Assignment - Creating Web Services

This is an individual assignment, you write your code, others write theirs. Plagiarism will be referred the disciplinary committee, you have been warned.

Part I

Roman Numeral Converter (50%)

Overview

For this part you must create a Java program to convert a roman numeral to a decimal and vice-versa.

Example:

Input 1079

Output MLXXIX

Conversion Example

To convert 2012 into roman numerals.

Step 1 Identify the highest number which fits into 2012, X is the remainder after subtracting the value from 2012 i.e.X=2012-1000

Step 2 You then repeat the procedure with X. Keeping track of the of the numeral corresponding to the biggest number that fits.

Repeat until the number is zero.

Table 1: Roman Numeral Values

1	I
4	IV
5	V
9	IX
10	X
40	XL
50	L
90	XC
100	C
400	CD
500	D
1000	M

Create Web Service

Now you must take the functionality completed in Part I and create a web service which provides this functionality. In the case of the Roman numeral converter no UI is required, however you should develop client code for that web service which invokes the GET request based on user input. Final 20% reserved for bi-directional transformation (from numerals, and to numerals supported by the API)

Part II

API Proxy (50%)

- Develop an API proxy for acquiring weather data, you will be acting as a proxy server as defined to be "a server that acts as an intermediary for requests from clients seeking resources from other servers".
- The user will make a request to your application specifying a city (a GET). Your appointed method on the server will make a client connection to `http://openweathermap.org/forecast` to acquire the data and return it to the client, as such your application acts as an intermediary. You will need to sign up to acquire an API key.
- The specific URL you will access to get the information should be `http://api.openweathermap.org/data/2.5/forecast?q=[INSERT_CITY]&mode=json&appid=[INSERT_API_ID]`
- For this task you can use Jersey HTTP Clients on your server side and client side.