

# CS 361 - Midterm Assessment

Professor Mark W. Boady

Fall 2022-2023

## 1 Overview

This goal of this self-assessment is for you to reflect on what you have learned so far and your skill level in each topic. You should be focusing on what you personally learned based on where you started this class from. A student who did multiple concurrent projects on a co-op may have had an easier time on Homeworks than a student with no experience in threading. What matters is how much you learned and how much work you put in.

Only the final question is given a grade, but all questions contribute *as supporting evidence* to the final question answer.

Answer all questions in a single PDF file. You may use MSWord, Latex, Google Doc, or any word processor of your choice. The answers must be submitted as a PDF.

This assessment is open book, but you **must** cite any sources you use.

You may not talk to any other students, TAs, or the Professor about the questions. You **must** answer them truthfully and independently. This is an assessment of your skills.

Question 1 :

### **Logistics**

- (a) How many reflections did you complete?
- (b) How many homework assignments did you complete?
- (c) Did you attend/watch all the lectures? If not, how many did you watch/attend?
- (d) Do you feel confident in your homework answers when you submit them?

Question 2 :

### **Homework Review**

- (a) What homework did you learn the most doing? Why?
- (b) What homework was most frustrating? Why?
- (c) Looking back on the homework you have done so far, is there anything you would change or revise if you could redo one?

Question 3 :

### **Course Review**

- (a) Why are you taking this class? What do you plan to gain from it?
- (b) Imagine you had to write an Amazon review of the textbook based on what you have read so far. Give the textbook a rating (out of 5 stars) and write a review.
- (c) What was the most interesting thing you have learned in class so far?
- (d) What was the most confusing thing you have learned in class so far?

Question 4 :

### Threading Puzzle

A group of  $M$  fraternity brothers and sorority sisters is having a party and drinking from a large communal keg that can hold  $N$  servings of soda. One unlucky pledge is responsible for replacing the keg each time it empties. When a partier wants to drink, he or she fills a cup from the keg, unless it is empty. If the keg is empty, the partier wakes up the pledge and then waits until the pledge has returned with a new keg.

Propose a solution to this puzzle that avoids deadlock, starvation (dehydration!), and race conditions. You may describe the solution however you like. You may write an essay, provide pseudocode, or work up a demo. It is up to you. If anything about the question is unclear, make up your own details and explain them in your answer.

## 2 Midterm Letter Grade

Question 5 :

Propose a letter grade that represents how you feel you have done for the first half of the class.

The first half of the class covers: Weeks 1-5, Homeworks 1-4, Reflections 1-5

Select a Grade: A+, A, A-, B+, B, B-, C+, C, C-, D+, D, F

Explain why you feel you deserve this grade. Provide evidence based on earlier questions on this assessment as well as your experience from class, homeworks, and blogs. It is helpful to explain what knowledge of threads and C++ you had before starting this class and how you feel those skill have changed. You should also denote any weak points you plan to improve on between now and the final.

If the Professor agrees with your proposed grade, it will be used as your grade for the Midterm. If the Professor disagrees with their grade, they will modify it and provide feedback on why.