

CS 212 – Spring 2023 – Project 1

Assigned: 21 February 2023
Due: 7 March 2023
Cutoff: 10 March 2023

Write a main application called `Project1.java`, and a GUI (that extends `JFrame`) called `RomanNumeralGUI.java`. The main program should open a file called "input.txt" which will contain Roman numerals. There may be more than one Roman numeral on a line, and they will be separated by commas.

The GUI should have a grid layout of one row and two columns (column 0 and 1). Column 0 should contain each individual Roman numeral from the file. Column 1 should have corresponding lines that give the Arabic value of the Roman numeral. For example, if the input file contains

```
IX  
MMXXIII , VII
```

Then the content pane of the GUI should contain

```
IX          9  
MMXXIII    2023  
VII         7
```

The core of this project is the conversion of a Roman numeral to an Arabic numeral. It is suggested you write this method first and test it. Let's call it *valueOf* which, when given a `String` representing a Roman numeral will return an *int* for its integer Arabic value. That is, `valueOf("VII")` returns 7. A nice tutorial on Roman numerals and conversion to Arabic can be found at <https://tutorialhorizon.com/algorithms/convert-roman-number-to-integer/>. The link to this tutorial is also on Blackboard.

Submitting the Project.

You should now have the following files to submit for this project:

```
Project1.java  
RomanANumeralGUI.java
```

(You do not have to submit `TextFileInput.java` or the input file.)

Submit a jar file.

Rather than upload the files above separately, we will use Java's facility to create the equivalent of a zip file that is known as a **Java AR**chive file, or "jar" file.

Instructions on how to create a jar file using Eclipse are on Blackboard. Create a jar file called **Project1.jar** and submit that. When creating the jar file be sure to select the option to include *source* files (that is, `.java` files) and **not** `.class` files.

Upload your project to Blackboard by the due date for full credit.