Overview

A Tiger kidnapping has taken place along the motorway from Dublin to Belfast. A vehicle was seen leaving the scene of the incident. A witness has provided details on the license plate number of the vehicle, listed in the Witness Report section below. The vehicle passed through a toll booth where its license plate number was automatically recorded. The National Roads Authority (NRA) has provided the data from the toll booth traffic camera in a comma delimited CSV file. There are approximately 79,999 license plate numbers listed in the file.

You may assume that a typical license plate is of the following format:

YY-LL-NNNNNN

You are required to print a sorted list of all license plates corresponding to the data provided below.

Erroneous License Plate Data

The license plate data contains a number of incorrect license plate entries. These entries are characterised by the following errors:

1) As a result of read errors from the toll booth camera, a number of license plate numbers are incomplete (e.g. "04 L").
2) As a result of dirt on the license plates, a number of license plate values were read incorrectly (e.g. "08 LH 1234" read as "0**S** LH 1234", "03 D 123456" read as "**O**3 D 123456").
3) A small number of, less than clever, drivers have attempted to avoid the toll booth payment by modifying their license plate numbers. They have modified the county code but have modified it incorrectly (e.g. "10 DL 1234" becomes "10 DX 1234"). To see the complete list of county codes Google "Ireland license plate county codes".
4) A number of license plates values have not been printed on a license plate with the correct plate dimensions. These license plate numbers contain multiple spaces between the year, county and number data (e.g. "04   LH   1244").

Witness Report

The witness to the Tiger kidnapping has provided the police with the following information about the license plate number of the vehicle involved. The details are as follows:
1) The year contains a "0".
2) The county code contains a "W".
3) The number contains a single "1".
4) The numbers after the county code sum to 26.
5) The numbers were between 3 and 5 digits in length.

Functional Requirements

You are required to develop a solution which will perform the following tasks:

1) Read the license plate data into a String or StringBuilder object.
2) Apply the regular expression(s) necessary to filter out the erroneous license plate numbers described in points 1-4 of the Erroneous License Plate Data section.
3) Store the license plate numbers which satisfy points 1-4 in the Witness Report section in a storage container which only stores unique license plate numbers.
4) Sort the matching plates by year and print to the screen.

Additional Resources

The FileUtility class provided in the archive on Moodle will allow you to load the license plate data. You will need to use code similar to the code listed below:

```
//StringBuilder object to store data from file

StringBuilder data=null;

//try to read the file

try

{

        //read data from file

        data = FileUtility.load("name.csv", "c:\\temp\\");

}

//catch any errors that occur

catch(Exception e)

{

//error message to tell user that something bad happened!

}

//convert data in StringBuilder to String object

String myData = data.toString();

//apply your regular expressions...
```