CS 150
Introduction to Computer Science 1

Professor: Chadd Williams

August 31, 2009

Chadd Williams

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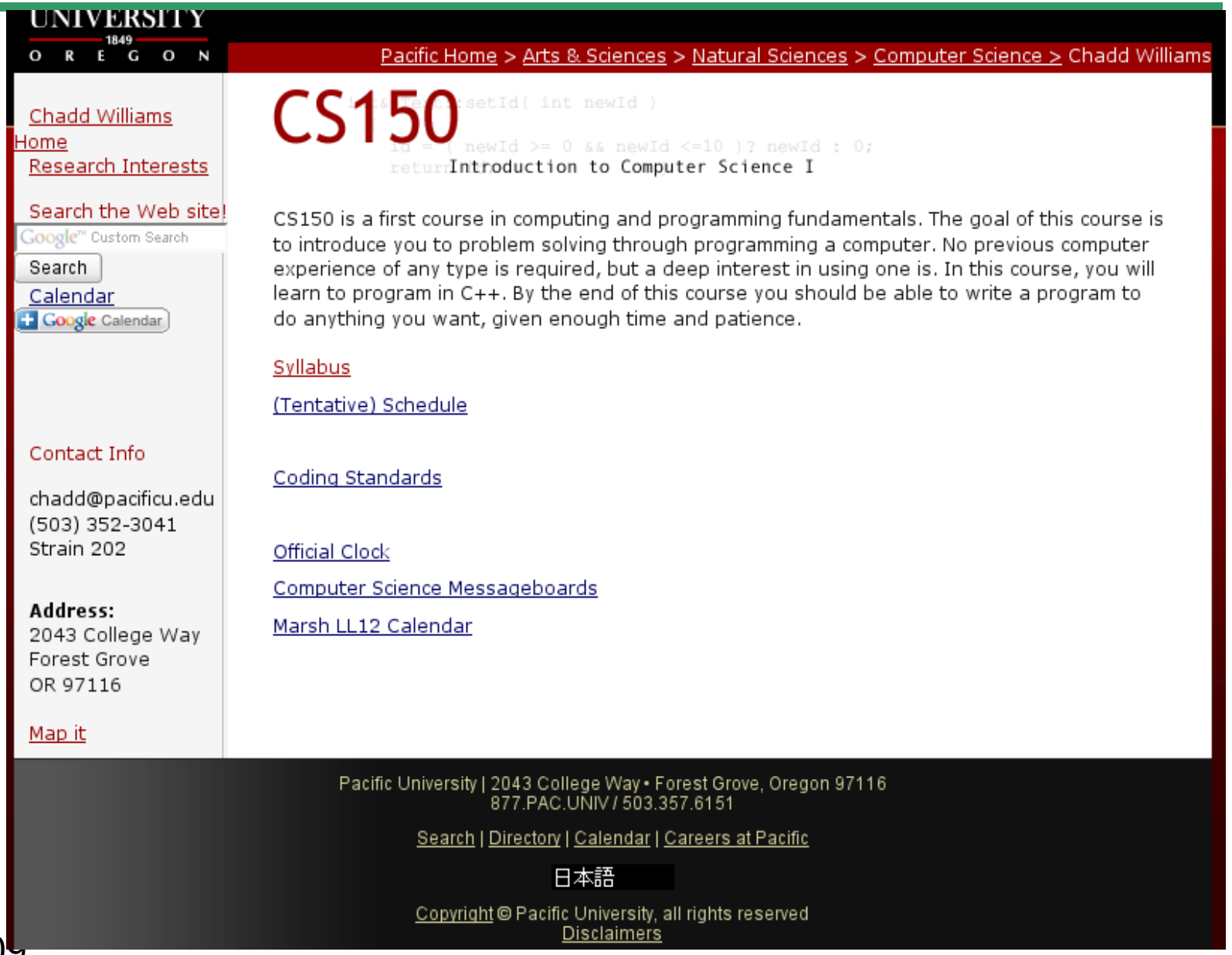
- chadd@pacificu.edu
- Office 202 Strain
- Office hours:
  - M 2-4pm
  - T 11-noon
  - Th 1-2pm
  - or by appointment

What is CS150?

- CS150 is a programming course
- You will learn
  - Syntax (Grammar)
    - The mechanics of writing programs in C++
  - Design
    - Logical reasoning
    - How do I solve this problem with a program?
    - How do I break this into smaller, solvable problems?
- No previous programming skills needed!

http://zeus.cs.pacificu.edu/chadd



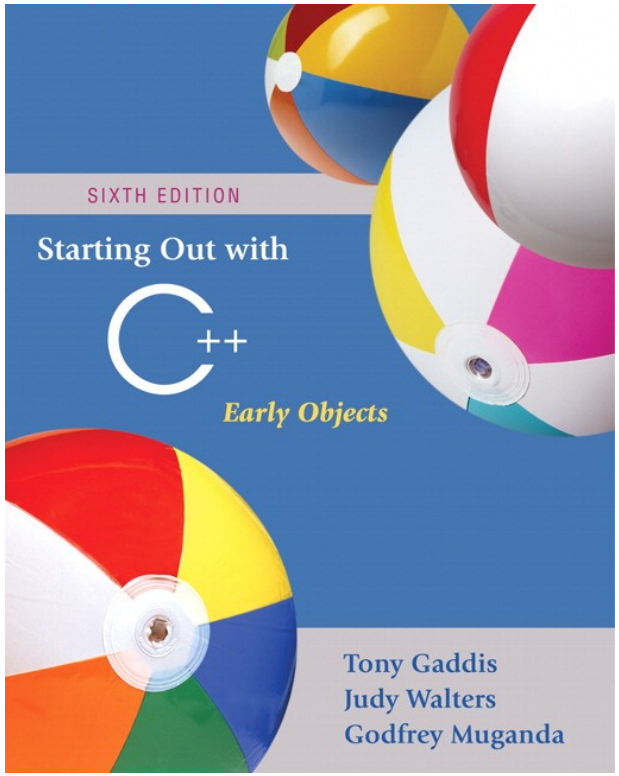
Course Schedule

- The course schedule I have posted is tentative.
- The online schedule will be accurate and up to date.
- Contains:
  - handouts
  - assignments
  - labs

Date	Topic	Notes	Assignments
Aug 31	Welcome! | Computer Basics | What is Computer Science?	PDF	Survey!
Sep 2	My First C++ Program		
Sep 4	More C++		**DUE: Survey (4 pm)**
Sep 7	NO CLASS		
Sep 9	Simple C++; Input/Output; Data		
Sep 11			
Sep 14	Data Types		
Sep 16			
Sep 18			
Sep 21	????		
Sep 23	**Exam One**		
Sep 25			
Sep 28			
Sep 30			
Oct 2			
Oct 5			
Oct 7			
Oct 9	NO CLASS		
Oct 12			
Oct 14			
Oct 16			
Oct 19			
Oct 21	**Exam Two**		
Oct 23			
Oct 26			
Oct 28			
Oct 30			
Nov 2			
Nov 4			

Syllabus

- Book/Handouts



- Software
  - Visual Studio 2008
- Grades
- Assignments
  - GIFT
- Lab

Microsoft® Visual Studio® 2008

Syllabus

- Working outside of class
  - 8 hours per week
  - 1 hour studying (not working on an assignment)
- Academic Dishonesty
  - cheating
  - penalties
- Grade Complaints
- Learning Support Services

Respect!

- Class starts promptly at 9:15 am!
- You: Arrive on time!
- Me: End class on time!

- Turn off your electronic devices!

- Don’t log on to the computers during lecture.

- Participate! Ask questions!

Online Calendar

BoxerApps

Open a BoxerApps Account

Beginning September 2007, your email at Pacific is handled by Google.com. This partnership enables us to provide you with 2 GB of storage along with a calendar, personal Google start page and more - **all accessible from any computer 24/7/365!**

From the myAccount options page, just click the link to BoxerApps to create your account and get started.

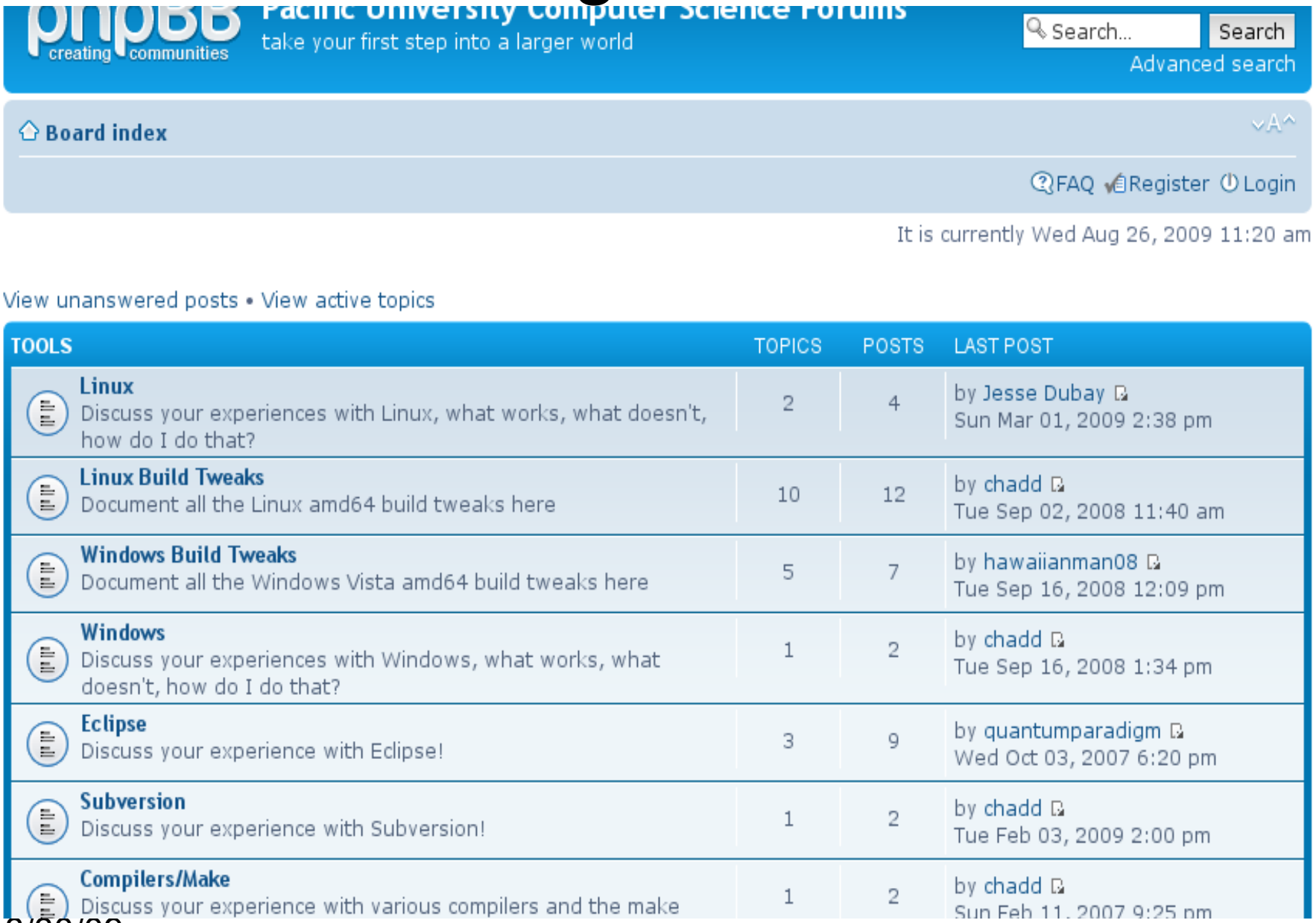
NOTE: Your BoxerMail password may be different than your PUNet password. If you forget your BoxerMail password, log into myAccount and go to BoxerApps to request a new one.

To access your BoxerApps account use any one of these links --

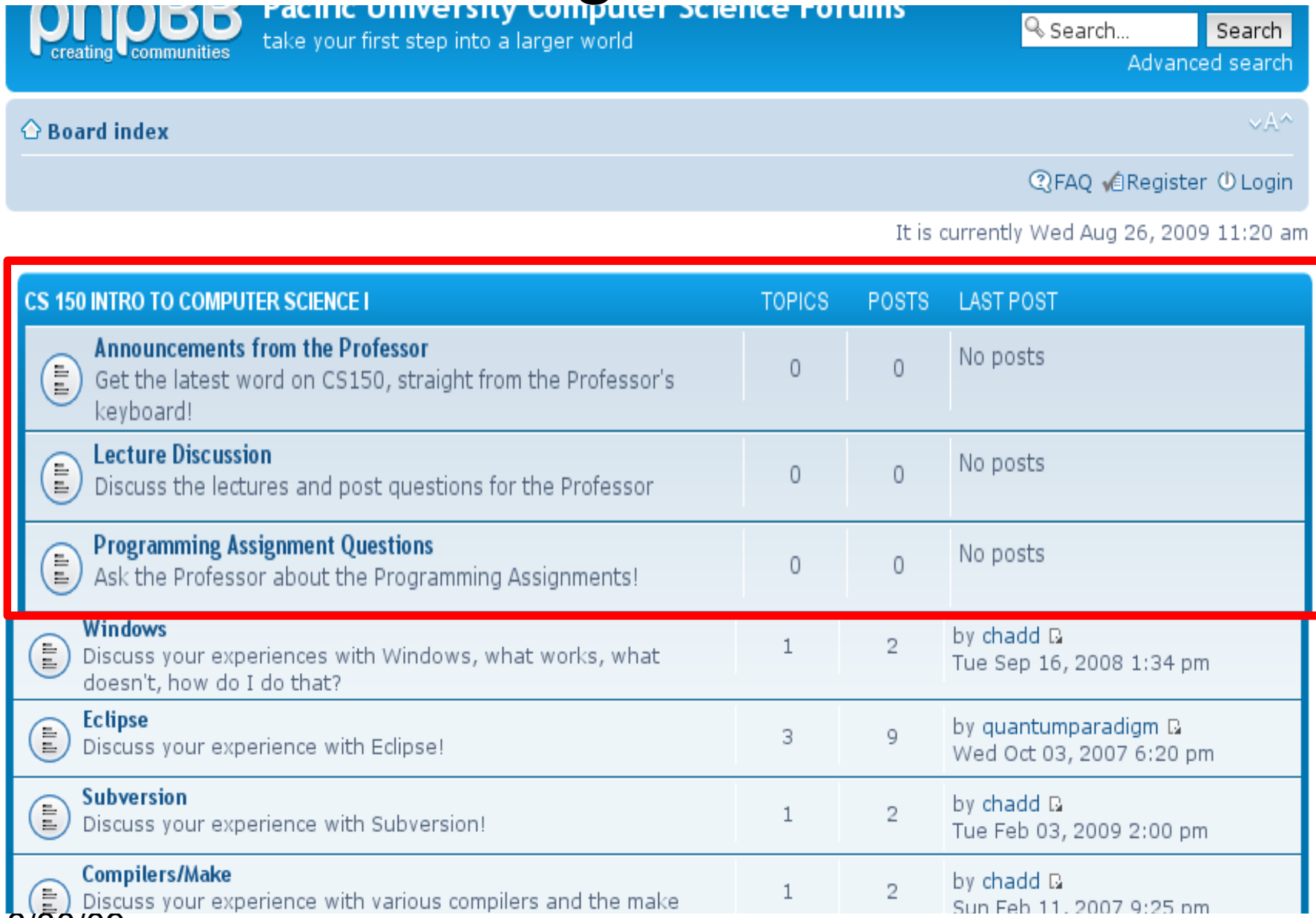
- http://boxerstart.pacificu.edu (Personalized Start Page)
- http://boxermail.pacificu.edu (Email)
- http://boxercal.pacificu.edu (Calendar)
- http://boxerdocs.pacificu.edu (Docs and Spreadsheets)

http://pacificu.edu/uis/generalinfo/tip_sheets.cfm

Message boards



Message boards



How to Succeed in CS150

- Don't miss class.
  - Take notes
- Try and read ahead
  - bring questions to class!

- Start programming assignments early
  - they take much longer than you think
- Do as much on your own as possible.

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How to Succeed in CS150

- Read the assignments carefully and follow all directions
- See me **as soon as possible** about any questions!
- Don't forget that you are at a small school!
  - and you are paying for it!

How to send an effective email

To: chadd@pacificu.edu

From: hall4242@pacificu.edu

Subject: CS150: quadratic formula

Hi Chadd,

I'm working on the programming assignment and I'm not sure how to calculate a square root in C++. Any hints?

Thanks,

Lesley

Homework!

- Homework assignment #1

- Fill out the survey on the class web page
- Bring a printed copy **to my office**

- DUE: By Friday 5pm

- Be prepared to discuss your answers!

Introduction to Computers and Programming

Chapter 1

What is a Computer?

- What is your definition?

- What is Computer Science?

Question

- Can computers think?

Program

- Program
  - ??
- Programming language
  - A language used to write programs
  - Examples?

Programming

- Be very specific about what you want the computer to do
- It follows directions precisely

Programming Language

- Machine language
  - Zeroes and ones
  - CPU dependent
- High level language
  - Instructions look like everyday English
    - sort of
  - Each instruction can perform many machine language instructions

C++

- Based on the C programming language
- C++ is a high level programming language
- One of today's most popular programming languages
- Used extensively in industry

Hardware

- Physical components of a computer
  - Central Processing Unit (CPU)
  - Main Memory (RAM)
  - Secondary Storage
  - Input Devices
  - Output Devices

- Let's look at some of these in detail

Memory (RAM)

Address	Contents
0	-27.2
1	354
2	0.05
3	-26
4	H
5	400
6	JMP 001
7	ADD 003
8	STO 005
9	X
10	1005

-Memory cells are 1 byte in size

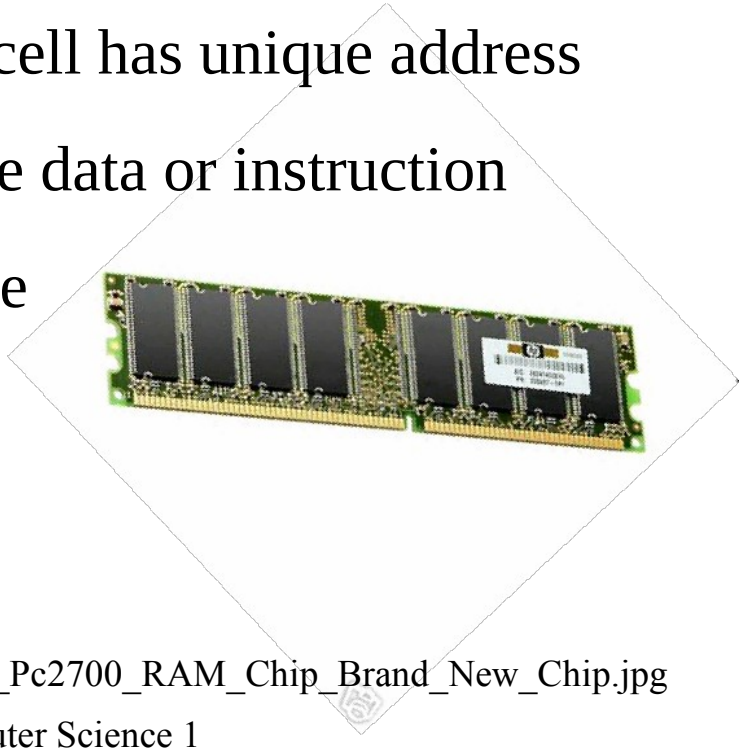
-Bytes are groups of 8 bits

-Bits are 0 or 1

-Each memory cell has unique address

-Contents can be data or instruction

-RAM is volatile



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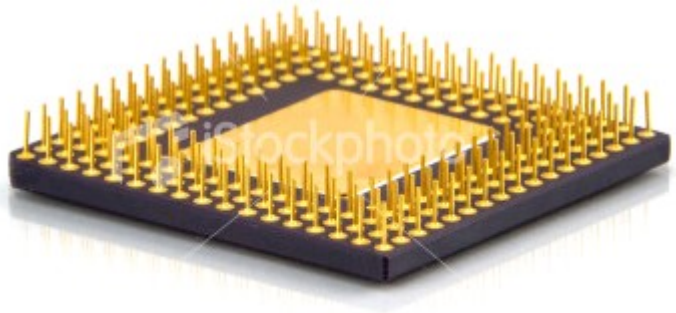
CPU

- A CPU
  - Fetches instructions
  - Performs instructions
  - Produces results



- A CPU consists of
  - Control unit: coordinates computer operations
  - ALU: performs arithmetic operations
    - integer unit
    - floating point unit

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Summary

- Today we have looked at:
  - The history of computers
  - The hardware of computers
  - The software of computers
  - Concept of programming
- Next time we will:
  - Learn how to write our first C++ program
- Completed sections 1.1 - 1.3 from the book
  - Pages1-12