

# Programming Assignment #1

CSEE 4119: Computer Networks

Spring 2012

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# Administrative Details

- Due Feb 28<sup>th</sup> – 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.

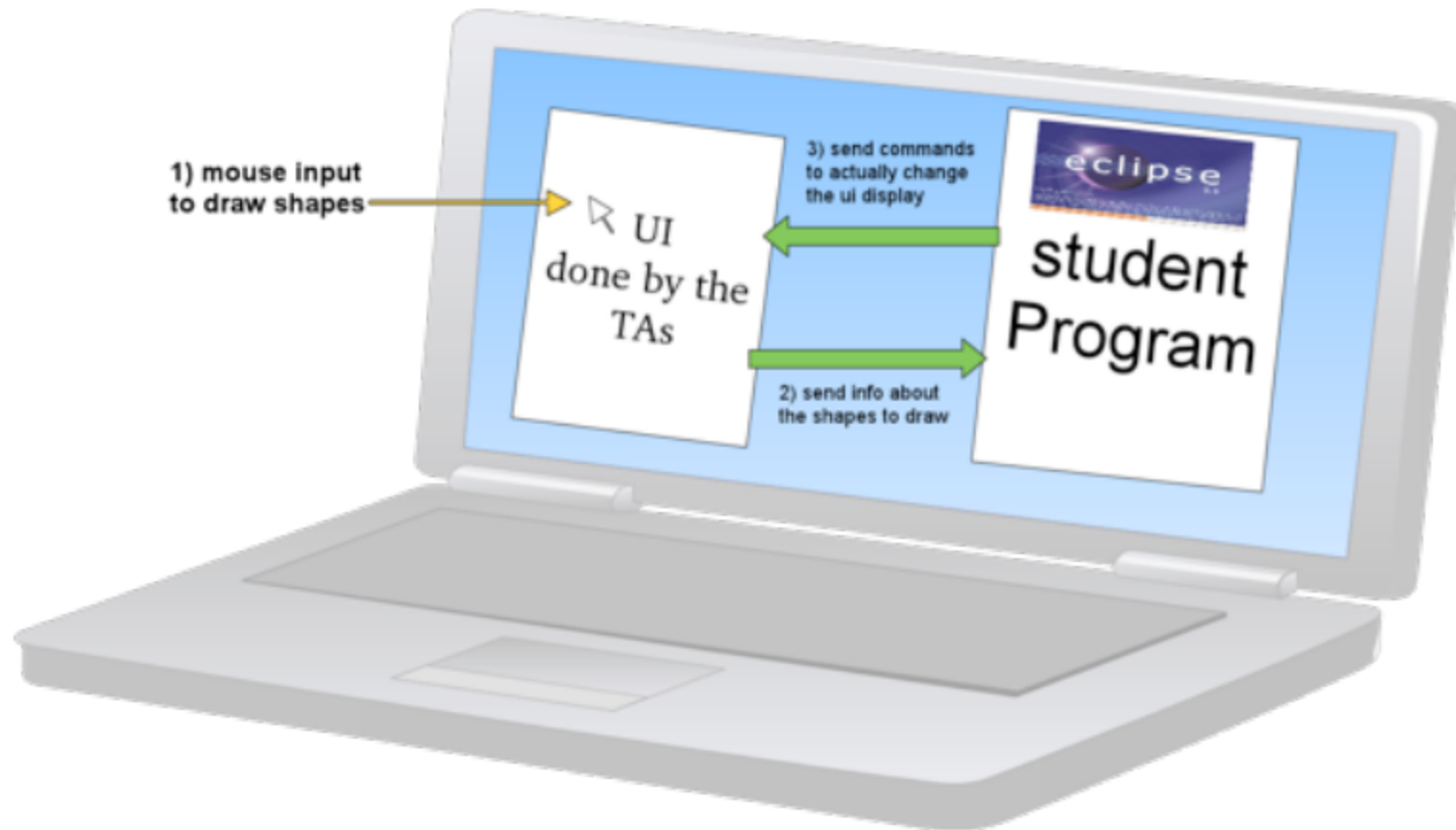
- GRADING

- 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

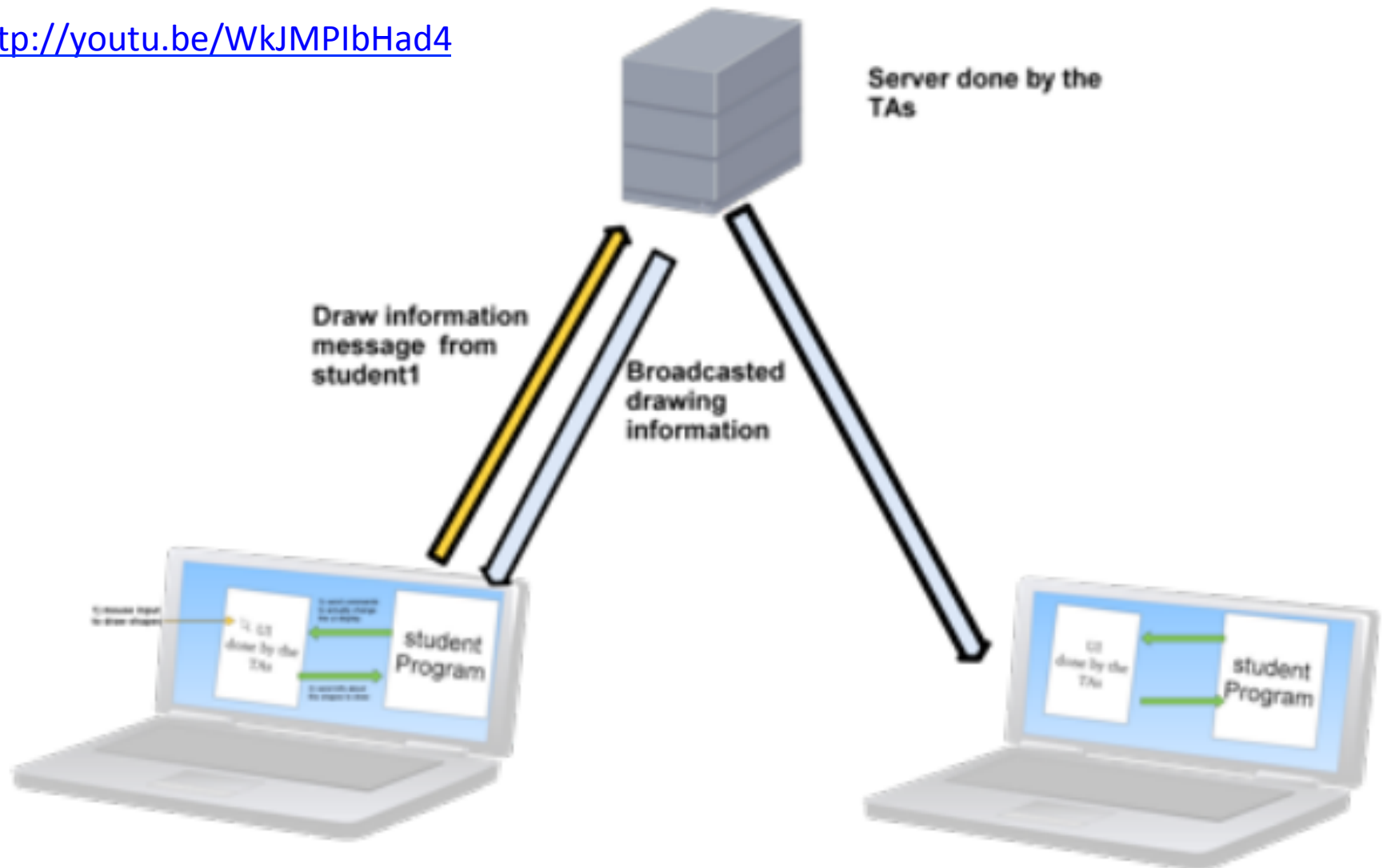
- Goals
  - Write **Application Layer** program
  - Learn basics of socket programming over TCP
  - Building a “collaborative shape drawer”
    - <http://www.youtube.com/watch?v=QlIMZfeKHdY&feature=youtu.be>
  - Build a reliable protocol (over unreliable connection)

# Step 1: Local Drawing (25%)

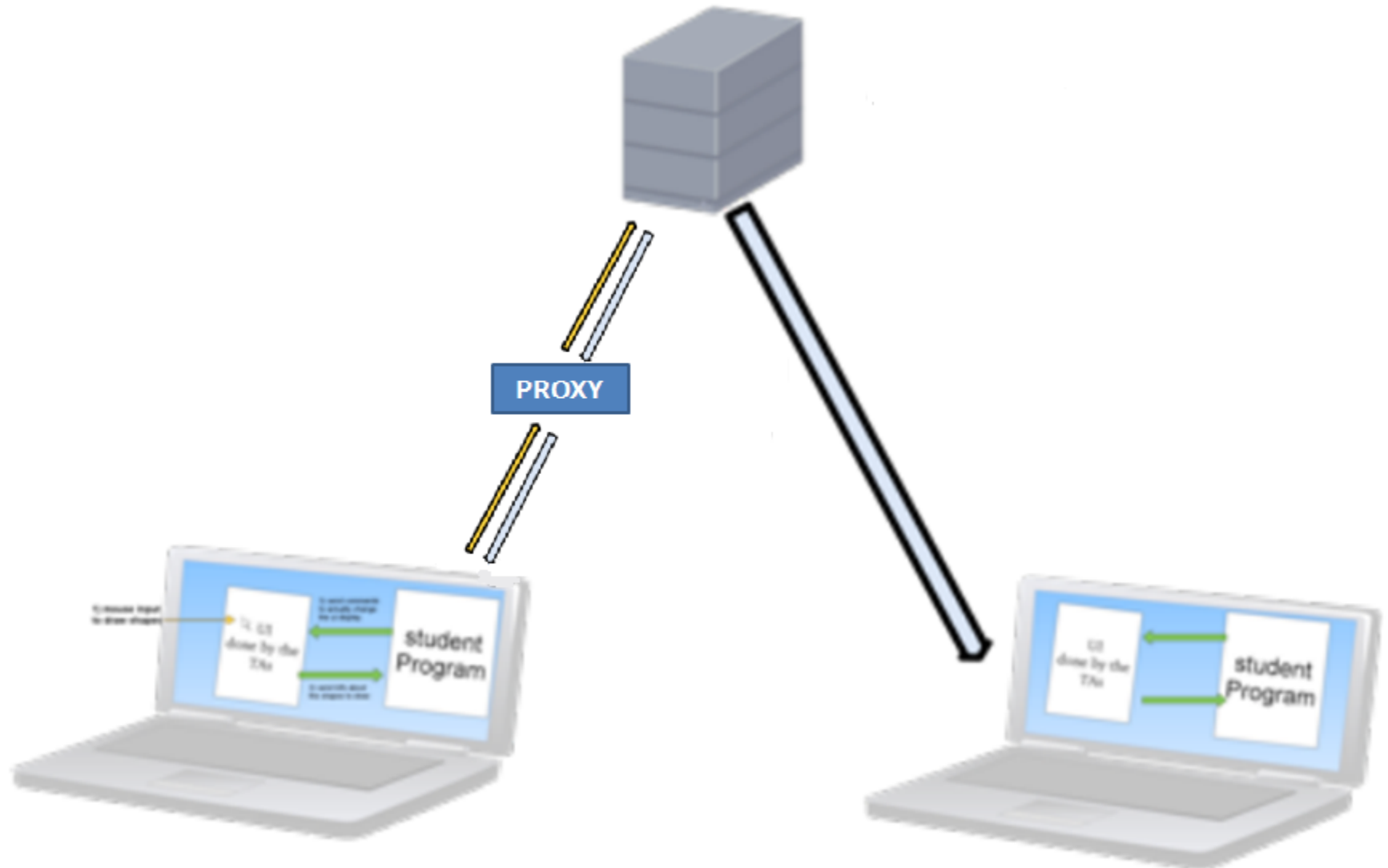


# Step 2: Collaborate! (35%)

<http://youtu.be/WkJMPIbHad4>

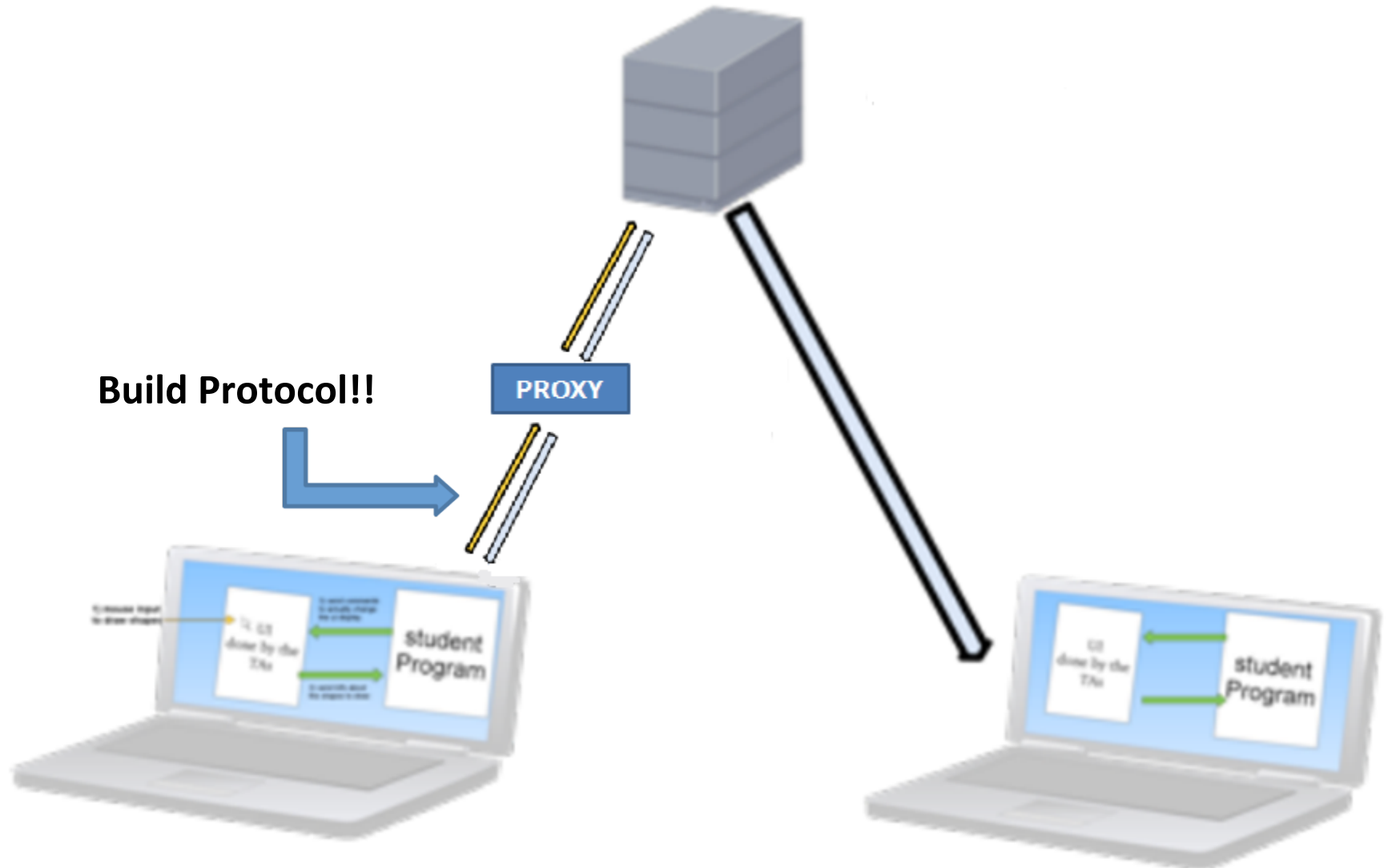


# Step 3: Add Proxy (30%)



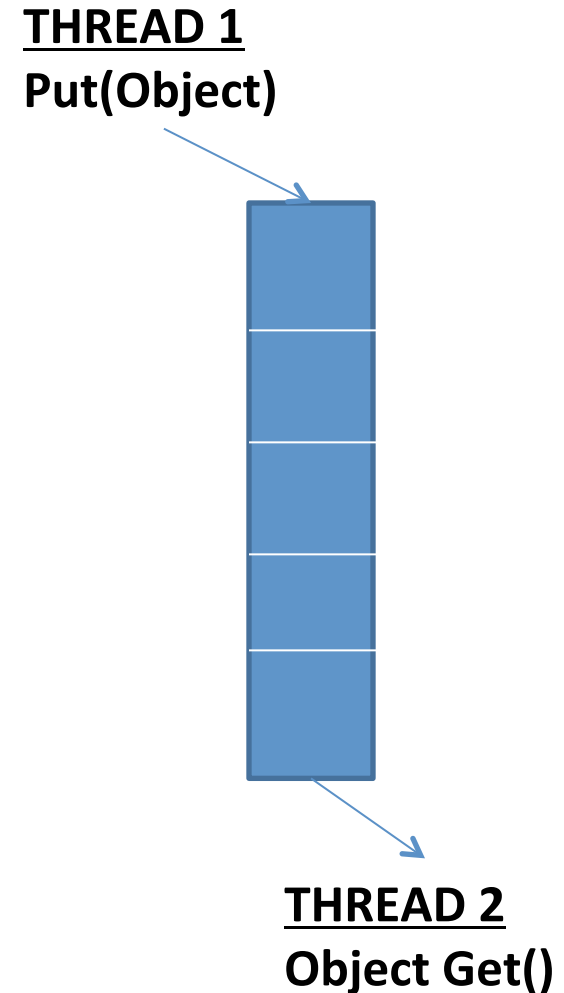


# Step 4: Filter w/Proxy (10%)



# 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!!**