Objectives - 8/22/2023 (Tue)

- Get acquainted with ECE 36800.
  - What you will learn
  - Programming environment: ecegrid
  - Homework
  - Resources: lab help, office hours, reference sheet
  - Quizzes
  - Policies: grades, code quality, base requirements, attendance, communication, academic integrity

Note: Syllabus takes precedence over information in these notes in case of inadvertent inconsistency. Please read the syllabus carefully.

Learning objectives

- Stacks, queues, trees - understand/code
- Analyze algorithm time/space complexity
- Sorting/searching algorithms
- Graphs → data structures + algorithms
- Data structures + algorithms for engineering

This is the bare minimum that the course must cover.

Homework

- There will be 10-15 assignments
  - Some may be split into smaller components.
- Posted ≥7 days before deadline
  - HW01 will be posted ~~Thu 8/24~~ and due ~~Thu 8/31~~.
- Goal: time proportionate to difficulty
  - → Deadlines may be any day of the week

Homework - non-programming

- Analyze algorithms
  - You will learn the math you need to know for these.
- Write pseudocode
- Write proofs

Assignment description will be posted on course web site.

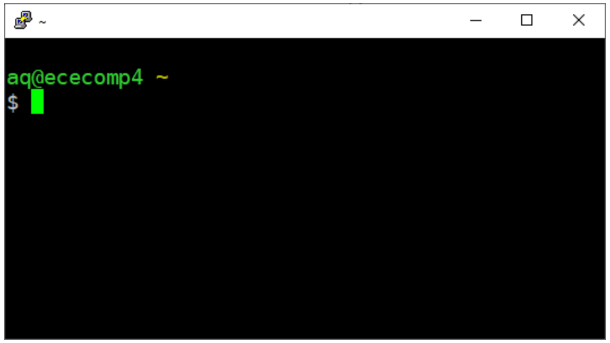
Submit via Gradescope or on paper in class.

Assignments will include instructions.

Homework - programming

- Create tools that analyze algorithms
- Implement data structures + algorithms
  - Possibly with modifications from the standard version.
- Apply to solve problems

PuTTY or ssh



```
aq@ececomp4 ~
$ 
```

SSH

Server

Get starter files

Tools: vim, gcc, gdb, valgrind

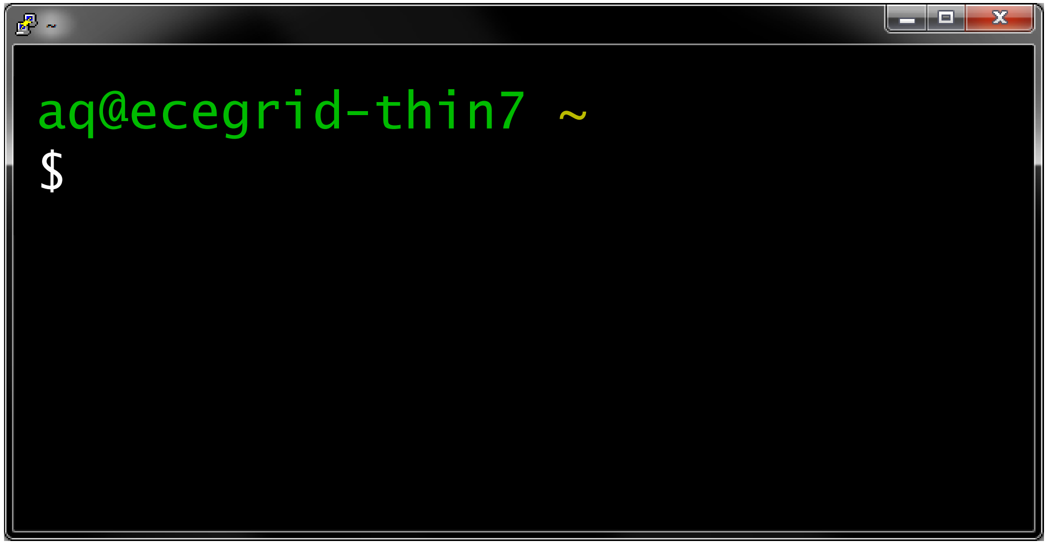
Test your code

Submit homework

eceprog or ececomp

Programming environment

- eceprog or ececomp via SSH (PuTTY or ssh)
- Linux
- ISO C11
- Tools: Vim 7.4 + GCC 8.3 + GDB 7.1 + Valgrind
- Compile with flags given in syllabus



```
aq@ecegrid-thin7 ~
$
```

Homework

- Get an assignment

```
368get hw▓▓
```

- Submit

```
368submit hw▓▓ ▓▓.c ▓▓.c
```

- Pre-test (if available)

```
368test hw▓▓
```

To those who know my system from ECE 26400: Do not attempt to set up your environment, yet. Instructions will be included with the first programming assignment. It will be similar.

"264" → "368"

- You might see references to ECE 26400 in technical demos, instructions, or tools.
- We are using tools developed for that course.

Resources

- Piazza
- TA help hours
  - Zoom + Google Form - Instructions
  - This week: Fri 8/25
  - Hours TBA (watch email)
- Instructor office hours
  - MSEE 262 and/or Zoom
  - This week: Tue 8/22 (today) 4:30-7:30pm
- Web site:

aq.gs/368

Watch email for instructions and/or changes.

Grading

- Homework: 30%
  - Weighted usually by the number of calendar days given
  - Extensions due to difficulty will increase weight
- Exams: 30%
  - 2 midterms (5% + 10%) + final exam (15%) - dates TBA
- Quizzes and in-class activities: 20%
  - Quizzes may or may not not be announced in advance.
  - Email me before class if you cannot be here
- min(exams, homework): 20%
  - Focus on whichever you need
- + Bonus (0-10%)
- + Participation (0-10%)

80% for A, 70% for B, 60% for a C, 50% for D–

Attendance is required.

Email me (aq@purdue.edu) before class with subject "lecture absence - ECE 36800" if you cannot be here. You may not get a reply, but if there is a quiz or graded assignment, I will either find a make-up opportunity for factor it out of your grade, at my discretion.

Code quality

- Write clean code from the start
  - Prevents some types of bugs
  - Makes other bugs easier to find
  - Helps you understand code in the morning
- Enables others to help you
  - Course staff will not assist with sloppy code
- Read Code Quality Standards
  - −2% per rule violated (to the extent that we can detect)

Writing clean code is an acquired skill.

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⚠ Base requirements

- All required files must be included in a **single submission.**
- All required files must be **named exactly as specified** in the assignment description.
- **Code can be compiled (as is)** on ecegrid with gcc v7.1.0 (64-bit Linux) and the following parameters: -g -std=c11 -Wall -Wshadow -Wvla -Werror -pedantic -DNDEBUG -Wno-unused-function.
- **Code can run** on ececomp well enough to be tested.
- Code **finishes in a reasonable amount of time** (e.g., 2.0 seconds for most assignments)
- Function signatures and data types **match the specification** in the assignment description.
- Any main(…) function must **return EXIT_SUCCESS**.

⚠ ZERO credit if you fail to meet any of the base requirements.

aq.gs/368

⚠ Cheating

Cheating includes:

- Copying code from written by other people
  - other students
  - the web
  - the instructor (unless explicitly authorized in writing)
- Dishonest conduct
  - e.g., attempting to access exam contents, etc.
- Helping others to cheat
  - Posting your code publicly online (e.g., GitHub)
  - Sharing your code with others
- *Attempting* to do any of the above
- Doing any of this during or after the semester

⚠ Cheating

Penalties:

- Very minor (e.g., copying 1-3 lines from the web on a homework)

  0 on assignment

- Others:

  F in the course

All instances will be referred to the
Office of Student Rights and Responsibilities

Full penalties will be applied for the first offense.

Penalties may be applied any time cheating is discovered.

GenAI (ChatGPT, etc.)

- "GenAI" refers to generative AI tools, such as ChatGPT.
- **Do NOT** copy any code or text from GenAI into assignments.
- **Do** use GenAI to get alternative explanations to concepts or explore ideas
- **Do** explore the opportunities that GenAI creates for you as a programmer in the future.
- If we strongly believe but cannot prove that code from GenAI was copied into your submission, we reserve the right to simply factor out an assignment from your grade. We will not trust any AI detectors.

Complexity…