Introductory Java Programming

Queen Mary
University of London

School of Electronic Engineering
and Computer Science

Course Code: EBU4201

Lab Sheet 2: Methods / Javadocs

1. Write a Java program called **Pattern1** using **nested loops** that prints a pattern, where the number should be taken from the command line argument. For example, running **java Pattern1 5** should produce the following output:

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

2. Write a Java program called **Pattern2** using **nested loops** that prints a pattern, where the number should be taken from the command line argument. For example, running **java Pattern2 5** should produce the following output:

```
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
```

3. Using your answers from *Questions 1* and *2* in this lab sheet, complete the code below. The class **Patterns** does the same things as what was required for *Questions 1* and *2*. However, the code to print the patterns is not directly written in the **main()** method; instead, it is written in the two methods:

> **public void printPattern1(int n)** – **n** is the input number
> **public void printPattern2(int n)** – **n** is the input number

The **main()** method of this class should create an instance of the class and then call the two methods above to print out the two patterns.

```
public class Patterns {
    public void printPattern1(int n) {
        // Write your code here (taken from your solution of Question 1).
    }
    public void printPattern2(int n) {
        // Write your code here (taken from your solution of Question 2).
    }
    public static void main(String[] args) { // Write your code here. }
}
```

4. Download the file **CountDownExample.java** from the course website in QMplus (under the **Coursework & Lab Information** section) and do the following:

   i) Compile and run the **CountDownExample** program.

   ii) Generate *Javadocs* for the **CountDownExample** program. In the directory where you stored the file **CountDownExample.java**, create a sub-directory called **docCD** [1] and then type the following command on the command line:

   ```
   javadoc -d docCD CountDownExample.java
   ```

   This command has created a whole set of different files in the **docCD** directory. Open up the file **index.html** in a web browser and take a look at what it has produced.

   iii) Change the program **CountDownExample** so that it counts up, instead of counting down. When the program gets to the end of counting, it should now print the message **All done!** (rather than **Time up!**). Note that you will also need to change the *Javadoc* comments to your own comments. *Name your program* **CountUpExample.java**.

   iv) Generate *Javadocs* for the new program **CountUpExample**.

IMPORTANT: From now on, all your programs must contain both internal comments <u>and</u> *Javadoc* comments.

** END of Lab Sheet 2: Methods / Javadocs **

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[1] Using **mkdir docCD** from the command line in your directory is faster than using a Windows file manager to do this!