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### Administrivia

- Welcome to “remote synchronous learning”! I hope this is going to work for everyone.
- My motto is “something reasonable will probably happen”, if we all do our best and are a bit patient with each other. Key may be clear communication. I rely on e-mail, as you may have guessed. In my syllabus I say something about coping with “unusual circumstances”. Not uncommon in normal times, and probably less so these days. Communicate!

(If you're not subscribed to CSMajors, I encourage you to sign up!  
[inside.trinity.edu/computer-science](mailto:inside.trinity.edu/computer-science) under “Mailing lists” has instructions.)

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### More Administrivia

- My not-so-hidden agenda is to make as few changes as possible, to limit the number of new tools etc. we all have to learn. Undoubtedly there are better ways to do many of the things I had originally planned, but this doesn't seem like the time to explore them.

### More Administrivia

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- Zoom links — well, most of you have presumably found them, but: In e-mail from me, and on TLearn. Noted under “lecture topics and assignment”.
- You’ll all start out with video (of yourself) off, and muted. Change that if you want to ask a question. Or there’s a “chat” feature you can use.
- *If* the technology won’t cooperate for you, the plan is to record classes so you can watch another time if you must. (The University seems to prefer real-time attendance but recognizes — “unusual circumstances” sometimes.)
- If the technology doesn’t cooperate for *me*, I’ll send you e-mail if I’m able to and keep trying. Suggest that you all stay connected and wait?

### More Administrivia

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- Some things about this course don’t need to change — how you turn in work, for example, and with no exams we don’t have to worry about those.
- Options for doing homework, however . . . More shortly.

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### More Administrivia

- ACM tutoring will continue — yay! I just relayed to all of you a message from Dr. Fogarty with details. Basically — Zoom and something called Discord. Looks promising?
- For office hours, I've scheduled a M/W recurring meetings much as I'm doing for classes but using a feature that lets me interact with one person at a time. Information shared by e-mail and reachable from my home page (<http://www.cs.trinity.edu/~bmassing>). (First of these is today. It will be my first try at using the one-at-a-time feature. If it doesn't work, fallback is Google Chat. `chat.google.com` seems to work better than clicking "Chat" from TMail.)

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### More Administrivia

- About grades:
- I've computed averages to use to turn in midterm grades. I had planned to e-mail you individual grade summaries, but the University has made a fuss lately (to everyone, not me individually, thankfully) about communicating grades via an inherently insecure channel. FERPA!
- So. My intent is to use TLearn's gradebook for this — supposedly one can upload a CSV file — but I'm not there yet. (!@# \$ mainstream technology!) Soon I hope.
- I'm really not sure *what* to do about those "grade and comments" messages I send you for your homeworks. More by e-mail soon.

### More Administrivia

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- And finally, the administrivia I'd have started with if none of this upheaval were happening:
- Reminder: Homework 6 due next week. I'm hoping the extra week allows you to get your tools in order and refocus on course material (not a small thing!).
- Homework 7 posted. Due in two weeks. Moderately difficult but I think interesting and educational!

### Options for Doing Homeworks

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- You can still access our computers remotely, though honestly it's a bit clunky, and anyway with so many people working remotely (and stressing the 'Net) it may be good to work on your own computer when you can.
- I've told you (in e-mail) what I know at this point about options for doing that.
- Based on responses (about a quarter of combined enrollment) I got to my e-mail question about your setups, most seem to have laptops running either Windows or Mac OS X, though there may be a Linux user (Lenovo?).

### Options for Doing Homeworks, Continued

- Installing a full Linux virtual machine is attractive but may not be practical if you don't have a lot of memory.

But I recommend that you try to get a Linux-like setup on your machine since a lot of my homework instructions make more sense if you're working in that environment. Mac OS X already has that (Terminal); on Windows you can install Cygwin. And of course if you're already *running* Linux . . .

- If you're having trouble setting something up — ask!!

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### Homework 5 Revisited — Palindromes

- In Scala I would solve this problem using higher-order functions (filter and map) and the function to reverse a string. But I don't think this approach works well in C.
- My sense is that most students tried to adapt a Scala solution despite my suggestion to try a different approach.

A "gotcha" in solutions involving copying (parts of) strings is not remembering to explicitly put in an end-of-string character. (What happens if you leave it out?)

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### Recap of Video Lectures

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- Memory allocation in C with `malloc()` and `free()`.  
Aside: I'm fanatical about checking that `malloc()` doesn't return `NULL`. However, at least one platform (Linux) "overcommits" memory — `malloc()` returns a non-null but system doesn't actually try to obtain resources until first use, at which time it can fail. Okay design in terms of efficient use of resources, but unfortunate consequences for programmers. Sysadmin can change system-wide but I doubt many do.
- Function pointers in C.  
How C sort of supports the higher-order functions (ones that use other functions as parameters). Scala library makes extensive use of this!
- Questions?

### Homework 7

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- Problem to solve is sorting lines in a text file using `qsort()`. How? read the whole file into memory, build an array of pointers, sort the pointers.
- Writeup is long, yes, but it lays out a step-by-step procedure for developing the program. I'm a big fan of writing programs a little at a time!
- (Rest of class period to work on Homework 6. I'll be available for questions via Google Chat at `chat.google.com`.)

### Minute Essay

- What device do you plan to use for the Zoom meetings? How does it seem to be working?
- What do you plan to do about doing homeworks?
- Anything you care to tell me about where you're currently located, how things are there, and how things are with you?

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