Multitier architectures and the Web

My implementation consists of a Node.JS backend and a single-page JavaScript app. I'm not part of a group, I made the project alone. I used separate forms for the basic calculator and for the plot.

I used nodejs-plotter (uses gnuplot) for generating the serverside plot. The clientside plot is implemented by simply drawing on a canvas. For approximating the datapoints for sin(x) plot, I used Bhaskara I's sine approximation formula from:
https://en.wikipedia.org/wiki/Bhaskara_I%27s_sine_approximation_formula

There are still couple of optimizations that could be made, but I felt that they wouldn't fit the scope of this exercise, so they have not been implemented:

- The cache implementation could be improved by using an object instead of an array when doing the cache lookups. This would make them O(1) operations instead of O(n).
- Http request sequences are currently synchronous. These could be replaced with asynchronous requests to avoid blocking the main thread.

The source code can also be found from GitHub: https://github.com/jametsi/DSP-EX3
The steps 1-3 are in their own branches, so they can be tested separately. The master branch is the final version of the application. Deployed version of the app can be accessed via:
http://temp.plop.fi:8080