0 deposits \$193	Agent WT8 withdraws \$5 Agent WT5 withdraws \$8 Agent WT1 withdraws \$70 Agent WT8 withdraws \$8 Agent WT0 withdraws \$27 Agent WT5 withdraws \$36 Agent WT6 withdraws \$77	(-) Balance is \$22 (+) Balance is \$215 (-) Balance is \$207 (-) Balance is \$137 (-) Balance is \$129 (-) Balance is \$102 (-) Balance is \$66 (*****) WITHDRAWAL BLOCKED – INSUFFICIENT FUNDS!!!

The transaction log file showing the first six flagged transactions in the execution run shown above.

```
~/eclipse-workspace-2022-03/CNT 4714 - Project 1 - Summer 2022/transactions.txt UNREGISTERED transactions.txt +\n1 | Withdrawal Agent WT1 issued withdrawal of $80.00 at: 22/05/2022 17:07:31 EDT\n2 |\n3 |\n4 Depositor Agent DT1 issued deposit of $359.00 at: 22/05/2022 17:07:31 EDT\n5 |\n6 Withdrawal Agent WT9 issued withdrawal of $87.00 at: 22/05/2022 17:07:31 EDT\n7 |\n8 Withdrawal Agent WT9 issued withdrawal of $85.00 at: 22/05/2022 17:07:31 EDT\n9 |\n10 Withdrawal Agent WT0 issued withdrawal of $80.00 at: 22/05/2022 17:07:31 EDT\n11 |\n12 Withdrawal Agent WT6 issued withdrawal of $79.00 at: 22/05/2022 17:07:31 EDT\n13 |\n14 Depositor Agent DT4 issued deposit of $382.00 at: 22/05/2022 17:07:32 EDT\n15 |\n16 Withdrawal Agent WT2 issued withdrawal of $82.00 at: 22/05/2022 17:07:32 EDT\n17 |\n18 Withdrawal Agent WT9 issued withdrawal of $86.00 at: 22/05/2022 17:07:32 EDT\n19 |\n20 Withdrawal Agent WT3 issued withdrawal of $87.00 at: 22/05/2022 17:07:32 EDT\n21 |\n22 Depositor Agent DT2 issued deposit of $357.00 at: 22/05/2022 17:07:32 EDT\n23 |\n24 Withdrawal Agent WT1 issued withdrawal of $83.00 at: 22/05/2022 17:07:32 EDT\n25 |\n26 Withdrawal Agent WT8 issued withdrawal of $94.00 at: 22/05/2022 17:07:32 EDT\n27 |\n28 Depositor Agent DT1 issued deposit of $402.00 at: 22/05/2022 17:07:32 EDT\n29 |\n30 Withdrawal Agent WT3 issued withdrawal of $75.00 at: 22/05/2022 17:07:32 EDT\n31 |
```

```
Agent DT2 deposits $357          Agent WT2 withdraws $9      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!\n(*+) Balance is $357\n\n* * * Flagged Transaction - Depositor Agent DT2 Made A Deposit In Excess Of $350.00 USD - See Flagged Transaction Log.\n\n          Agent WT2 withdraws $34      (-) Balance is $323\n          Agent WT8 withdraws $23      (-) Balance is $300\n          Agent WT3 withdraws $31      (-) Balance is $269\n          Agent WT1 withdraws $83      (-) Balance is $186\n\n* * * Flagged Transaction - Withdrawal Agent WT1 Made A Withdrawal In Excess Of $75.00 USD - See Flagged Transaction Log.\n\n          Agent WT9 withdraws $23      (-) Balance is $163\n          Agent WT8 withdraws $24      (-) Balance is $139\n          Agent WT8 withdraws $94      (-) Balance is $45\n\n* * * Flagged Transaction - Withdrawal Agent WT8 Made A Withdrawal In Excess Of $75.00 USD - See Flagged Transaction Log.\n\n          Agent WT3 withdraws $37      (-) Balance is $8\n          Agent WT5 withdraws $52      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!\n          Agent WT2 withdraws $96      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!\n          Agent WT1 withdraws $10      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!\n          Agent WT6 withdraws $90      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!\n          Agent WT7 withdraws $45      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!\n          Agent WT0 withdraws $87      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!\n          Agent WT4 withdraws $95      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!\n          Agent WT8 withdraws $63      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!\n          Agent WT3 withdraws $97      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!\n          Agent WT9 withdraws $94      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!\n\nAgent DT1 deposits $402          (*+) Balance is $410\n\n* * * Flagged Transaction - Depositor Agent DT1 Made A Deposit In Excess Of $350.00 USD - See Flagged Transaction Log.\n\n          Agent WT7 withdraws $27      (-) Balance is $383\n          Agent WT0 withdraws $46      (-) Balance is $337\n          Agent WT5 withdraws $30      (-) Balance is $307\n          Agent WT2 withdraws $66      (-) Balance is $241\n          Agent WT3 withdraws $75      (-) Balance is $166\n\n* * * Flagged Transaction - Withdrawal Agent WT3 Made A Withdrawal In Excess Of $75.00 USD - See Flagged Transaction Log.
```

All withdrawal threads are blocked. No withdrawal thread can run until a depositor thread runs.

```

Agent WT9 withdraws $29      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT6 withdraws $68      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT2 withdraws $39      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT3 withdraws $96      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent DT2 deposits $141      (+) Balance is $153
Agent WT6 withdraws $87      (-) Balance is $66

* * * Flagged Transaction - Withdrawal Agent WT6 Made A Withdrawal In Excess

Agent WT5 withdraws $42      (-) Balance
Agent WT4 withdraws $6       (-) Balance
Agent WT0 withdraws $52      (*****) WITH
Agent WT1 withdraws $9       (-) Balance
Agent WT9 withdraws $98      (*****) WITH
Agent WT1 withdraws $84      (*****) WITH
Agent WT4 withdraws $19      (*****) WITH
Agent WT5 withdraws $60      (*****) WITH
Agent WT2 withdraws $99      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT7 withdraws $48      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT3 withdraws $34      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT8 withdraws $1       (-) Balance is $8
Agent WT6 withdraws $79      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT8 withdraws $76      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!

Agent DT1 deposits $110      (+) Balance is $118
Agent WT2 withdraws $44      (-) Balance is $74
Agent WT2 withdraws $66      (-) Balance is $8

Agent DT4 deposits $26       Agent WT4 withdraws $85      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
                                                (+) Balance is $34
Agent WT5 withdraws $42      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT1 withdraws $57      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT6 withdraws $93      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT0 withdraws $12      (-) Balance is $22
Agent WT7 withdraws $45      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
                                                (+) Balance is $321
Agent DT0 deposits $299      Agent WT4 withdraws $76      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
                                                (-) Balance is $245

* * * Flagged Transaction - Withdrawal Agent WT4 Made A Withdrawal In Excess Of $75.00 USD - See Flagged Transaction Log.

```

Withdrawal thread WT2

runs two times in a row.

This is ok. It may

happened from time to time.

```

* * * Flagged Transaction - Withdrawal Agent WT0 Made A Withdrawal In Excess

Agent WT4 withdraws $66      (-) Balance is $6
Agent WT1 withdraws $70      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT3 withdraws $20      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT9 withdraws $20      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT1 withdraws $47      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT4 withdraws $69      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT5 withdraws $64      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT8 withdraws $35      (*****) WITHD
Agent WT7 withdraws $69      (*****) WITHD
Agent WT0 withdraws $35      (*****) WITHD
Agent WT6 withdraws $72      (*****) WITHD
Agent WT2 withdraws $71      (*****) WITHD

Agent DT2 deposits $129      (+) Balance is $135
Agent WT6 withdraws $3       (-) Balance is $132
Agent WT5 withdraws $68      (-) Balance is $64
Agent WT7 withdraws $94      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT3 withdraws $96      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT2 withdraws $56      (-) Balance is $8
Agent WT9 withdraws $26      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT0 withdraws $49      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT8 withdraws $42      (-) Balance is $16
Agent WT2 withdraws $20      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT4 withdraws $34      (-) Balance is $16
Agent WT6 withdraws $39      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!
Agent WT5 withdraws $3       (-) Balance is $16
Agent WT1 withdraws $43      (*****) WITHDRAWAL BLOCKED - INSUFFICIENT FUNDS!!!

Agent DT2 deposits $125      Agent WT1 withdraws $5      (-) Balance is $16
Agent WT2 withdraws $69      Agent WT2 withdraws $69      (-) Balance is $16
Agent WT0 withdraws $40      Agent WT0 withdraws $40      (-) Balance is $16

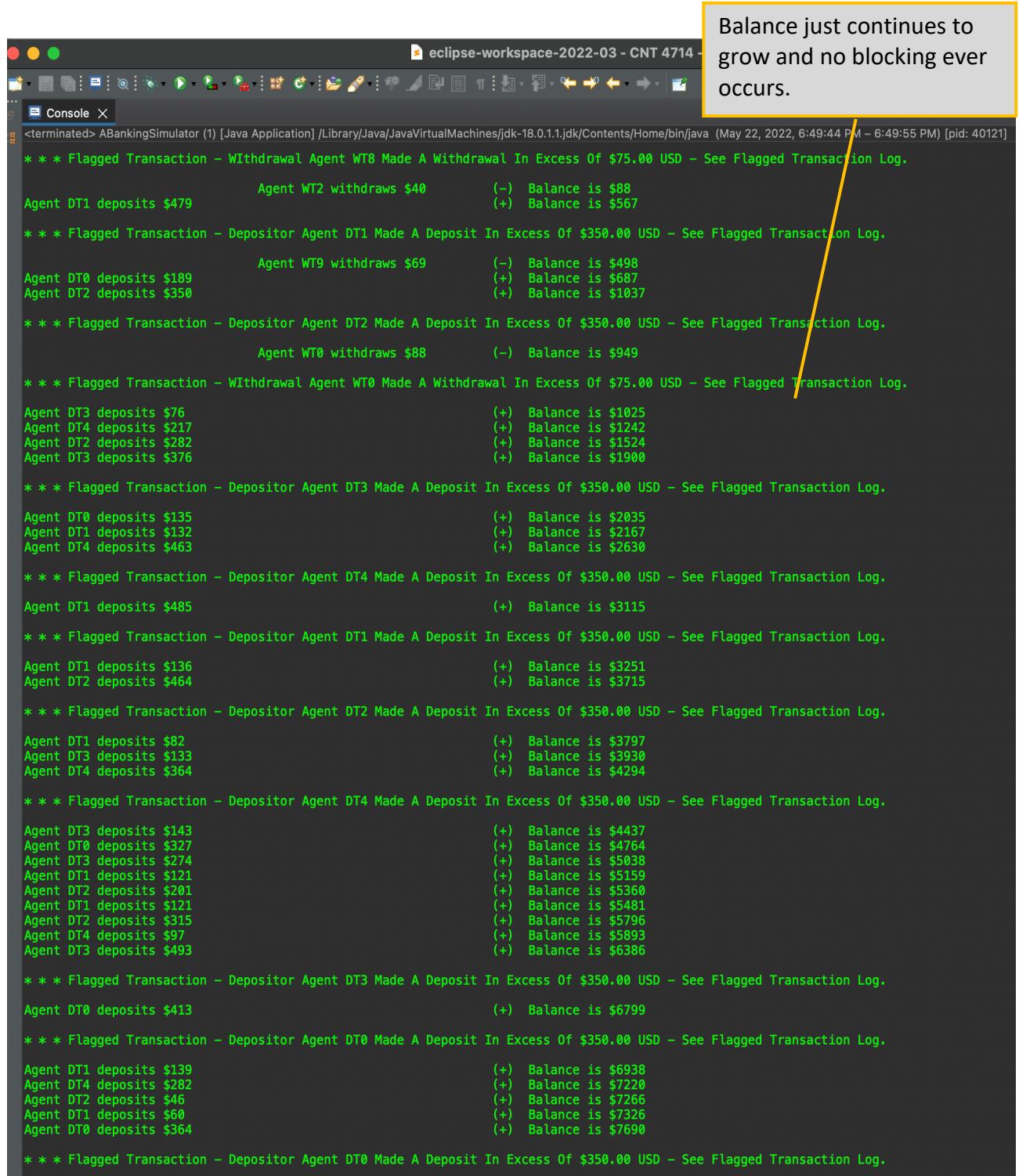
```

1. Withdrawal agent WT6 is blocked (along with other withdrawal agents).

2. Deposit agent DT2 makes deposit and signals all waiting withdrawal agents.

3. Withdrawal agents WT6 and WTS manage to make new withdrawals, but bleed the account balance down so that subsequent withdrawal agents once again find an insufficient balance and become blocked again.

We don't want to see this sort of scenario where the depositors are monopolizing the account. Indication is the depositor threads aren't sleeping long enough or the withdrawal threads are sleeping too long.



Balance just continues to grow and no blocking ever occurs.

```
eclipse-workspace-2022-03 - CNT 4714 - <terminated> ABankingSimulator (1) [Java Application] /Library/Java/JavaVirtualMachines/jdk-18.0.1.jdk/Contents/Home/bin/java (May 22, 2022, 6:49:44 PM – 6:49:55 PM) [pid: 40121]
* * * Flagged Transaction – W1thdrawal Agent WT8 Made A Withdrawal In Excess Of $75.00 USD – See Flagged Transaction Log.
Agent WT2 withdraws $40      (-) Balance is $88
Agent DT1 deposits $479      (+) Balance is $567

* * * Flagged Transaction – Depositor Agent DT1 Made A Deposit In Excess Of $350.00 USD – See Flagged Transaction Log.
Agent WT9 withdraws $69      (-) Balance is $498
Agent DT0 deposits $189      (+) Balance is $687
Agent DT2 deposits $350      (+) Balance is $1037

* * * Flagged Transaction – Depositor Agent DT2 Made A Deposit In Excess Of $350.00 USD – See Flagged Transaction Log.
Agent WT0 withdraws $88      (-) Balance is $949

* * * Flagged Transaction – W1thdrawal Agent WT0 Made A Withdrawal In Excess Of $75.00 USD – See Flagged Transaction Log.
Agent DT3 deposits $76      (+) Balance is $1025
Agent DT4 deposits $217      (+) Balance is $1242
Agent DT2 deposits $282      (+) Balance is $1524
Agent DT3 deposits $376      (+) Balance is $1900

* * * Flagged Transaction – Depositor Agent DT3 Made A Deposit In Excess Of $350.00 USD – See Flagged Transaction Log.
Agent DT0 deposits $135      (+) Balance is $2035
Agent DT1 deposits $132      (+) Balance is $2167
Agent DT4 deposits $463      (+) Balance is $2630

* * * Flagged Transaction – Depositor Agent DT4 Made A Deposit In Excess Of $350.00 USD – See Flagged Transaction Log.
Agent DT1 deposits $485      (+) Balance is $3115

* * * Flagged Transaction – Depositor Agent DT1 Made A Deposit In Excess Of $350.00 USD – See Flagged Transaction Log.
Agent DT1 deposits $136      (+) Balance is $3251
Agent DT2 deposits $464      (+) Balance is $3715

* * * Flagged Transaction – Depositor Agent DT2 Made A Deposit In Excess Of $350.00 USD – See Flagged Transaction Log.
Agent DT1 deposits $82      (+) Balance is $3797
Agent DT3 deposits $133      (+) Balance is $3930
Agent DT4 deposits $364      (+) Balance is $4294

* * * Flagged Transaction – Depositor Agent DT4 Made A Deposit In Excess Of $350.00 USD – See Flagged Transaction Log.
Agent DT3 deposits $143      (+) Balance is $4437
Agent DT0 deposits $327      (+) Balance is $4764
Agent DT3 deposits $274      (+) Balance is $5038
Agent DT1 deposits $121      (+) Balance is $5159
Agent DT2 deposits $281      (+) Balance is $5360
Agent DT1 deposits $121      (+) Balance is $5481
Agent DT2 deposits $315      (+) Balance is $5796
Agent DT4 deposits $97      (+) Balance is $5893
Agent DT3 deposits $493      (+) Balance is $6386

* * * Flagged Transaction – Depositor Agent DT3 Made A Deposit In Excess Of $350.00 USD – See Flagged Transaction Log.
Agent DT0 deposits $413      (+) Balance is $6799

* * * Flagged Transaction – Depositor Agent DT0 Made A Deposit In Excess Of $350.00 USD – See Flagged Transaction Log.
Agent DT1 deposits $139      (+) Balance is $6938
Agent DT4 deposits $282      (+) Balance is $7220
Agent DT2 deposits $46      (+) Balance is $7266
Agent DT1 deposits $60      (+) Balance is $7326
Agent DT0 deposits $364      (+) Balance is $7690

* * * Flagged Transaction – Depositor Agent DT0 Made A Deposit In Excess Of $350.00 USD – See Flagged Transaction Log.
```