Programming Exercise: Parsing Export Data

Assignment

The CSV file **exportdata.csv** has information on the export products of countries. In particular it has three column headers labeled **Country**, **Exports**, and **Value (dollars)**. The **Country** column represents a country from the world, the **Exports** column is a list of export items for a country, and the **Value (dollars)** column is the dollar amount in millions of their exports in the format of a dollar sign, followed by an integer number with a comma separator every three digits from the right. An example of such a number might be "$400,000,000".

The CSV file **exportdatasmall.csv** is a smaller version of the file above with the same columns that you may find helpful in testing your program. We show a picture of it here.

	A	B	C
1	Country	Exports	Value (dollars)
2	Germany	motor vehicles, machinery, chemicals	$1,547,000,000,000
3	Macedonia	tobacco, textiles	$3,421,000,000
4	Madagascar	coffee, vanilla, shellfish	$864,800,000
5	Malawi	tea, sugar, cotton, coffee	$1,332,000,000
6	Malaysia	semiconductors, wood	$231,300,000,000
7	Namibia	diamonds, copper, gold, zinc, lead	$4,597,000,000
8	Peru	copper, gold, lead, zinc, tin, coffee	$36,430,000,000
9	Rwanda	coffee, tea, hides, tin ore	$720,000,000
10	South Africa	gold, diamonds, platinum	$97,900,000,000
11	United States	corn, computers, automobiles, medicines	$1,610,000,000,000
12			

Write the following program. Be sure to see the sample program in this video.

1. Write a method named tester that will create your CSVParser and call each of the methods below. You would start your code with:

```
FileResource fr = new FileResource();
CSVParser parser = fr.getCSVParser();
```

Each time you want to use the parser with another method, you will need to reset the parser with this statement before calling that method.

```
parser = fr.getCSVParser();
```

2. Write a method named **countryInfo** that has two parameters, **parser** is a **CSVParser** and **country** is a String. This method returns a string of information about the country or returns “NOT FOUND” if there is no information about the country. The format of the string returned is the country, followed by “: “, followed by a list of the countries’ exports, followed by “: “, followed by the countries export value. For example, using the file **exportdatasmall.csv** and the country Germany, the program returns the string:

```
Germany: motor vehicles, machinery, chemicals: $1,547,000,000,000
```

3. Write a void method named **listExportersTwoProducts** that has three parameters, **parser** is a **CSVParser**, **exportItem1** is a String and **exportItem2** is a String. This method prints the names of all the countries that have both **exportItem1** and **exportItem2** as export items. For example, using the file **exportdatasmall.csv**, this method called with the items “gold” and “diamonds” would print the countries

```
Namibia
South Africa
```

4. Write a method named **numberOfExporters**, which has two parameters, **parser** is a **CSVParser**, and **exportItem** is a String. This method returns the number of countries that export **exportItem**. For example, using the file **exportdatasmall.csv**, this method called with the item “gold” would return 3.

5. Write a void method named **bigExporters** that has two parameters, **parser** is a **CSVParser**, and **amount** is a String in the format of a dollar sign, followed by an integer number with a comma separator every three digits from the right. An example of such a string might be “$400,000,000”. This method prints the names of countries and their Value amount for all countries whose Value (dollars) string is larger than the amount string. For example, if **bigExporters** is called with the file **exportdatasmall.csv**and amount with the string $999,999,999, then this method would print eight countries and their export values shown here

```
Germany $1,547,000,000,000
Macedonia $3,421,000,000
Malawi $1,332,000,000
Malaysia $231,300,000,000
Namibia $4,597,000,000
Peru $36,430,000,000
South Africa $97,900,000,000
United States $1,610,000,000,000
```