Open Source and Mobile App Development: Lab 10a

Assigned: Wednesday, 9 January 2013

Due: Monday, 14 January 2013

1. **Objective**

   Your goal is to practice working with binary while working with files, strings, and command-line arguments. You will find the material in Chapter 9 of *Introduction to Java Programming, Eighth Edition* extremely valuable when working on this assignment.

2. **Task**

   Create a Java project Binary and a class BinaryEncoder. The framework for BinaryEncoder is as follows:

```
/**
 * The BinaryEncoder object converts messages in ASCII text to binary and writes
 * the binary stream to file.
 * @author Dr. Borowski
 * @version 1.0
 */
public class BinaryEncoder {
    private final PrintWriter output;
    private final String message;

    /**
     * Constructs a binary encoder that encodes the ASCII message in binary
     * and writes the output to the file named outputFilename.
     *
     * @param outputFilename - the name of the output file to create
     * @param message - the message to encode
     *
     * @throws FileNotFoundException - if the output file does not denote
     * an existing, writable regular file; if a new regular file
     * cannot be created; or if some other error occurs while opening or
     * creating the file
     * @throws IOException - if the outputFilename exists but is a
     * directory rather than a regular file, does not exist but cannot be
     * created, or cannot be opened for any other reason
     */
    public BinaryEncoder(String outputFilename, String message)
                throws FileNotFoundException, IOException { }

   /**
    * Converts the message to binary, writes the binary to the output
    * file, and closes the PrintWriter.
    */
    public void encode() { }

   /**
    * Converts a decimal value into a binary String representation.
    * @param value the base 10 value to convert to binary
```

```
     * @param numberOfBits the number of bits the binary representation must
     * contain
     * @return the String of a binary representation of value
     * @throws NumberFormatException - if the value is less than 0
     */
    public static String decimalToBinary(int value, int numberOfBits)
                throws NumberFormatException { }

    public static void main(String[] args) {
        if (args.length != 2) {
            System.err.println(
                "Usage: java BinaryEncoder [output file] [message]");
            System.exit(1);
        }
        BinaryEncoder binaryEncoder = null;
        try {
            binaryEncoder = new BinaryEncoder(args[0], args[1]);
        } catch (IOException ioe) {
            System.err.println(
                "Error: Cannot open file '" + args[0] + "' for output.");
            System.exit(1);
        }

        try {
            binaryEncoder.encode();
        } catch (IllegalArgumentException iae) {
            System.err.println("Error: " + iae.getMessage());
            System.exit(1);
        }
        System.exit(0);
    }
```

3. **Notes**

   This section is purposefully left blank for you to take notes on how to run your program.