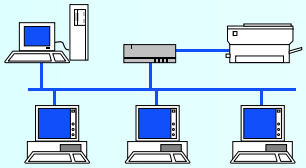


Intermediate Programming 600.120

Introduction

Department of Computer Science
Johns Hopkins University

Who is taking the course?

- Lets go around the class, stating (at least)
  - Name
  - What major, minor, double major, etc.
  - What year in the degree
  - What level of programming language knowledge you have – Java, C, C++, other?
- Kindly write this on the page we circulate
  - Please include an e-mail on the page, preferably a Hopkins e-mail that you regularly check ☺

Course Overview

Week 1

http://www.dsn.jhu.edu/courses/cs120/

cs120-help@dsn.jhu.edu

Course Information

- Lecture : Monday, Tuesday, Wednesday 1pm - 2pm Shaffer 1.
- Tutorials:
  - Officially - Thursday 12pm / Friday 1pm Shaffer 1.
  - Practically – many times we will use 1 on 1 meetings instead.
- Instructor: Yair Amir 410-516-4803.
  - Office hours: NEB-316/313 Tuesday 2pm – 3pm
- TA : John Lane 410-516-5562
  - Office hours: NEB-313 Monday, Wednesday 2pm – 3pm
- Special help: NEB-313 (just drop by any time)
  - Jon Kirsch
- E-mail contact to all of us: cs120-help@dsn.jhu.edu
- Course mailing list: www.dsn.jhu.edu/mailman/listinfo/cs120-2006

E-mail is best. Next - come to office or lab. Then – call.

Course Books

- The C Programming Language, second edition, Kernighan & Ritchie, Prentice Hall. ISBN 0-13-110362-8
- C++ How to Program, fifth edition, Deitel & Deitel, Prentice Hall. ISBN 0-13-185757-6

  (this book will only be needed just before the middle of March).

Grading Policy

- 4 credit course.
- Mid-term – 10% - 20%
- Final – 20%
- Project assignments – 60% - 50%
- Attendance – 10%
- Ethics code: standard CS code www.cs.jhu.edu
- Zero tolerance for ethics problems.
  - We invest a lot and expect a lot in return.

Programming language: C and C++.
Testing environment: the undergrad lab ugrad11-20.
Need to get an account!

Shaffer 1

Tentative Plan

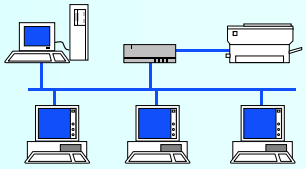
- Introduction, C - getting started. Week of Jan 30
- C - program structure, scope / pointers , structures. Week of Feb 6
  - **Project 1.**
- C - memory management, basic development environment. Week of Feb 13
  - **Project 2.**
- C – memory management / I/O / standard library. Week of Feb 20
- C - probabilistic data structure. Week of Feb 27
  - **Project 3.**
- C - Project design. Week of March 6
  - **Mid Term – March 8 or 7**

Shaffer 1

Tentative Plan

- C++ - getting started. Week of Mar 13
- C++ - Classes – constructors / destructors Week of Mar 27.
  - **Project 4**
- C++ - Overloading. Week of Apr 3.
- C++ - Inheritance, polymorphism. Week of Apr 10.
- C++ - Templates. Week of Apr 17
  - **Final Project.**
- C++ - project design. Week of Apr 24
- C++ - Summary. Week of May 1
  - **Final Exam ?**

One on One
One on Two
One on Four



- Presenting and discussing design - scheduled.
- Solving problems - mostly unscheduled:
  - When stuck on implementation – try for 15 minutes.
  - Contact us immediately after that – come to NEB-313 or e-mail cs120-help@dsn.jhu.edu.
  - NEVER WASTE MORE THAN 15 minutes on a technical problem.
- Run ideas / designs by us – mostly unscheduled
  - Make a habit to consult with us at least once for every project, preferably long before submission deadline.

A little about me

- Joined Hopkins about 10 years ago.
- Director of the Distributed Systems and Networks lab
  - www.dsn.jhu.edu.
- Up until last semester, taught only high level undergraduate and graduate courses:
  - Distributed Systems, Advanced Distributed Systems and networks, Operating Systems.
- Last semester taught Intermediate Programming.
  - Liked it. Did not get to meet too many CS majors. Asked to teach it again…
- Enjoy inventing generic practical software toolkits that improve the scalability, availability and robustness of the IT and Internet infrastructure:
  - www.spread.org, www.spines.org, www.smesh.org

Personal Point of View: Where High Tech is Going

- The world has changed:
  - Infrastructure is cheap => low entry price.
  - A networked world => most software can be done anywhere.
  - Result: Global competition.
- Two paths to win:
  - To be the cheapest among equals.
    - This is not likely to happen here.
  - To provide value nobody else has.
    - Combination of leading-edge knowledge and strong skills.
- Anything in between will be squeezed.
- Exponential curve of quality/reward:
  - Exponential curve is great on the right side.
  - … and deadly otherwise.

Getting to the Right side of the Curve

- A combination of Leading-edge Knowledge and strong skills.
- We have excellent infrastructure for building leading edge knowledge.
  - Leading research groups.
- But skills are lacking:
  - Many students get to 300-400 level courses lacking strong programming foundation.
  - This limits their ability to extract the full benefit of these top-notch courses.
- So, we need to develop these skills early.
- Higher expectations early => better tools to get to the right side of the curve later.
- This is why I am here, and that should be the only reason for you to be here, too!