

## Web Technologies II

### Homework 1 Exercise

Create a weather forecasting website using the given code mock-up. The website must show the weather for the selected city on the entered date and time. Weather forecast information has to be loaded from the URL.

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

- main logic (accessing forecast file, data processing, preparation of output data) should be carried out in index.php
- view.php is loaded as the last instruction of index.php
- presentation 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, show weather forecast **only if both form fields are filled and data corresponds to the expected type** (the date and time contain a valid date and time (without any letters, not empty, month in the range 1-12, day in the range 1-31, hours in the range 0-23, minutes in the range 0-59, date not in the past), **the selected city is present in \$cities array**);
- download the weather forecast file that corresponds to the selected city from the remote server on the first request if no files that correspond to the selected city are present locally (**don't forget that the service may be unavailable**, prepare a specific message for this case!)
- after initial download, save the weather forecast file in the xml/ directory under the name <city>.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 "lastupdate" element inside an XML document and compare with the current date, compare only the date, ignore time) otherwise download again
- parse weather forecast document in order to find the needed date and time that is closest to the one entered by the user
- assign value to the variables defined in index.php file (result, error\_message, date, city, forecast).

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

- \$result - empty string, "OK", "ERROR"
- \$error\_message - a error message to be displayed to the user
- \$date - a date when the weather forecast was valid ("lastupdate" of the weather forecast file)
- \$city - city name selected by the user
- \$forecast must contain an associative array with temperature, precipitation and wind information in the format that is shown in the screenshot.png file

### Additional information

Weather forecast for the particular city must be obtained from the URL [https://www.yr.no/place/<city\\_string>/forecast.xml](https://www.yr.no/place/<city_string>/forecast.xml) where <city\_string> must be substituted with the option value from the select element in html, for instance, <https://www.yr.no/place/Latvia/Jurmala~/J%C5%ABrmala/forecast.xml>

For downloading the weather forecast file, 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 [studijas.lu.lv](http://studijas.lu.lv)