Introduction

CSE 142, Summer 2003

Computer Programming 1

http://www.cs.washington.edu/education/courses/142/03su/

Readings and References

- References
  - » All course information is available from the web site
    - http://www.cs.washington.edu/education/courses/142/03su/
- Reading
  - » Chapter 1, *Intro to Programming and Object-Oriented Design Using Java*, Niño and Hosch

Why Are We Here?

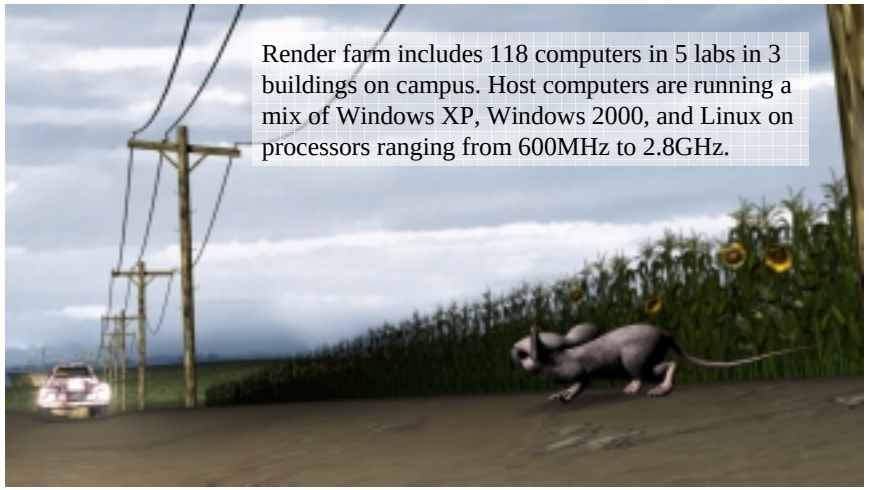
- Computers are everywhere!
  - » Big ones serving databases and forecasting weather
  - » Medium sized computers on your desk top, for playing games, writing papers, surfing the internet
  - » Smaller ones everywhere: car, kitchen, toys, phones
- They're part of our world
  - » What can they do? How do they do it?
- What can *you* do using a computer program that you've written yourself?

National Center for Supercomputing Applications

- 31-March-03 - NCSA's IBM POWER4 Available to Research Community
  - » "will be used by researchers in a wide range of science and engineering disciplines, including chemistry, biology, astrophysics, atmospheric sciences, materials sciences, high-energy physics, and structural mechanics."
- System is a cluster of 12 IBM eServer p690 UNIX systems with 384 1.3 GHz processors and a total of 1.5 terabytes of memory.

http://www.ncsa.uiuc.edu/UserInfo/Resources/Hardware/IBMp690/

UW CSE 490ca - Computer Animation



EverQuest, massively multiplayer game

- 3D massively multiplayer fantasy roleplaying game. Prepare to enter an enormous virtual environment-an entire world with its own diverse species, economic systems, alliances, and politics.

http://everquest.station.sony.com/about.jsp

Nokia 6600

- "The new camera phone features advanced enterprise functionality plus a large color screen, digital zoom and video recorder. This tri-band (GSM 900/1800/1900) phone meets the ongoing demands of the multitasking, mobile workforce with personal information management (PIM) applications, secure email access, seamless file downloads, and access to richer mobile content via the XHTML browser. Includes support for Java MIDP 2.0"

http://www.forum.nokia.com/main/1,6566,015,00.html

Two Interesting Facts

1. Computers are multi-purpose
   - » Unlike cars, toasters, dishwashers
   - » The same physical computer can play games, solve equations, plan trips, send e-mail, etc. How is this possible??
   - » Answer: the computer operates under direction of a "program": a set of precise instructions
2. The largest and the smallest computers have much in common
   - » We can usefully think of about computers in general without worrying about hardware details
   - » This is our first example of "abstraction", a key notion in computer science

Computers & You & CSE142

- You'll learn to write programs
  - » We use a particular language called Java
  - » The principles apply to many other languages

- You'll use particular computers
  - » Windows, Mac, Linux, Unix, whatever
  - » Principles apply to many computers and operating systems
- We'll talk about the process of software development
- Useful class if you want to understand how computer systems are developed and how they operate
  - » programmer, technical user, business user, manager, purchaser, …

Introductory programming class

- This course will get you started programming
- Writing new programs is quite different from using existing application programs
  - » Logic/problem solving skills
  - » Can be challenging, but also very rewarding
- Important to keep up
  - » Ask for help when you need it; don't fall behind
  - » The instructor, the TAs, and the consultants all enjoy programming and we're here to help you enjoy it too!

What to Expect

- Homework assignments (almost weekly)
  - » Mix of written problems and short programming exercises, some using a computer
  - » Done individually
- Longer programming projects
  - » Work with a partner – pair programming
    - Partners assigned by course staff; different partner for each project
  - » Individual written reports for each project
- Discussions and activities in lectures and quiz sections
- Readings in the textbook

Learning Programming

- Programming is both easier and harder than most people make it out to be.
  - » Easier: Many of the things good programmers do well are actually things all of us already do all the time, we just don't know it.
  - » Harder: Programming is in large part a *skill*, even an *art*
- Programming is like any craft: it requires practice.
  - » Learning by doing vs. learning by reading about it
  - » Not sure how something works? Try it and see!
  - » Build things and throw them away. Experiment!
  - » Don't be afraid that you will break the computer.
    - get a cheap used one ($20) and tear it apart … it's fun!