

Puzzle Node



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[#1] International trade

This puzzle was contributed by [Shane Emmons](#) and published on March 15, 2011

Submit your solution

UPDATE 1: Due to a [BigDecimal bug](#) in all existing implementations of Matz's Ruby Interpreter, our solution is incorrect. Those who have passing solutions to this problem have been bitten by the same bug. We will soon upload a solution that should match what all other Ruby implementations produce, which should also match correct solutions from other languages.

UPDATE 2: Updated solution file so that calculation is correct. We implemented our own rounding function rather than using BigDecimal's. If you're using Matz's Ruby, you'll need to do the same. Folks who submitted earlier will still be given credit for solving the problem, of course.

You have been given two files. The first is an XML file containing the conversion rates for exchanging one currency with another. The second is a CSV file containing sales data by transaction for an international business. Your goal is to parse all the transactions and return the grand total of all sales for a given item.

Problem

What is the grand total of sales for item DM1182 across all stores in USD currency?

Notes

- After each conversion, the result should be rounded to 2 decimal places using [bankers rounding](#).
- Some conversion rates are missing; you will need to derive them using the information provided.

- Since we are working with financial transactions, we need to avoid floating point arithmetic errors.

Example

Given a `RATES.xml` of:

```
<?xml version="1.0"?>
<rates>
  <rate>
    <from>AUD</from>
    <to>CAD</to>
    <conversion>1.0079</conversion>
  </rate>
  <rate>
    <from>CAD</from>
    <to>USD</to>
    <conversion>1.0090</conversion>
  </rate>
  <rate>
    <from>USD</from>
    <to>CAD</to>
    <conversion>0.9911</conversion>
  </rate>
</rates>
```

and a `TRANS.csv` of:

```
store,sku,amount
Yonkers,DM1210,70.00 USD
Yonkers,DM1182,19.68 AUD
Nashua,DM1182,58.58 AUD
Scranton,DM1210,68.76 USD
Camden,DM1182,54.64 USD
```

Your program should return 134.22 as the total of DM1182 in USD. You can use the sample files from this example to test your program before submitting an answer for the real dataset for this problem.

Files

 [1-international-trade.md](#)
 [TRANS.csv](#)
 [RATES.xml](#)
 [SAMPLE TRANS.csv](#)
 [SAMPLE RATES.xml](#)
 [SAMPLE OUTPUT.txt](#)

PuzzleNode is a site for coders who enjoy to work on challenging problems, and is inspired by similar efforts such as [Project Euler](#) and the [Internet Problem Solving Contest](#). Once upon a time it also served as an entrance exam of sorts for folks looking to join [Mendicant University](#).

This project was developed, maintained, and supported by Mendicant University students and staff until the school [changed directions](#) and put a hold on all existing projects, including PuzzleNode. If you are interested in jump starting this project just open a ticket in our [issue tracker](#) to get the ball rolling.

Happy hacking! [Return to top](#)

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