# Web Technologies II

## Homework 1 Exercise

Create a credit card currency calculator using the given code mock-up. The calculator must convert the sum in one currency into another and apply a bank fee. Currency exchange rates have to be loaded from the given URL.

The attached script is a mock-up of the final code. It separates business logic from presentation:

- main logic (accessing currency exchange rate file, conversion, preparation of output data) should be carried out in index.php
- view.php is loaded as the last instruction of index.php
- presenation logic (HTML code + little analysis of variable values and output code) should happen in "view.php"

Main tasks that have to be accomplished

- analyze user input data, perform conversion **only if all mandatory fields are filled and data corresponds to the expected type** (the amount and bank fee can be recognized as positive decimal values (without any letters, not empty, bank fee must be in range from 0 to 100), the currency codes are correct and present in $currencies array);

- download the currency exchange rate file that corresponds to one of the currencies (card currency or transaction currency) from the remote server on the first calculation request (**don't forget that the service may be unavailable**, prepare a specific message for this case!)
- after initial download, save the currency exchange rate document in the xml/ directory under the name <currency>.xml (make sure directory permissions allow PHP to write there, Linux: chmod a+w xml/)
- reuse the saved file for future requests but only if the file has not expired (check "pubDate" element inside an XML document and compare with the current date, compare only the date, ignore time) otherwise download again
- parse currency exchange rate document in order to find the needed currency option
- do the calculation by converting the **amount in the transaction currency into the amount in the card currency**, add bank fee to the result (in percent) and round the result to 2 decimal places

The variables that can be passed from index.php into view.php, are:

- $result - empty string, "OK", "ERROR", shown on screen if non-empty
- $result_message - a string to be displayed to the user - either error message or success explanation
- $date - a date when the applied currency exchange rate was valid ("pubDate" of the rates file)

### Additional information

Currency exchange rates for the particular currency must be obtained from the URL http://www.floatrates.com/daily/<currency>.xml where <currency> must be substituted with the corresponding currency.

For downloading the currency rates, you can use the file_get_contents function in PHP (if this does not work, check the "allow_url_fopen" switch in php.ini file).

The simplest XML data extractor is SimpleXML library, available in standard PHP bundle. However, you might need to know some XPath (see here: http://msdn.microsoft.com/en-us/library/ms256086.aspx).

**Submission**: you must upload your index.php file to the assignment at estudijas.lu.lv

**Example**

Suppose a user wants to make a purchase and pay by his/her credit card. The purchase price (transaction currency) is 100 Eur. The user's card is in U.S. Dollars. So 100 Euro must be converted into U.S. Dollars to get the amount withdrawn from the credit card. Suppose, bank fee for currency exchange is 1.9%. To make the conversion, your application must

1) check whether all data are entered correctly;
2) check whether a file with the name USD.xml or EUR.xml and the "pubDate" element equal to the current date is present in the folder xml/ (otherwise, the application must download the XML file from the URL http://www.floatrates.com/daily/USD.xml or http://www.floatrates.com/daily/EUR.xml, save the downloaded file in the folder xml/ and use it for conversion);
3) find the required currency exchange rate in the file and perform conversion.

On 25.02.2019 the exchange rate of USD to EUR was 0.88139005.
100 Eur correspond to 113.457146 U.S. Dollars + the bank fee, which is 113.457146 x 1.9% = 2.155685774.
So the result rounded to 2 decimal places is 115.61 U.S. Dollars.