CSCI 2270
Data Structures and Algorithms

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Office hours: ECCS 112
Wed 9:30am-11:00am
Thurs 10am-11:30am

Programming languages

- Specific programming language goals for the class:
  - Learn how to solve problems in two different languages
  - C++: fast, flexible, dangerous (pointers!)
  - Java: universal, safer, more constrained

- General programming language goals for the class:
  - Become familiar with test-driven programming
  - Recognize important general features shared between Java and C++, and know where these languages differ
  - Discern which language suits the problem best

    "*I speak French to my ambassadors, English to my accountant, Italian to my mistress, Latin to my God, and German to my horse*." - Frederick the Great of Prussia

Data structures

- Specific data structure goals for the class:
  - Write and manipulate arrays, linked lists, trees, graphs
  - Generalize these to work with many data types
  - Know how to apply template classes in C++/Java to get the same thing
  - Learn to write safe, smart code for classes
- General data structure goals for the class:
  - Select proper structures for various problems
  - Understand how to design data structures that suit particular algorithms

Algorithms

- Specific algorithmic goals for the class:
  - Compare how different techniques for solving a problem perform as the problem size grows
  - Select correct pairings of algorithms & data structures
  - Measure and compare time for algorithms
  - Know when and why to apply recursion
- General algorithmic goals for the class:
  - Learn how to teach yourself new algorithms
  - Learn how to make an existing algorithm more efficient

General info, part 1

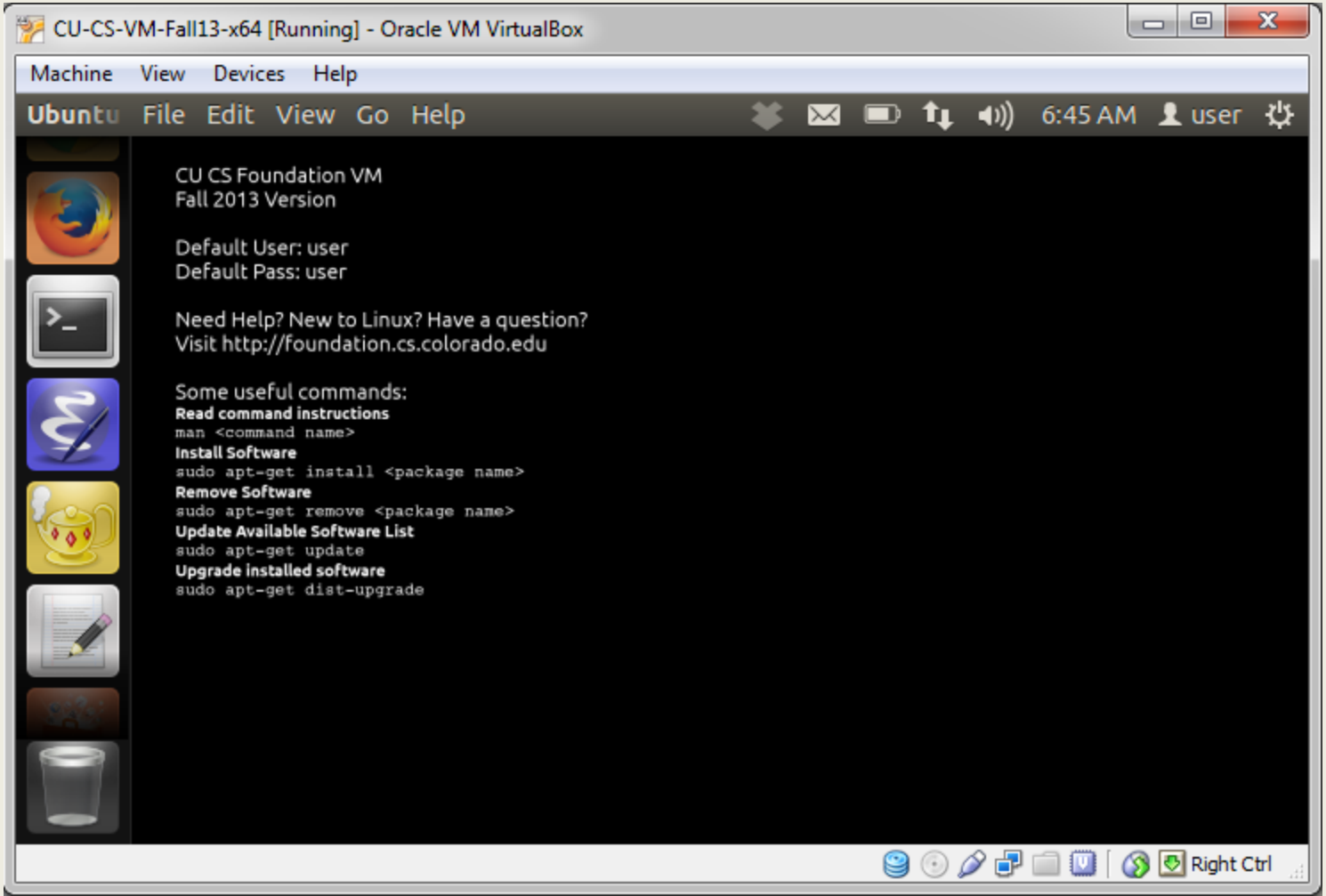
- Experts and novice programmers, mixed together
  - Don't be a jerk if you are an expert
  - Don't assume everyone else is an expert if you are a novice
- Homeworks assigned weekly
  - Interview grading (new to some of you)
  - Working together is fine, if you document it
  - You must still *type everything yourself*
  - You must do your best to *understand what you type*
- Clickers—lowest 3 days dropped
- Research talk attendance and summary
- Labs: mandatory

General info, part 2

- Textbook—a little choppy; not on reserve yet
  - Readings will post later this week, when I know it's available
- Check Moodle site before class, & once on weekends
- 3 midterms, in class
  - Mon, 17 February
  - Mon, 17 March
  - Mon, 21 April
- Project (depends on your first 2 midterms)
- 1 final (in MATH 100):
  - Monday 5 May 1:30pm-4pm

The Virtual Machine

- http://foundation.cs.colorado.edu/sde
- Imitates the lab machine environment



Friendly Virtual Machine

- If you would like some in-person help getting your copy of the CU CS VM setup, please attend one of the following install sessions. All install sessions are held in the **CSEL Student Lab** **(ECCS 112)**. We will provide USB flash drives with copies of the VM image for your convenience.

- 01/14/14 - 11 AM to Noon - VM Install Session - CSEL South (ECCS 112)
- 01/14/14 - 2 PM to 3 PM - VM Install Session - CSEL South (ECCS 112)
- 01/15/14 - 2 PM to 4 PM - VM Install Session - CSEL South (ECCS 112)
- 01/16/14 - 2 PM to 3 PM - VM Install Session - CSEL South (ECCS 112)
- 01/16/14 - 5 PM to 6 PM - VM Install Session - CSEL South (ECCS 112)
- 01/21/14 - 3 PM to 5 PM - VM Install Session - CSEL South (ECCS 112)
- 01/22/14 - 2 PM to 4 PM - VM Install Session - CSEL South (ECCS 112)
- 01/23/14 - 2 PM to 3 PM - VM Install Session - CSEL South (ECCS 112)
- 01/23/14 - 5 PM to 6 PM - VM Install Session - CSEL South (ECCS 112)

Coming up next time

- Data types (primitives, classes, pointers, ADTs)
- Reading will post later this week
- HW0 will post today, due Friday
  - Tell me your background in programming, why you're here, and what you want out of this course;
  - Any concerns you need to raise?
- HW1: C++ fixed size ArrayBag, will post this Wednesday
  - Due Sunday Jan 26, 11:55 pm via Moodle
  - HW1 solution will post the following Monday