CS261 Data Structures

Course Introduction
Who Am I

- Prof. Ron Metoyer
- Born and raised in Southern Cal
- UCLA undergrad B.S. (1994)
- Georgia Tech Grad Ph.D. (2001)
- OSU Assoc. Prof.
Teaching
Research
Research

Visualizing Diversity in Large Multivariate Datasets

```
graph = barGraph [1, 1.2, 1.7, 1.5, .7]
  'withColor 'Steeblue
  'withSpace ' (0.25,0)
```

Domain Specific Vis Language
Structure of the Course

- Short Lectures
- Weekly Reading
- Collaborative Worksheets
- 7 Assignments – Pair Programming Approach
- 1 Midterm
- 1 Final Exam
- Weekly Quizzes (Most likely on Fridays)
- See Syllabus
  - Percentage Weights
  - Grading Scale
  - Grading Policy and Late Assignments
Grading

- 20% Homework
- 30% Mini Quizzes
- 10% Class Participation, Recitation
- 20% Midterm
- 20% Final Exam
Academic Honesty

• Expected to produce and understand all aspects of your (and your team’s) work
• Honor system
What if I need help on assignments?

- **Piazza.com**
  - Used for questions – we’ll watch and answer questions
  - you can and should answer questions (Class Participation Credits!)
  - Can also post anonymously

- **Office Hours**
  - TA Office Hours will be held in the KEC Lab
  - Mine are held in my office
Office Hours Policy

• We will help you understand the assignments
• We won’t give answers, but will guide you to your own answers
• We will only help you debug code if you can demonstrate confidence in supporting code
  – If function A calls function B, you must demonstrate that function B is behaving correctly (ie...demonstrate with a unit test case!!!)
Pair Programming

• Why?
  – Proven to enhance learning for both advanced and less experienced students
  – Nearly ALWAYS produces better code than a solitary programmer

• When?
  – All programming assignments
  – We choose pairs for Assignment #1
  – You choose pairs for subsequent assignments

• See Handout

• See Video
Pair Programming Mechanics

• Driver
  – Controls keyboard and mouse
• Navigator
  – Observes
  – Asks Questions
  – Suggests Solutions
  – Considers long term strategies
• Switch roles every 20 minutes
• Fill out partner survey after each assignment
Pair Programming Mechanics

- Labs
  - TAs will hold office hours in the KEC Lab
  - YOU MUST ATTEND at least 2 hours of Lab per week as a PAIR to work on the week’s assignment.
  - The TA will guide the Pair Programming process
  - Attendance will be taken
1. Make sure you have an ENGR account. If you don’t go to https://secure.engr.oregonstate.edu:8000/teach.php?type=want_auth (and click on ‘create a new account’)

1. Log in at the website above
2. Click **Submit an Assignment**
3. Choose the assignment from **List of Assignments**
4. Browse for the files to submit
5. Select the relevant file(s)
6. Click **Submit**
7. Verify successful submission

8. **Sign up for a TA Demo**
1. **Always** identify yourself and the program at the top of the *main* file.

   /*
   <your and partner’s name> <date>
   <assignment Identification>
   <development environment>
   */

2. **Always** identify yourself and the file contents at the top of other `.h` and `.c` files.

   /*
   <your name> <date>
   <file description>
   */
3. **Always** provide a description for each procedure / function.

   /*
   <function description>
   <preconditions>
   <postconditions>
   */

4. **Always** use self-documenting code.

5. **Provide additional comments as needed.** (Usually comment logical sections of code.)
Programming Assignments

• Must also be copied to your ENGR (or other OSU account) before the deadline.
• If you submit the wrong files via TEACH and you have not copied your project to your ENGR account (before the project deadline), you will not be given an opportunity to resubmit and you will get a zero for that assignment.
• We do NOT accept modification dates on personal computers as proof that the files were done on time.
You may use *any development environment* to write your code.

We will write our code in ‘C’ with the C99 standard.

I *highly* recommend that you become very familiar with a debugger and debugging strategies:

- Variables view
- Expressions
- Step over, into, out

All assignments must compile (using gcc) and execute in the Linux environment on flip.engr.oregonstate.edu.
Assignments & Exams

• Contesting a Grade
  – one week after returned to you

• Late Assignments
  – You have ONE late assignment
  – Tell us in the TEACH comment
  – Original due date + 48 hours

• Exams
  – At least one week notice if you can’t make an exam date
  – Makeup exams ONLY UNDER EXTREME CIRCUMSTANCES
• See the course website for more details on the Syllabus
• https://secure.engr.oregonstate.edu/classes/eecs/fall2013/cs261
Why study data structures?

• Data storage is a major component of just about all programs you will write
• Algorithms and data structures go hand in hand
• You may or may not implement many data structures in the real world
• However, you will use data structures and you must be an informed shopper and make appropriate choices for your applications