Minis for 15-451/651

now submit via
https://autolab.cs.cmu.edu/15451-f13

do not use for longer HWs!

will also contain grades for HWs/exams
Gotta choose a nickname...
15-451: Algorithm Design and Analysis (f13)

Welcome to the Autolab for 15-451
We’ll use autolab for mini handins, and for grades management.

Editing Account Details for testtest

<table>
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<td>15-451: Algorithm Design and Analysis (f13)</td>
</tr>
<tr>
<td>First name</td>
<td>Test</td>
</tr>
<tr>
<td>Last name</td>
<td>Tester</td>
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<tr>
<td>Nickname</td>
<td>imjustatester</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:testtest@test.com">testtest@test.com</a></td>
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Anonymizing nickname to display on the public scoreboards
Email address to use for bulk emails from the instructors.

Ex: SCS/CIT
Ex: CS/ECE
Ex: 3
Ex: 15213/18213
Ex: C

Save Changes
15-451: Algorithm Design and Analysis (f13)

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Minis

> Mini #1
> Mini #2
15-451: Algorithm Design and Analysis (f13)

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Minis

> Mini #2
15-451: Algorithm Design and Analysis (f13)

Welcome to the Autolab for 15-451
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Mini #2
Due date: Tuesday, September 17 2013 at 23:59:00 (Last day to handin: Tuesday, September 17 2013 at 23:59:00)

Options
> Download handout
> Handin your work
> View handin history
> View writeup

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Mini #1, 15-451 Fall 2013

This mini is due via "email" to your TA, by 11:59pm Tuesday Sept 3. Please use the subject line "15-451 MINI #1" in your email.

Problem 1: For each pair \( <f,g> \) of functions below, list which of the following are true: \( f(n) = o(g(n)) \), \( f(n) = \Theta(g(n)) \), or \( g(n) = o(f(n)) \).

(a) \( f(n) = n \cdot \ln(n) \), \( g(n) = n \cdot \log_2(n) \). ["\ln" is base-e, "\log" is base-2]

(b) \( f(n) = n^2 / \log(n) \), \( g(n) = n^{\log(3)} \). ["^" is "to the power"]

(c) \( f(n) = 2^n \), \( g(n) = 2^{2n} \).

(You do not have to prove your answers.)

Problem 2. In class, we discussed a deterministic linear-time algorithm for finding the median (or kth smallest element) of an unsorted array. Our analysis of this algorithm gave the recurrence:

\[ T(n) \leq T(n/5) + T(7n/10) + cn. \]

Suppose we changed the algorithm so that rather than breaking up the array into groups of size 5, we used groups of size 7 instead.

(a) Write down the recurrence that results from this change of 5 to 7. (Explain your reasoning)

(b) What does this recurrence solve to?
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Handin for Mini #2
You have 1 submission left.

Choose File: No file chosen

Handin

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Handin for Mini #2
You have 1 submission left.

Choose File
No file chosen

Handin
Not graded yet..
(Duh -- it’s just been submitted!)
15-451: Algorithm Design and Analysis (f13)

Welcome to the Autolab for 15-451
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Handin History for Mini #2
You have 0 submissions left.

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Download as text/plain
Download as text/plain
View Source
This is a solution to mini 2.


2. Yes, it's the coolest.

3. See answer to #2.
15-451: Algorithm Design and Analysis (f13)

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15-451: Algorithm Design and Analysis (f13)

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Minis

> Mini #1
> Mini #2
not graded yet. you just submitted!
after grading is done...
## 15-451: Algorithm Design and Analysis (f13)

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### Grades for testtest

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<tr>
<td>Mini #2</td>
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**CATEGORY AVERAGE**
9.5

**COURSE AVERAGE**
0.0
15-451: Algorithm Design and Analysis (f13)

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Feedback for Mini #2 - Total (testtest)

Good work, missed blah.
Score for this problem: 9.0

Graded by: ag