Programming Exercise – VWAP calculation

Description

Given a stream of price data for multiple currency pairs in the form of:

[Timestamp, Currency-pair, Price, Volume]

We would like the solution to output the VWAP calculated over the input stream.

The VWAP should be calculated on an hourly window.

The VWAP should be calculated for each unique currency pair.

Example data:

An example stream of data would be something like the following:

TIMESTAMP	CURRENCY-PAIR	PRICE	VOLUME
9:30 AM	AUD/USD	0.6905	106,198
9:31 AM	USD/JPY	142.497	30,995
9:32 AM	USD/JPY	139.392	2,890,000
9:33 AM	AUD/USD	0.6899	444,134
9:34 AM	NZD/GBP	0.4731	64,380
9:35 AM	NZD/GBP	0.4725	8,226,295
… etc			

Considerations:

The incoming stream of data will be significant, and care should be taken to avoid JVM crash.

Deliverable:

- Solve the problem as though it were "production level" code.
- The solution submitted should include source-code, configuration and any tests you deem necessary.
- Solve the problem in java.
- It is not required to provide any graphical interface.