CompSci 4
Java 3
Nov 25, 2008

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Announcements

• Assignment 7
  – Storyboard due today
  – Assignment and web page due next Tuesday
  – Assignment 7 presentation on Dec 13! Attendance required!
  – Sec 1: 9-noon, Sec 2: 7-10pm

• Last Java classwork is Tuesday, Dec 2
  – All Alice and Java classwork must be checked off by 12/5 to receive credit

• Java in-class Quiz on Thurs, Dec 4
Java – Method/function format

• Method/function must be part of a class
• Method/function 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/function has list and type of parameters
• Declare types of all local variables first
  – Exception: loop variables
More on indexOf

String class = “CPS 4 and CPS 6 and CPS 4G”;
System.out.println(class.indexOf(“CPS”));
System.out.println(class.indexOf(“CPS”, 6));
System.out.println(class.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.
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(
        }
        if (secondPosition > 0)
            return true;
        return false;
    }
}
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: CPS4Sec1Nov25 or Sec2
- 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 frequent occurring nucleotide
    - Consider a helper function
Extra Credit

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