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Tutorial: About Lightweight Code Generation

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Exercise II

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1. Install XAMPP (see documentation on https://www.smiffy.de/icwe-2022 and take a look in the readme.txt file of the zipfile you download next).

2. Download the Zipfile from https://www.smiffy.de/icwe-2022/exercise3.zip and expand it in an empty directory.

3. Open command window (press <win>, type cmd), change to the directory and execute the following command:

   ```
   php exercise-3.php exercise_3.model show-model.tpl
   ```

4. Take a look into the php-files `statechart-example.php` to understand how the *Statechart* class is used. Execute the program. The output is generated by the *__toString()*-method of the class.

5. Your job is the implementation of the static method `importModel($file)` in class *Statechart* (file `statechart-model.php`). The method gets a filename as parameter and must read the content of this file (the model description) and transforms this information into the internal representation of the generator. As result, the method returns a *Statechart* instance, representing the states and transitions of the input model file. If you have successfully implemented the method the result of the run should look like in Appendix A.

   The main task is to find the regular expressions that match the model description in file `exercise_3.model`. Take a look in the code of the first exercise and slide 28 of the slideset to see how this can be coded in PHP.

6. If you have still energy and are hungry to generate more code:
   a. Write another template file that generates the code from slide 56 (method `transition($event)`) of the slideset.
   b. Write a small test-program, that uses the helper method `Statechart::getRandomEvent($actual_state)` to get valid events for the actual state.

Appendix A (Screenshot):