Section 13: Strings

Exercise Solutions:

1) What do the following lines of code print to the console?  
   ```java
   String word = "ice";
   println( word.length() + " bl" + word.charAt(0) + "nd m" + word );
   ```
   3 blind mice

2) Fill in the blanks in the Processing code for the function frequency(), which returns the number of times that a particular char c appears in a String s. For example, frequency("missus","s") returns 3.
   ```java
   int frequency(String s, char c) {
     int count = 0;
     int i = 0;
     while (i < s.length()) {
       if ( s.charAt(i) == c ) {
         count = count + 1;
       }
       i = i + 1;
     }
     return count;
   }
   ```

3) Write Processing code below to create the string "1, 2, 3, 4, 5, 6, 7, 8, 9" using a for-loop and store it in the variable result. Pay special attention to the spaces and commas!
   ```java
   String result = "";
   int i = 1;
   while( i < 9 ) {
     result = result + i +", ";
     i = i + 1;
   }
   result = result + "9";
   ```

4) After the following code is executed, what string is stored in msg?  "happy"
   ```java
   char[] alphabet = {'a','b','c','...','x','y','z'}; // assume all 26 written out
   int[] nums = {7,0,15,15,24};
   String msg = "";
   int i = 0;
   while ( i < nums.length ) {
     msg = msg + alphabet[ nums[i] ];
     i = i + 1;
   }
   ```
Notice that we first access `nums[i]`, which gives us an integer. We then use that integer as the index with which we access the `alphabet[]` array. Concatenating these characters to our string `msg` one-by-one in the for-loop, we end up with "happy".