Sample Final Exam

1. Insert the lettered code fragments where they belong in the program below, which reads data from one file and writes it to another:

   a) throws FileNotFoundException
   b) input.hasNextLine()
   c) Scanner input;
   d) FileInputStream inputFile
   e) input =
   f) input.close();
   g) new FileOutputStream("output.txt")
   h) output.println(s);
   i) s = input.nextLine();
   j) PrintWriter output;

   public class FileQ {

      public static void main (String [] args) {____ {

         String s;

         ______
         ______ new Scanner(new ______ ("inputfile.txt");

         ______
         output = new PrintWriter____

         while (____) {____
               ______
               ______
         }
       ______
       ______
       output.close();
      }

   }
}
2. Write a method that opens an input file and two output files. Read a line of data (as a String) from the input file, then write it to the output files, alternating lines — in other words, one output file gets all the even lines, and the other gets all the odd lines. Then close all files.

3. Write a Java program that reads in Strings and uses an array of 26 ints to count the occurrence of each letter of the alphabet within the set of Strings read. The program should continue prompting for Strings and counting letters until the user signals the desire to quit; then the program should display the total counts of the letters in all the Strings.
4. Trace the code below and show its output:

```java
public class Exam4 {
    public static void main(String[] args) {
        String starter = new String("oh for an hour of blissful rest");
        char[] array = new char[starter.length()];
        for (int x = 0; x < array.length; x++)
            array[x] = starter.charAt(x);

        for (int y = 1; y < array.length; y++)
            System.out.print(array[y]);

        System.out.println();
        for (int z = 0; z < array.length; z++)
        {
            if (array[z] == 'r')
                array[z] = '@';
            if (array[z] == 'o')
                array[z] = '+';
        }

        for (int n = array.length-1; n >= 0; n--)
            System.out.print(array[n];
        System.out.println();
    }
}
```

Output:
5. **Add the necessary code to make the buttons active** in the following program. Each button should **change the value of the Label to its own text and call repaint**:

```java
// imports omitted for brevity
public class SE2 extends JFrame implements ActionListener {
    JPanel buttons, display;
    JLabel theLabel;
    JButton b1, b2, b3;
    public SE2 () {
        // constructor body omitted for brevity
    }
    public void setupButtons() {
        buttons = new JPanel();
        buttons.setLayout(new GridLayout(3,0));
        b1 = new JButton("Be careful what you wish for");
        b2 = new JButton("Beware the Jabberwock, my son");
        b3 = new JButton("The dog barks at midnight");
        b1.addActionListener("b1");
        b2.addActionListener("b2");
        b3.addActionListener("b3");
        // add (some of) your code here:
        buttons.add(b1);
        buttons.add(b2);
        buttons.add(b3);
    }
    public void actionPerformed (ActionEvent e) {
        // add more code here
    }
    public void paint (Graphics g) {
        super.paint(g);
    }
    // main method omitted for brevity
}
```
