CIS 323

Hello C++
Why are you here?

- Learn new languages
  - Learn how to learn new languages

- Improve your coding
  - Style
  - Elegance
  - Efficiency

- Apply concepts from CIS 313
  - Data structures
  - Solving problems

- Have fun :)
Who are you?

- Please fill out your information sheets
  - Help me get to know you
  - Help me pace this lab

- Remember to drop them off before you leave
Who Am I?

- Greg Bickerman
  - Deschutes 241
  - gbick@cs.uoregon.edu

- Office Hours
  - Monday 1 - 2
  - Tuesday 1 - 2
  - Whenever I'm around
Logistics

- **Class**
  - Thursday 8:30 - 9:50
  - Gerlinger 301

- **HELP**
  - Help Enhances the Learning Process
  - Hands on programming help
  - Tuesday 5 - 6
  - Deschutes 100
Logistics - Assignments

● Evaluation
  ○ 80% Assignments
  ○ 20% Participation

● Assignments
  ○ 5 plus a warmup
  ○ 1-2 weeks
  ○ Due Friday at 11:59 PM

● Late submission
  ○ 10% penalty per day
  ○ Request extensions 24 hours in advance
Logistics - Assignments

● General Assignment Format
  ○ Implement a data structure
  ○ Solve a problem

● The data structure is the important part
  ○ Code it first
  ○ Test it by itself

● If the data structure doesn't work, no credit on the problem component
Logistics - Assignments

- Grading assignments
  - 30% Correct I/O
  - 30% Implementation
  - 20% Style
  - 20% Documentation

- Code that does not compile will not receive a grade
Logistics

● Website
  ○ [http://www.cs.uoregon.edu/classes/12W/cis323/](http://www.cs.uoregon.edu/classes/12W/cis323/)
  ○ Assignments!
  ○ Schedule!
  ○ Lecture Slides!

● Assignment Submission
  ○ TurnIN script
  ○ Requires CIS account
CIS Accounts

- Why should you get a CIS account?
  - Lab computer access
  - Storage space on ix
  - CIS email account
  - Ability to submit CIS 323 assignments

- How do you get a CIS account?
  - Go to the main CIS office (in Deschutes)
  - Talk to Cheri
CIS Accounts

● You will receive a CIS email account
  ○ username@cs.uoregon.edu
  ○ sytems.cs.uoregon.edu/cube

● Want to forward your email?
  ○ cs.uoregon.edu/wiki/index.php?n=Help.Email

● Check your CIS email account
  ○ Class announcements
  ○ Assignment grades
  ○ CIS department email
Pair Programming

- You are encouraged (but not required) to work in pairs
  - Easier Work!
  - Finish Faster!
  - Learn More!

- Pair Programming is NOT
  - An excuse for someone to do your work for you
  - Splitting up the assignment

- So, what is pair programming?
  - Both members present while coding
  - Both members should be contributing
  - Equal time at the keyboard
Academic Honesty

● Plagiarism is a fine line

● Brainstorming together is good
  ○ But don't copy other people's code

● Looking online for code examples is good
  ○ But don't copy solutions

● Asking more experienced coders for advice is good
  ○ But don't look at previous solutions

● As a rule, you should be writing your own code
Java vs C++
Java vs C++

- Java garbage collects
  - In C++, you have to clean up your own trash

- Java won't let you use uninitialized variables
  - C++ will use whatever memory is lying around

- Java warns you when you're about to do something stupid
  - C++ assumes you know what you're doing
  - Alternatively, C++ lets you shoot yourself in the foot

- Java is safer
  - C++ is faster
class Hello {
    public static void main(String[] args) {
        System.out.println("Hello World");
    }
}
class Hello {
    public static void main(String[] args) {
        System.out.println("Hello World");
    }
}

#include <iostream>

int main() {
    std::cout << "Hello World" << std::endl;
}
class Hello {
    public static void main(String[] args) {
        System.out.println("Hello World");
    }
}

#include <iostream>
using namespace std;

int main() {
    cout << "Hello World" << endl;
}
System.out.print("Hello World");

BufferedReader in = new BufferedReader(...
String input;
input = in.readLine();
System.out.print("Hello World");

cout << "Hello World";

BufferedReader in = new BufferedReader(...
String input;
in = in.readLine();

string input;
cin >> input;
#include <iostream>
#include <string>
using namespace std;

int main() {
    ?
}
}
#include <iostream>
#include <string>
using namespace std;

int main() {
    string input;
    cin >> input;
    cout << input << endl;
}
How should I write my code?

- IDE's are overkill
  - Great for large projects with many files
  - Cumbersome for lightweight programs

- I won't stop you from using an IDE

- But I would encourage you to try a more lightweight editor
  - Notepad++ (windows only)
  - jEdit
  - Vim

- Check out the links section of the website
How do I run it?

- Command Line

- Compiling files
  - `g++ echo.cpp -o echo`
  - Compiles `echo.cpp` and produces a binary file named `echo`

- Running binaries
  - `./echo`
  - Runs the binary file `echo`
Lab computers are useful

- Lots of preinstalled software
  - All → Applications → _Editor →
- Already has g++
- Good place to find knowledgeable CS people
What if you want to use lab resources remotely?

- From mac:
  - ssh - remote command line
  - scp - remote file transfer

- From windows:
  - PuTTy - remote command line
  - WinSCP - remote file transfer
  - Notepad++ has a built-in ftp client

- Ask me for tutorials
Warmup Assignment

● Due January 20
  ○ But it shouldn't take you that long ;)

● Details on course website
  ○ [http://www.cs.uoregon.edu/classes/12W/cis323/assn0/](http://www.cs.uoregon.edu/classes/12W/cis323/assn0/)

● Make sure you can
  ○ Write and compile C++ files
  ○ Perform basic I/O
  ○ Figure out C++ stuff I haven't told you explicitly
See you next week

Don't forget to hand in your info sheets