

15-213 Recitation: Data Lab

The TAs

Jan 29, 2018

Agenda

- Course Details
- Data Lab
 - ANSI C
- Floating Point

Course Details

- How do I get help?
 - Course website: <http://cs.cmu.edu/~213>
 - Office hours: **5-9PM** from Sun-Thu in Wean 5207
 - Plus Friday hours
 - Piazza
 - *Definitely* consult the course textbook
 - **Carefully read the assignment writeups!**
- All labs are submitted on Autolab.
- All labs should be worked on using the **shark machines.**

Data Lab: What is ANSI C?

This is *not* ANSI C.

Within two braces, all *declarations* must go before any *expressions*.

```
unsigned int foo(unsigned int x)
{
    x = x * 2;
    int y = 5;

    if (x > 5) {
        x = x * 3;
        int z = 4;
        x = x * z;
    }

    return x * y;
}
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Form Groups of 3 - 4

- Series of exercises
 - Operators
 - Floating point
 - Puzzle

Floating Point: Rounding

1.**B****B****G****R****X****X****X**

*In the below examples,
imagine the underlined part
as a fraction.*

- **Guard Bit**: the least significant bit of the resulting number
- **Round Bit**: the first bit removed from rounding
- **Sticky Bits**: all bits after the round bit, OR'd together

Examples of rounding cases, including rounding to nearest even number

- 1.**B****B**|**G****R****X****X****X**: More than $\frac{1}{2}$, round up: 1.**B**
- 1.**B****B**|**G****R****X****X****X**: Equal to $\frac{1}{2}$, round down *to even*: 1.**B**
- 1.**B****B**|**G****R****X****X****X**: Less than $\frac{1}{2}$, round down: 1.**B**
- 1.**B****B**|**G****R****X****X****X**: Equal to $\frac{1}{2}$, round up *to even*: 1.**B**
- 1.**B****B**|**G****R****X****X****X**: Equal to 0, do nothing: 1.**B**
- 1.**B****B**|**G****R****X****X****X**: Equal to 0, do nothing: 1.**B**

All other cases involve either rounding up or down - *try them!*

Questions?

- Remember, data lab is due this Thursday!
 - You really should have started already!
- Read the lab writeup.
 - **Read the lab writeup.**
 - *Read the lab writeup.*
 - *Read the lab writeup.*
 - » Please. :)