

Problem Set 3

(10 points) Cohort Exercise 1:

Name Your Solution: FactorPrimeMultiThreadNoInterrupt.java

(10 points) Cohort Exercise 2:

Name Your Solution: FactorPrimeMultiThreadInterrupt.java

(10 points) Cohort Exercise 3:

Name Your Solution: LockStaticVariablesFixed.java

(10 points) Cohort Exercise 4:

Name Your Solution: BufferFixed.java

(10 points) Cohort Exercise 5:

Name Your Solution: DiningPhilDemo.java

(10 points) Cohort Exercise 6:

Name Your Solution: DLExampleTest.java

(40 points) Homework Question:

Continue with Cohort Exercise 2. Assume that you would like to further speed up the factoring using multiple computers. Assume that there are 11 computers. One runs a server program and 10 runs a client program. For simplicity, assume that the clients know the IP of the server and the server knows there are exactly 10 clients connecting. The server program works as follows. The user inputs the number on the server; the server sends the number to all clients (along with additional information if necessary) and waits for an answer from any client. Once an answer is received, the server sends a message to all clients to sign that task has been completed. The client program works as follows. After establishing connection with the server, the client waits a number from the server. Once received, the client starts factoring the number. Once a factor is found, the client sends the factor back to the server. Anytime the client received a message stating that the task has been completed, the clients stop factoring.

For an example of connecting Server and a client, refer to EchoServer.java and EchoClient.java. To run the programs, modify the IP in EchoClient.java to be the IP of the machine running EchoServer.java (i.e., "localhost" if it is on the same machine), run EchoServer.java first and then EchoClient.java.

Name Your Solution: final.java