

Programming Assignment #1

CSEE 4119: Computer Networks

Spring 2012

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Administrative Details

- Due Feb 28th – NO LATE DAYS!!!!
- Start early – the assignment is long (4 parts), and will take a lot of work.
- **NO CHEATING**
 - We will deal with this **harshly**
 - Discussion/Collaboration of high level problems encouraged
 - You should never be showing friends your code, or speaking in Java, instead of English 😊

How to start

- Download 1) ZIP file containing code, and 2) assignment description, **tomorrow** from course website.
- Language: **JAVA** (Download Eclipse!)
 - If you're uncomfortable in Java, talk to us, and you can do the assignment in C if you'd like (we'll provide you with makefile for C)
- See Assignment description for more details

Submission/Grading

- NOTE ON SUBMISSION

- Must log on to CLIC machines, and run a program we have provided to submit assignment (“make submit”)
- Make sure your program compiles on these machines.
- Can submit as many times as you’d like – only last one matters.

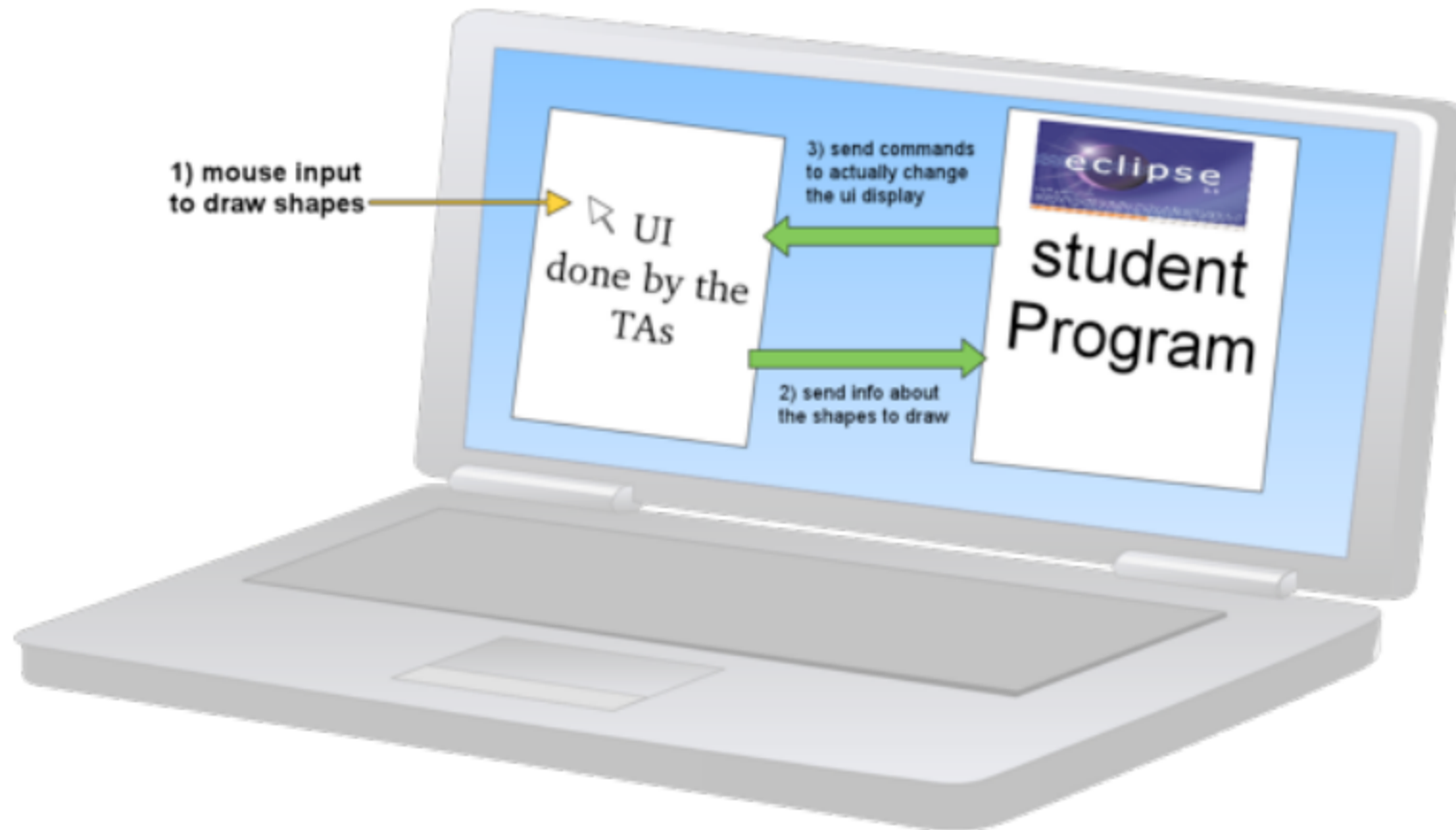
- GRADING

- Assignment will be graded using **automated tests**.
- Doesn’t compile? 0 points
- Program doesn’t follow format we specified? Harsh penalties
 - Doesn’t accept command line arguments as we specify
 - Doesn’t connect to correct ports
 - **The automatic tests will fail!**

Overview

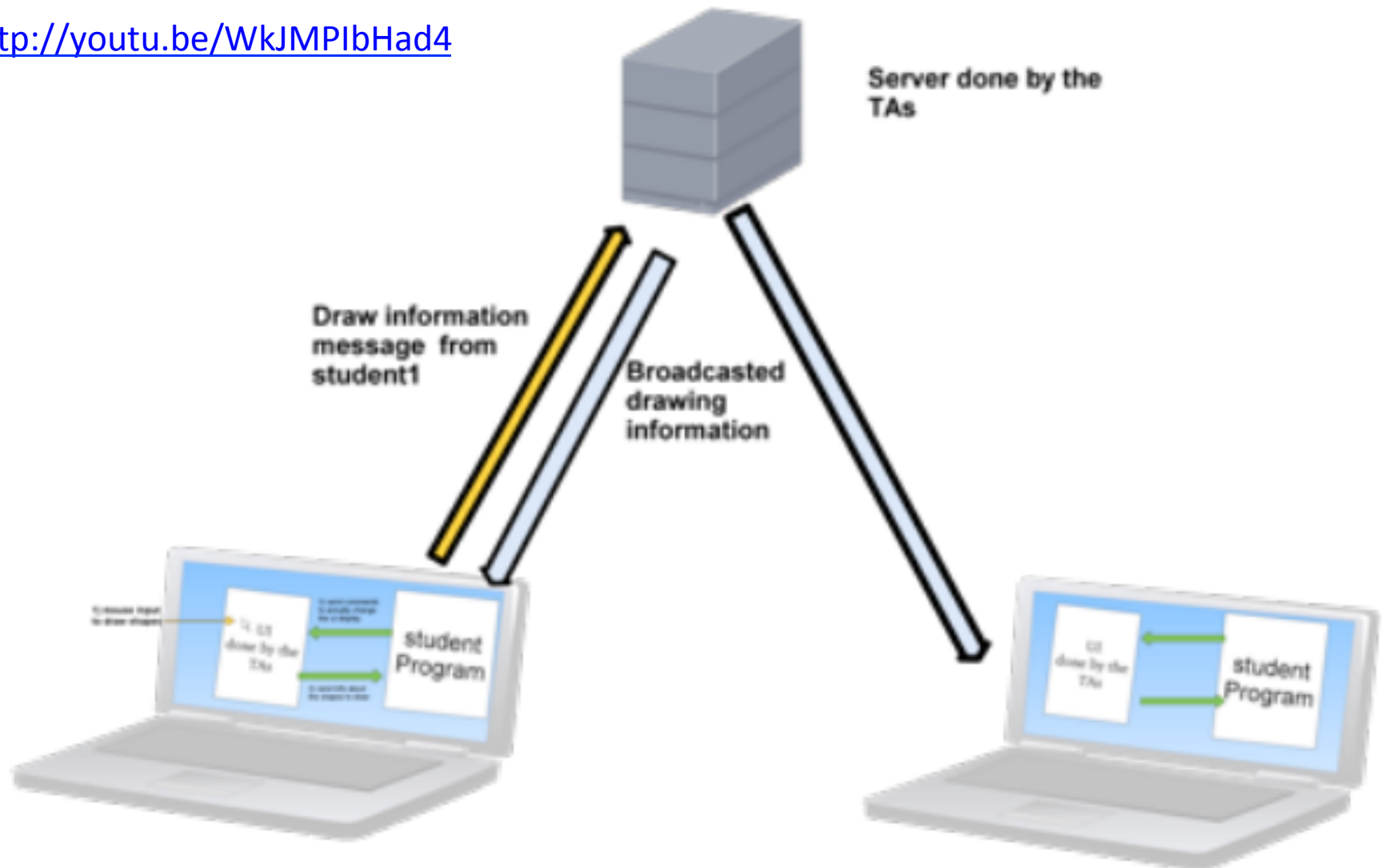
- Goals
 - Write **Application Layer** program
 - Learn basics of socket programming over TCP
 - Building a “collaborative shape drawer”
 - <http://www.youtube.com/watch?v=QlIMZfeKHdY&feature=youtu.be>
 - Build a reliable protocol (over unreliable connection)

Step 1: Local Drawing (25%)

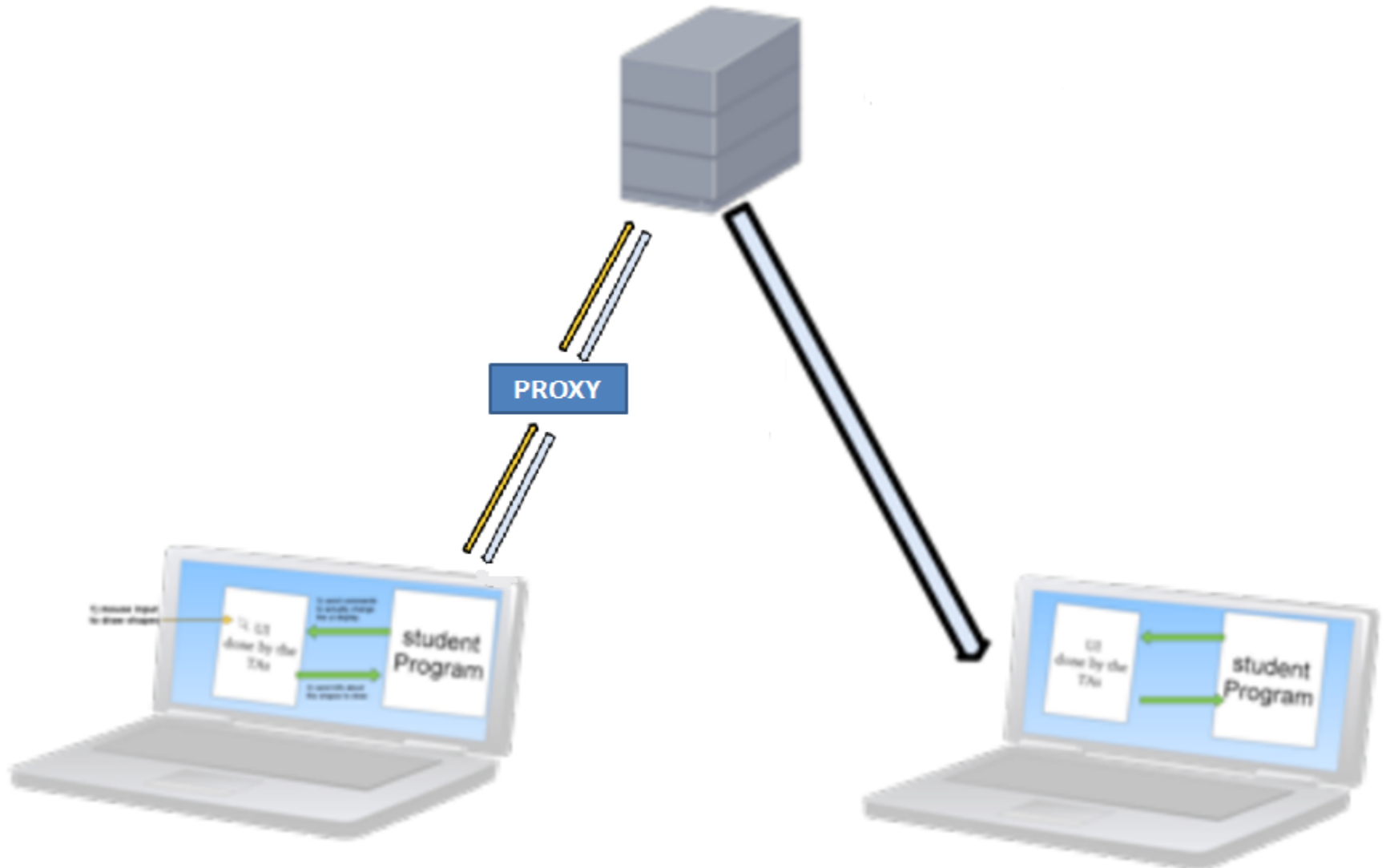


Step 2: Collaborate! (35%)

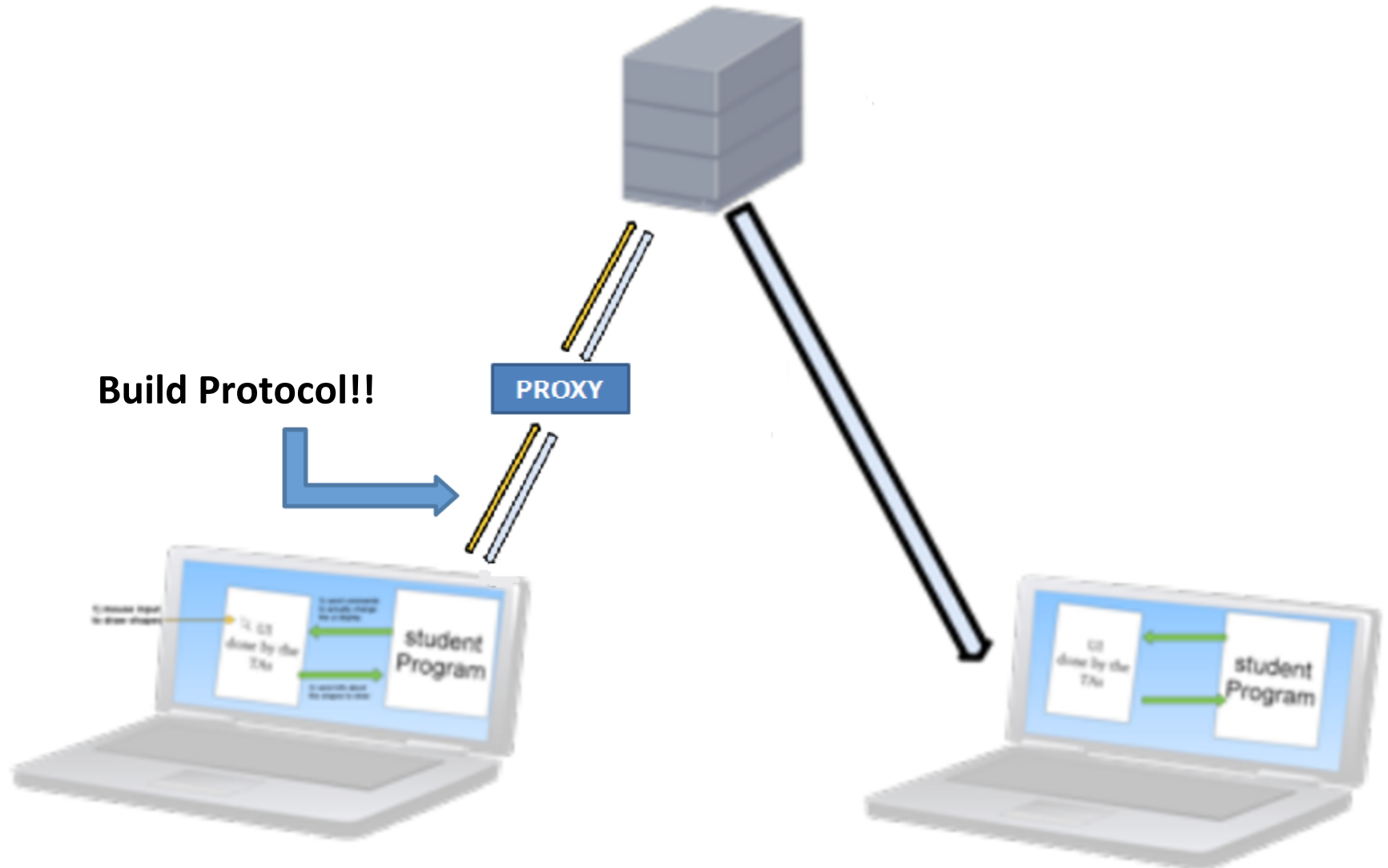
<http://youtu.be/WkJMP1bHad4>



Step 3: Add Proxy (30%)

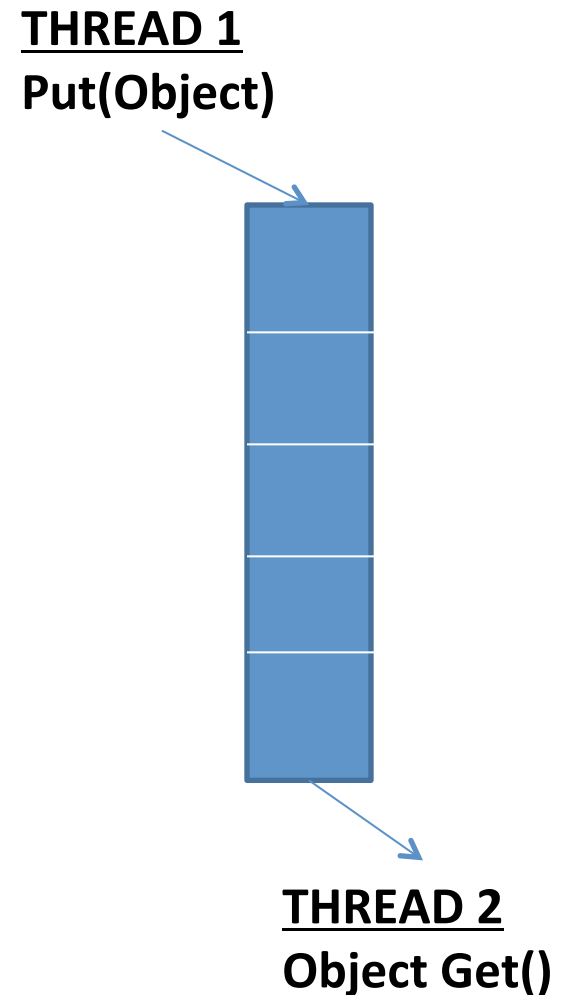


Step 4: Filter w/Proxy (10%)



Bounded Buffer

- We are going to give you the code of a **bounded buffer**.
- It is a thread-safe, FIFO data structure.
 - FIFO: The first item that you will put in it, will be the first to go out of it.
 - Thread-safe: Different part of your program can access it in parallel with no concurrency issues.
- There will be a program included in the assignment to demonstrate how to use the bounded buffer



GOOD LUCK!!

COME TO OFFICE HOURS IF YOU NEED HELP!!