Announcements

- Read for next time Chap. 1, Chap 2.1-2.2
- Assignment 1
- Reading Quiz on Blackboard
  - Due beginning of class next time
- Bring laptops if you want starting next time
- Must install Eclipse and Ambient
  - Update if you already have it installed

What is Computer Science?

- Computer science is no more about computers than astronomy is about telescopes. - Edsger Dijkstra
- Computer science is not as old as physics; it lags by a couple hundred years. However this does not mean that there is significantly less on the computer scientist’s plate than on the physicist’s: younger it may be, but it has had a far more intense upbringing! - Richard Feynman

Scientists and Engineers

- Scientists build to learn, engineers learn to build. - Fred Brooks
  - Duke alum
  - Chair of UNC’s Computer Science Department
  - Turing Award Winner
Computer Science and Programming

• Computer Science is more than programming
  – Called *Informatics* in many countries
  – Elements of both science and engineering
  – Elements of math, physics, cognitive science, music, art, and many other fields
• To some programming is an art, to others a science, to others an engineering discipline.

Computer Science is a young discipline

• First computer science department formed in 1962

What Is Computer Science?

• What is it that distinguishes it from the separate subjects with which it is related? What is the linking thread which gathers these disparate branches into a single discipline? My answer to these questions is simple --- *it is the art of programming a computer*. It is the art of designing efficient and elegant methods of getting a computer to solve problems, theoretical or practical, small or large, simple or complex.

C.A.R. (Tony) Hoare

• Turing Award Winner
• Knighted by Queen Elizabeth
Young People Can Have a Big Impact

- Who are these people and what did they do at the given age?
  - Shawn Fawning (19 years old)
  - Marc Andreessen (21 years old)
  - Claude Shannon (21 years old)
  - Linus Torvalds (21 years old)
  - Dmitry Sklyarov (26 years old)
  - Tim Berners-Lee (35 years old)
  - Jim Ellis (Duke alum) (23 years old)
  - Richard Stallman (37 years old)

What is Computer Science?

- Artificial Intelligence
  - Roomba
  - CMU’s Sandstorm

What is Computer Science?

- Animation

What is Computer Science?

- The Organization of Data, and Searching
What is Computer Science?

• Medicine, Genomics

What is Computer Science?

• Devices

Why is Programming Fun?

• What delights may its practitioner expect as a reward
  – First is the sheer joy of making things.
  – Second is the pleasure of making things that are useful.
  – Third is the fascination of fashioning complex puzzle-like objects of interlocking moving parts.
  – Fourth is the joy of always learning.
  – Finally, there is the delight of working in such a tractable medium. The programmer, like the poet, works only slightly removed from pure thoughtstuff.

Fred Brooks

Problem Solving

• Nim
• DivToZero
• HingedDoor
A Java Program

public class HelloCompSciClass
{
    public static void main(String [] args)
    {
        // display a greeting
        System.out.println("Hello, CompSci 6!");
    }
}

About the Java Program

• What is the name of the class?
• What is the name of the method?
• What is printed?
• What does the “;” mean?
• What does “public static void” mean?
• What is “String [] args”?

Environment we will use

• Eclipse – an Integrated Development Environment
  – Editor
  – Compiler
  – An output console
  – Visualization of files and folders
  – Submission of programs (Ambient)
• See CompSci 6 page for installing on your computer