

## HOMWORK 3

1. Create a class called Dog with an overloaded bark( ) method. This method should be overloaded based on various primitive data types, and print different types of barking, howling, etc., depending on which overloaded version is called. Write a main( ) that calls all the different versions.
2. Stacks are often used to evaluate expressions in programming languages. Make your own stack class. Using a StringTokenizer, split the string. And evaluate the following expressions, where '+' means "push the following letter onto the stack," and '-' means "pop the top of the stack". Make a output file("stack.txt") and write a push and pop item.  
(Capture the output file.)

String:

```
+ C + o + m + p + u + t + e - + r - + P + r + o + g - + r + a + m  
+ 1 + 6
```

Output file:

```
[top] C  
[top] o C  
[top] m o C  
...  
[top] e t u p m o C  
<pop> e  
[top] t u p m o C  
...
```

- 3. Create a class with an int field that's initialized from a constructor argument. Create two arrays of these objects, using identical initialization values for each array, and show that Arrays.equals( ) says that they are unequal. Add an equals( ) method to your class to fix the problem.**
  
- 4. Using a Random class(java.util.Random), creates letters randomly and determines whether they're vowels or consonants**
  
- 5. A *Fibonacci sequence* is the sequence of numbers 1, 1, 2, 3, 5, 8, 13, 21, 34, and so on, where each number (from the third on) is the sum of the previous two. Create a method that takes an integer as an argument and displays that many Fibonacci numbers starting from the beginning. If you run java Fibonacci 5 (where Fibonacci is the name of the class) the output will be: 1, 1, 2, 3, 5.**