



CS150 Intro to CS I

Fall 2012

Chapter 1

Introduction to Computers and Programming

- Reading: Chapter 1 (1.1 to 1.4)
- Good Problems to Work: p. 12 [1.13, 1.17] p. 24 [1.29, 4]

Interesting Questions

- What is your definition of a computer?
- What is your definition of Computer Science?
- Can computers think?

Writing Programs

- What is a program?
- What is a programming language?
- What are examples of programming languages?

Programming

- Be very specific about what you want the computer to do.
- The computer follows directions precisely.
- You can't just make stuff up and expect the computer to understand.
- On the other hand, sometimes you don't know exactly what you want to do ... try something ... anything ... you can't hurt the computer!!!! 😊

More about Programming Languages

- Programs are written in high-level languages
 - Instructions look like everyday English (sort of)
 - Each instruction can perform many machine language instructions
- Compilers
 - translate programs into machine language which is
 - zeroes and ones
 - machine dependent

C++ Programming Language

- C++ is
 - based on the C programming language
 - a high-level programming language
 - one of today's most popular programming languages
 - used extensively in industry

C++ Hello World Program

What is the output?

```
//*****  
// File name: hello.cpp  
// Author:    Bob Smith  
// Date:     08/27/2012  
// Purpose:  This program displays a welcome message to  
//           the user after the user enters their name  
//*****  
#include <iostream>  
#include <string>  
  
using namespace std;  
  
int main()  
{  
    string name;  
  
    cout << "Type your name, then press enter" << endl;  
    cin >> name;  
    cout << "Hello " << name << "! " << endl;  
  
    return EXIT_SUCCESS;  
}
```


Language Elements

- Key Words
 - Have special meaning in C++
 - `using namespace int`
- Programmer-Defined Identifiers
 - Names made up by the programmer
 - **employer**
- Operators
 - Perform operations
 - `* =`
- Punctuation
 - Used to mark the beginning and end of the program `{ }`
 - Used to separate C++ statements `;`

Syntax (Grammar)

- Rules that must be followed when constructing a program
- Controls the use of key words, programmer-defined identifiers, operators, and punctuation