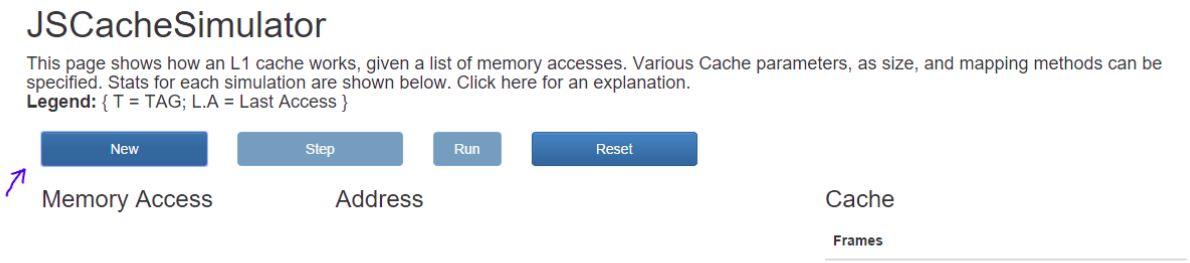
JSCacheSimulator

JSCacheSimulator shows how a processor cache works, how addresses are mapped into cache positions and blocks are replaced, according to various parameters that can be set up for each simulation.

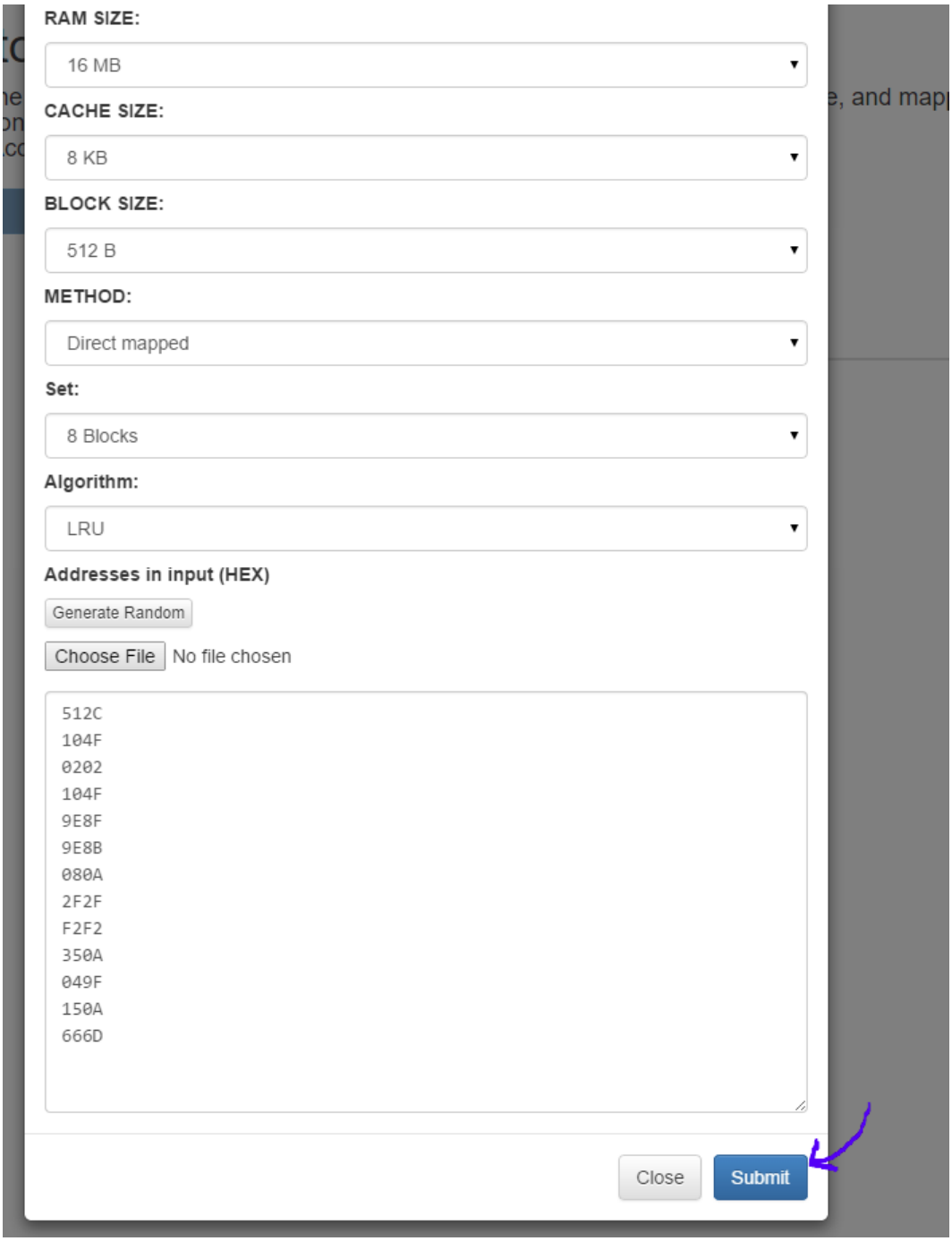
How can I use it?

The simulator was written in HTML5, using JQuery and Bootstrap libraries. To use it, open the file "index.html" (index.html) with a recent browser.

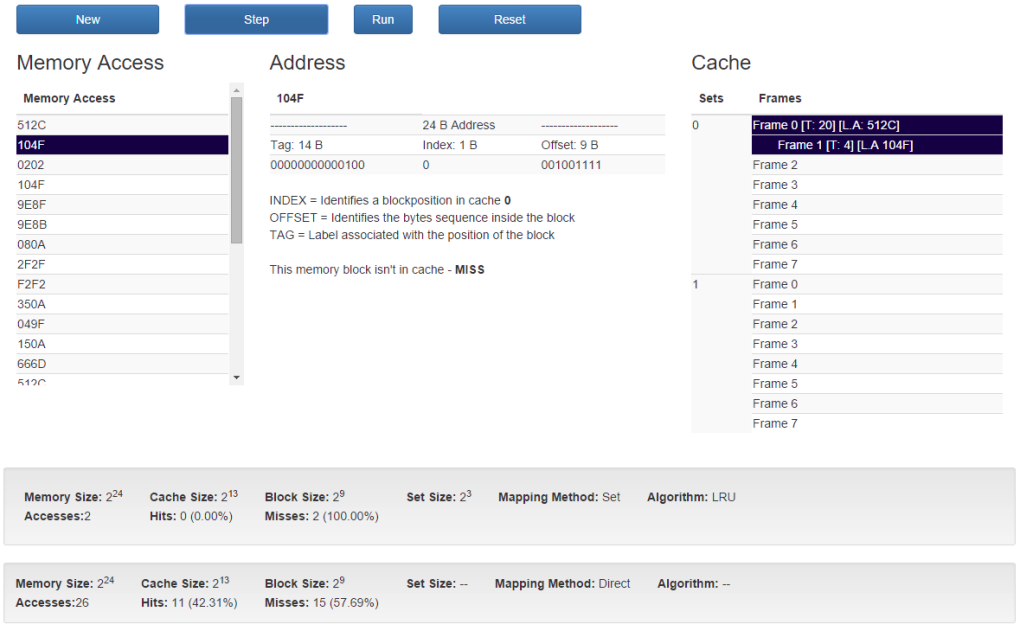
How does it work?



Press "New" to open the new simulation dialog. In this dialog the parameters Cache Size, Block Size, Set Size, Mapping Mode, and Replacment Mode can be set. Additionaly, the user is asked to insert a list of memory operations. The list can be also be imported from a txt file or randomly generated by the simulator, which will try to mimic the typical operations in a generic program. Pressing the "Submit" button, the page is updated to show the simulation interface.



The simulation interface shows the list of operations on the left, and the cache layout on the right.
The "Step" button executes a single memory operation, displaying details about the operation in the central area and updating the operation list and the cache layout. After each step, simulation statistics, displayed in the bottom area of the screen, are updated. The "Run" button executes all the remaining operations at once and updates the statistics (while not updating the cache layout).
A new simulation can be launched with "New". The statistics from previous simulations are kept to allow comparing the performance of various setups.



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