Introduction
Discussion of Syllabus

- Instructor, TAs, office hours
- Prerequisites and high expectations:
  - CS I vs. CS II
  - Basic knowledge of C++, and the pre-test
  - High-expectations
  - Preparation for CSci 2300, Data Structures and Algorithms
- Textbooks
- Schedule of material
- Class lectures
- Requirements: labs, assignments, tests
- Late policy
- Academic integrity
Preparation for the Pre-Test

- Today’s class and Friday’s class.
- Review sheet with topics and problems; study from it!
- Don’t assume that what’s covered in class represents what will be on the pre-test!!
Overview of Today’s Class

- Review of C++ basics: variables, identifiers, types, operators, expressions, conditionals, input/output, loops, and arrays.

- Working example of prime number computations
Example 1: Is An Integer Prime?

The first example program reads an integer and determines if it is prime. The code is in a separate handout. We will use the code to quickly review various aspects of C++:

- Program structure
- include files
- comments
- types and values: int, bool, char, floating point
- string literals
- identifiers
- variables
- assignments and expressions (briefly)
- input / output
- type conversion
- conditionals
- loops
Example 2: The Sieve of Eratosthenes

In the second example we want to find all primes up to a user-specified upper limit. We could use the same prime test as Example 1 for each integer, but there is a better way. We will introduce the idea of the Sieve of Eratosthenes in class.
Code Features in Example 2

- constants
- Array of bool
  - starting at 0
  - lvalues
- do-while loop with internal if – else if – else structure to get the input and give the user a chance to recover from a mistake
- Initialization of the array.
- Nested for loops to implement the Sieve of Eratosthenes algorithm. Note the use of the continue statement.
We Haven’t Covered Everything

- The examples presented today should help remind you of many major aspects of C++.
- The examples are by no means complete, however, and do not cover everything we expect you to know for the Pre-Test.
- Use the review sheet, the readings in the Carrano book, and the readings in the Deitel and Deitel book.
- This week’s lab will explore the second example in more detail.
- We will focus on functions and parameters on Friday.