Announcements

• Assignment 7
  – Must have Storyboard!
  – Assignment and web page due tonight
  – Assignment 7 presentation on Apr 16 and 21.
    • Attendance required!

• Extra Office Hours today, Rodger: 11:30-3pm

• Last Java classwork is Tuesday, April 14
  – All Alice and Java classwork must be checked off by 4/23 to receive credit

• Final Exam - Tuesday April 28, 2-5pm
Java – Method/function format

• All methods in Java are functions
• Methods must be part of a class
• Methods must have a return type
  – Return type is “void” if no return type (method)
  – DO not use the name of the class or method for any variable
• Method has list and type of parameters
• Declare types of all local variables first
  – Exception: loop variables
More on `indexOf`

```java
String course = "CPS 4 and CPS 6 and CPS 4G";
System.out.println(course.indexOf("CPS");
System.out.println(course.indexOf("CPS", 6));
System.out.println(course.indexOf("CPS", 14));
```

- `indexOf` with a string and number argument finds the position of the first occurrence starting from that number position on
Problem

• Given a Phrase and a word, return true if the word occurs at least twice in the phrase.
Finish Code – What does this do?

```java
public class StringExample {
    public boolean AppearTwice (String phrase, String word) {
        // declare types of variables and initial values
        int firstPosition = -1;
        int secondPosition = -1;
        // find first occurrence
        firstPosition = phrase.indexOf(word);
        // find second occurrence - FILL IN
        if (firstPosition >= 0) {
            secondPosition = phrase.indexOf(
        } else {
            return false;
        }
    }
    return true;
}
```
Java Code - Note

• How many variables are there and what are there types?
• How many times is a variable declared (given its type)?
• Where is the return value?
• How many parameters and what are their types?
Adding a helper method to a class

```java
public class NameOfClass {

    public String someMethod(String [] str) {
        // code here
    }

    public int helperMethod(String str, int n) {
        // code here
    }

}
```
Adding a helper class

• Note the following
  – Names of methods and how many
  – Location of methods
  – Return types
  – Parameters
  – Where do return statements go?
Classwork today

• Create Java Project: CPS4Apr9

• Classwork today – 3 APTs
  – AccessLevel – Non-DNA problem
    • Given access levels and a minimum permission level, determine who has access to a resource.
  – Protein Counter – number of strings that have at least 3 copies of given amino acid
    • Consider a helper function to count number of amino acids in one string
  – DNAHeavyMax – most frequently occurring nucleotide
    • Consider a helper function
Extra Credit (5 pts)

- ProteinFinder – finding a protein
  - Use indexOf to find codons
  - Search for stop codon past the start codon, not from beginning of string