

CS 150

Introduction to Computer Science 1

Professor: Chadd Williams

August 31, 2009

Chadd Williams

- <http://zeus.cs.pacificu.edu/chadd>
- 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

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Strain 202

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Forest Grove
OR 97116

[Map it](#)

CS150

```
int setId( int newId )  
id = ( newId >= 0 && newId <=10 )? newId : 0;  
return id;  
}
```

Introduction to Computer Science I

CS150 is a first course in computing and programming fundamentals. The goal of this course is to introduce you to problem solving through programming a computer. No previous computer experience of any type is required, but a deep interest in using one is. In this course, you will learn to program in C++. By the end of this course you should be able to write a program to do anything you want, given enough time and patience.

[Syllabus](#)
[\(Tentative\) Schedule](#)
[Coding Standards](#)
[Official Clock](#)
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Course Schedule

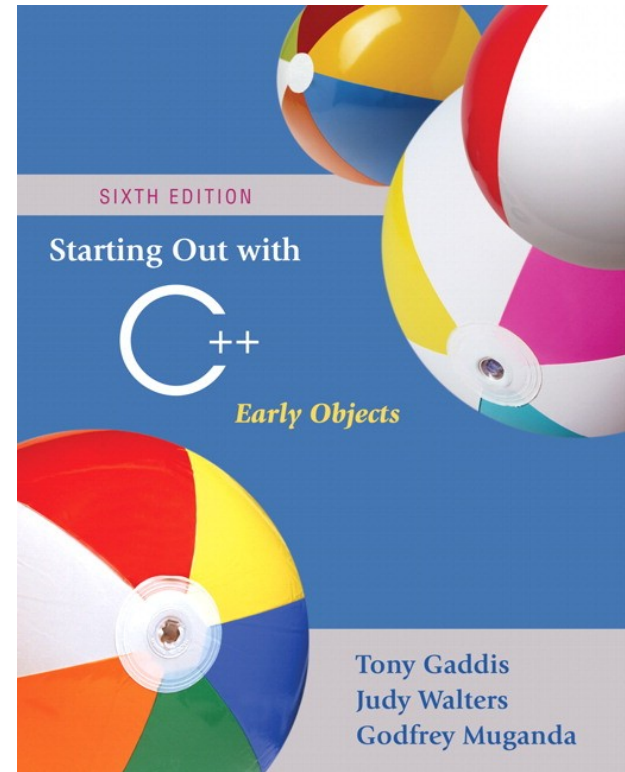
- The course schedule I have posted is tentative.
- The online schedule will be accurate and up to date.
- Contains:
 - handouts
 - assignments
 - labs

| 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 | | | |

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Syllabus

- Book/Handouts
- Software
 - Visual Studio 2008
- Grades
- Assignments
 - GIFT
- Lab



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.

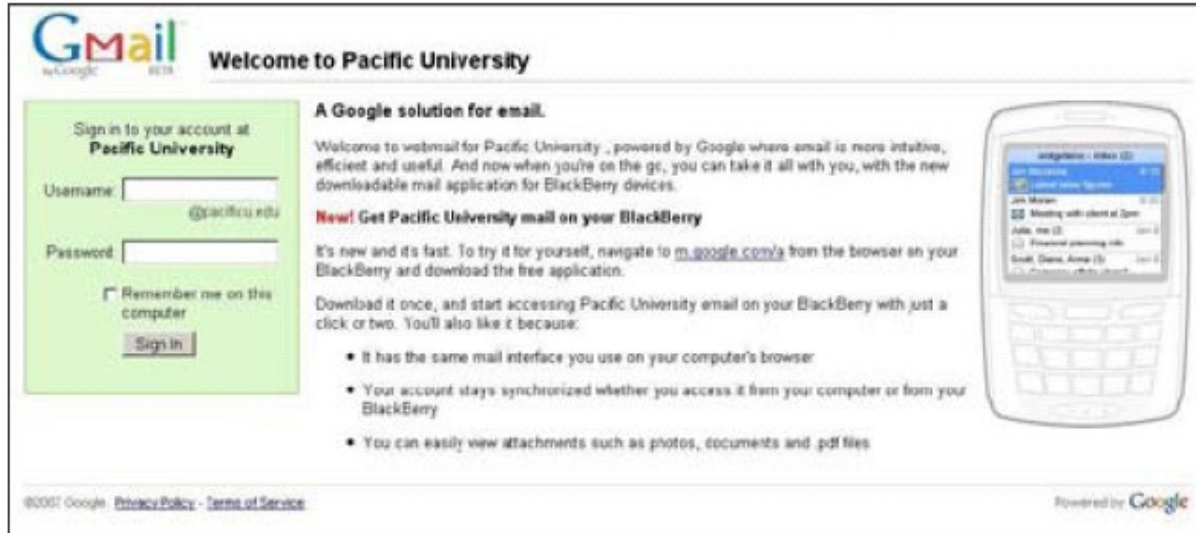
- Participate! Ask questions!

Online Calendar

| | Sun 8/30 | Mon 8/31 | Tue 9/1 | Wed 9/2 | Thu 9/3 | Fri 9/4 | Sat 9/5 |
|------|----------|---------------------------------|------------------------------|---------------------------------|--------------------------------------|---------------------------------|---------|
| | | First Day of Class | | | | CS445 in Marsh | |
| 7am | | | | | | | |
| 8am | | | | | | | |
| 9am | | 9:15 – 10:10 CS 150 Lecture | | 9:15 – 10:10 CS 150 Lecture | | 9:15 – 10:10 CS 150 Lecture | |
| 10am | | | | | | | |
| 11am | | | 11 – 12p Office Hours | | 11:20 – 12:50 A&S Faculty Meeting | | |
| 12pm | | 11:45 – 12:35 CS 445 Lecture | | 11:45 – 12:35 CS 445 Lecture | | 11:45 – 12:35 CS 445 Lecture | |
| 1pm | | | | | 1p – 2p Office Hours | | |
| 2pm | | 2p – 4p Office Hours | | | | | |
| 3pm | | | 2:45p – 4p CS 490 Lecture | | 2:45p – 4p CS 490 Lecture | | |
| 4pm | | | | 3:30p – 4:45p CS 150 Lab | | | |
| 5pm | | 5:15p – 6:15p Convocation | | | | | |

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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 Boxer-Mail password, log into myAccount and go to BoxerApps to request a new one.*

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- <http://boxercal.pacificu.edu> (Calendar)
- <http://boxerdocs.pacificu.edu> (Docs and Spreadsheets)

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

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| TOOLS | TOPICS | POSTS | LAST POST |
|--|--------|-------|--|
|  Linux Discuss your experiences with Linux, what works, what doesn't, how do I do that? | 2 | 4 | by Jesse Dubay  Sun Mar 01, 2009 2:38 pm |
|  Linux Build Tweaks Document all the Linux amd64 build tweaks here | 10 | 12 | by chadd  Tue Sep 02, 2008 11:40 am |
|  Windows Build Tweaks Document all the Windows Vista amd64 build tweaks here | 5 | 7 | by hawaiianman08  Tue Sep 16, 2008 12:09 pm |
|  Windows Discuss your experiences with Windows, what works, what doesn't, how do I do that? | 1 | 2 | by chadd  Tue Sep 16, 2008 1:34 pm |
|  Eclipse Discuss your experience with Eclipse! | 3 | 9 | by quantumparadigm  Wed Oct 03, 2007 6:20 pm |
|  Subversion Discuss your experience with Subversion! | 1 | 2 | by chadd  Tue Feb 03, 2009 2:00 pm |
|  Compilers/Make Discuss your experience with various compilers and the make | 1 | 2 | by chadd  Sun Feb 11, 2007 9:25 pm |

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CS 150 INTRO TO COMPUTER SCIENCE I

TOPICS

POSTS

LAST POST



Announcements from the Professor

Get the latest word on CS150, straight from the Professor's keyboard!

0

0

No posts



Lecture Discussion

Discuss the lectures and post questions for the Professor

0

0

No posts



Programming Assignment Questions

Ask the Professor about the Programming Assignments!

0

0

No posts



Windows

Discuss your experiences with Windows, what works, what doesn't, how do I do that?

1

2

by chadd [↗](#)
Tue Sep 16, 2008 1:34 pm



Eclipse

Discuss your experience with Eclipse!

3

9

by quantumparadigm [↗](#)
Wed Oct 03, 2007 6:20 pm



Subversion

Discuss your experience with Subversion!

1

2

by chadd [↗](#)
Tue Feb 03, 2009 2:00 pm



Compilers/Make

Discuss your experience with various compilers and the make

1

2

by chadd [↗](#)
Sun Feb 11, 2007 9:25 pm

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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

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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

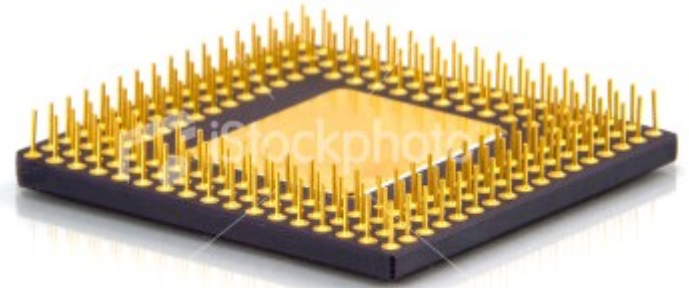
-Contents can be data or instruction

-RAM is volatile



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



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
 - Pages 1-12