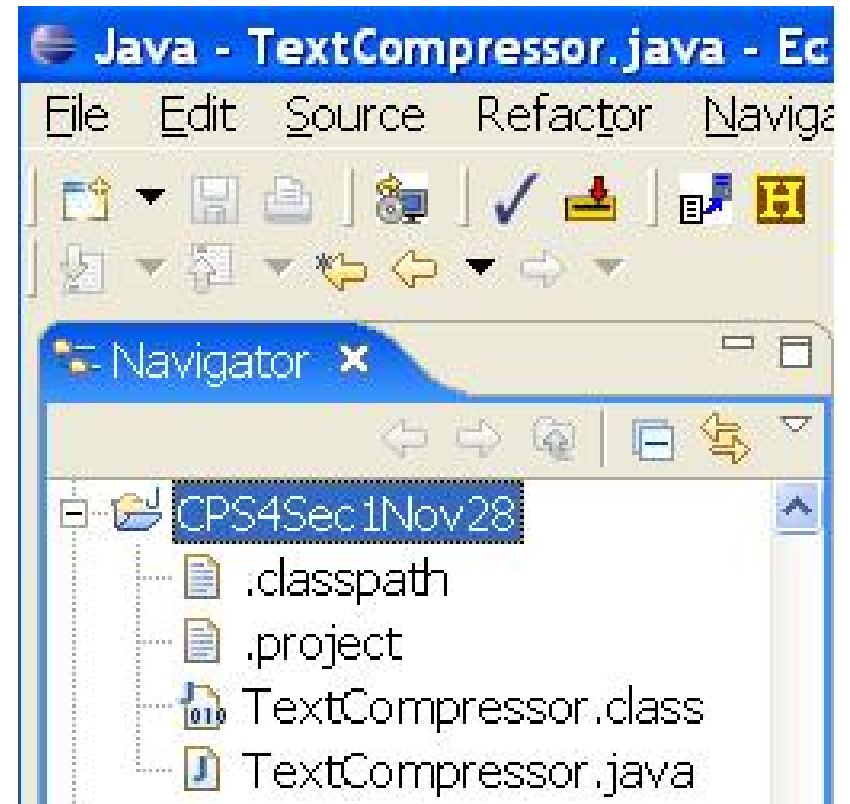


CompSci 4

Java 3

Nov 27, 2007

Prof. Susan Rodger



Announcements

- Assignment 7
 - Storyboard due today
 - Assignment and web page due Thursday
 - Turn in Alice world, web page, and README file
 - Also link in web page
 - Demo due next Tuesday
- Last Java classwork is this Thursday
 - All Alice classwork must be checked off by 11/30 to receive credit
 - All Java classwork must be submitted by Dec. 4 to receive credit.

Java – Method/function format

- Method must be part of a class
- Method 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

```
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.

Finish Code – What does this do?

```
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 their 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

```
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: CPS4Sec1Nov27
- Classwork today – 3 APTs, 1 is extra credit
 - 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
 - ProteinFinder – finding a protein
 - Use indexOf to find codons
 - Search for stop codon past the start codon, not from beginning of string

Extra Credit

- Include extra credit in same project.
- Submit all three APTs at the same time.