

CS 170 Homework 0

Due 1/24/2022, at 10:00 pm (grace period until 11:59pm)

1 Study Group

List the names and SIDs of the members in your study group. If you have no collaborators, you must explicitly write none.

In addition, we would like to share correct student solutions that are well-written with the class after each homework. Are you okay with your correct solutions being used for this purpose? Answer “Yes”, “Yes but anonymously”, or “No”

2 Course Policies

- (a) What dates and times are the exams for CS170 this semester? Are there planned alternate exams?

Note: We will make accommodations for students in faraway timezones.

- (b) Homework is due Mondays at 10:00pm, with a late deadline at 11:59pm. At what time do we recommend you have your homework finished?

- (c) We provide 2 homework drops for cases of emergency or technical issues that may arise due to homework submission. If you miss the Gradescope late deadline (even by a few minutes) and need to submit the homework, what should you do?

- (d) What is the primary source of communication for CS170 to reach students? We will email out all important deadlines through this medium, and you are responsible for checking your emails and reading each announcement fully.

- (e) Please read all of the following:

- (i) **Syllabus and Policies:** <https://cs170.org/syllabus/>
- (ii) **Homework Guidelines:** <https://cs170.org/resources/homework-guidelines/>
- (iii) **Regrade Etiquette:** <https://cs170.org/resources/regrade-etiquette/>
- (iv) **Piazza Etiquette:** <https://cs170.org/resources/piazza-etiquette/>

Once you have read them, copy and sign the following sentence on your homework submission.

“I have read and understood the course syllabus and policies.”

3 Understanding Academic Dishonesty

Before you answer any of the following questions, make sure you have read over the syllabus and course policies (<https://cs170.org/syllabus/>) carefully. For each statement below, write *OK* if it is allowed by the course policies and *Not OK* otherwise.

- (a) You ask a friend who took CS 170 previously for their homework solutions, some of which overlap with this semester's problem sets. You look at their solutions, then later write them down in your own words.
- (b) You had 5 midterms on the same day and are behind on your homework. You decide to ask your classmate, who's already done the homework, for help. They tell you how to do the first three problems.
- (c) You look up a homework problem online and find the exact solution. You then write it in your words and cite the source.
- (d) You were looking up Dijkstra's on the internet, and run into a website with a problem very similar to one on your homework. You read it, including the solution, and then you close the website, write up your solution, and cite the website URL in your homework writeup.

4 In Between Functions

Find a function $f(n) \geq 0$ such that:

- For all $c > 0$, $f = \Omega(n^c)$
- For all $\alpha > 1$, $f = \mathcal{O}(\alpha^n)$

Give a proof for why it satisfies both these properties.

5 Asymptotic Bound Practice

Prove that for any $\epsilon > 0$ we have $\log x \in O(x^\epsilon)$.