

For the solution to the final exam questions used in this assignment visit http://www.ece.lsu.edu/ee4720/2015/fe_sol.pdf

Problem 1: Problem 2b from the 2015 Final Exam asks about our usual FP MIPS pipeline.

An Inkscape SVG version of the FP pipeline can be found at http://www.ece.lsu.edu/ee4720/2016/mpipei_fp.svg.

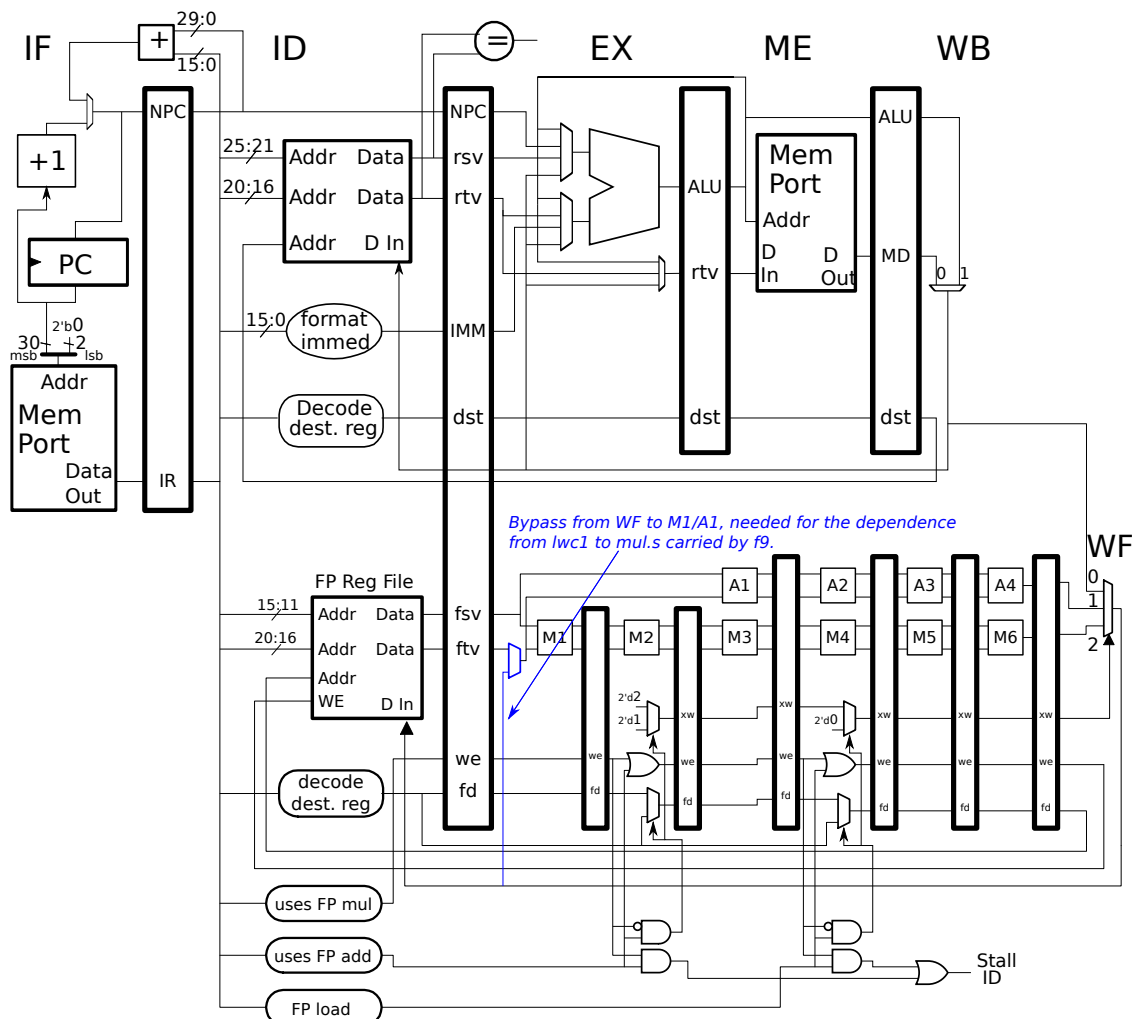
(a) Solve Spring 2015 Final Exam problem 2b.

See the posted solution at the link above.

(b) Add bypass paths to the implementation from problem 2b that were omitted but are needed in the execution of the code sample.

Note: The original assignment asked for bypasses needed so that the code would execute without a stall. That is obviously impossible since with zero stalls the multiply would have to start before the add finished.

The solution appears below in blue. Only one bypass connection is needed, for the value of f9 from the `lwc1` to the `mul.s`. The value of f1 needed by `mul.s` will be read from the register file during the stall.



Problem 2: Solve Problem 2c from the 2015 Final Exam, which asks about our usual superscalar pipeline.

An Inkscape SVG version of the ordinary 2-way superscalar MIPS pipeline used in 2c can be found at <http://www.ece.lsu.edu/ee4720/2016/mpipei3ss.svg>.

See the posted solution at the link above.

Problem 3: Solve Problem 1 from the 2015 Final Exam, which asks about a modified version of our two-way superscalar MIPS implementation.

An Inkscape SVG version of the fused-add 2-way superscalar MIPS pipeline used in 2c can be found at <http://www.ece.lsu.edu/ee4720/2015/fess.svg>.

See the posted solution at the link above. Perhaps you are wondering why I didn't just put the link right here. Because the link is to the entire exam solution, and so the same link would be repeated three times which on balance might be a tiny bit more irritating than having to find the link near the top of this page.