CMPS 12A

Introduction to Programming
Fall 2003
Brian F Hanks

Course Content
- In this course, we will cover the basics of computer programming.
- We will use the computer language Java
- I will also discuss programming style and program testing.

Target Audience
- This class is primarily for SOE majors
- Assumed knowledge includes
  - Some familiarity with Unix
  - Experience using web browser
Instructor and TAs

- Instructor
  - Brian Hanks
  - BE 189A
  - Office Hours: ??? or by appointment
- Teaching Assistant
  - Graham Grindlay

Text Book

- Java by Dissection, by Ira Pohl and Charlie McDowell
- We will cover chapters 1 through 6
- Available at Bay Tree and Slug Books
- There are some errors – see course web site. I'll try to address these during the course

Course Web Site

- Course web site is at http://www.soe.ucc.edu/classes/cmps012a/Fall03-02/
- Can get there from SOE home page, under classes link.
- Announcements, homework, programming assignments, syllabus, etc.
Assignments and Grading

- Weekly lab exercises and occasional homework assignments (10%)
- 7 programming assignments (25%)
- 4 quizzes (30%)
- Final Exam (30%)
- Class participation (5%)
  - Class attendance not mandatory, but…

Assignments and Grading

- You must get at least 50% in each of programming assignments, homework/lab, quizzes, and final to pass this class
- Getting 50% in each area is not sufficient
  - For example, if you get 51% in each area, you probably WILL NOT pass

Working Together

- All homework assignments, quizzes and the final must be done individually.
- All programming and lab assignments will be done with a partner, using Pair Programming.
- You will have the same partner for the entire quarter.
- Fill out sheet at end of class to allow us to assign partners.
Academic Dishonesty

- On the programming assignments and lab exercises, you may work only with your partner
- On the quizzes and the final, you must work alone
- Copying other people's programs is strictly forbidden – we have a program that looks for copying, and it is very good.
- You may not copy any programs or program parts from other books or the Internet

Academic Dishonesty

- Academic Dishonesty will not be tolerated.
- Results of Academic Dishonesty
  - Failure in this class
  - Possible expulsion from the major
- More detailed info on course web site
  - READ IT!
- See me if you have any questions about permissible behavior

Why Pair Programming?

- Studies have shown that students who pair
  - Are more likely to pass the course (72% vs 62%)
  - Are more likely to stay in CS, CE, or ISM major
  - Produce better quality programs
- In industry, you will have to work with others, so this is good experience
- You can use your partner as a resource – you learn from each other
Pair Draw

What's a program?

- Need a volunteer
- How many spaces are in this sentence?
  - “The quick brown fox jumps over the lazy dog.”

Algorithm

- An algorithm is a set of steps for solving a problem.
- We use algorithms everyday:
  - Recipe for baking chocolate chip cookies
  - Instructions for driving to the airport
Psuedocode

- English-like description of an algorithm
- Good way to start thinking about your program, without having to worry about detailed syntax
- Psuedocode to count the spaces in our sentence:

  Set a counter to 0.
  Start at the beginning of the sentence.
  Repeat for each character:
  - if the character is a space, then add 1 to the counter.
  until we get to the end of the sentence.

```java
/* CountSpaces
   * This is a Java program that counts the number of spaces in our example sentence.
   * Written by Brian Hanks
   */
class CountSpaces {
    public static void main( String[] args ) {
      int numSpaces = 0;
      String sentence = "The quick brown fox jumps over the lazy dog.",
      char space = ' ';
      int position = 0;
      while ( position < sentence.length() ) {
        if ( sentence.charAt( position ) == space ) {
          numSpaces = numSpaces + 1;
        }
        position = position + 1;
      }
      System.out.println("There are " + numSpaces + " spaces.");
    }
}
```

For Next Time

- Read:
  - Chapter 1 and sections 2.1 and 2.2 of the text
  - Course web site
    - Front page
    - Syllabus
    - Pair Programming
    - Academic Integrity
- Homework – due Wednesday, Oct. 1
  - Read "Kindergarten" paper – see web site