Grading Rubric for Homework #4

Submission instructions may be found on the first page of the homework. As usual, submissions that do not follow the instructions will receive a 10% penalty, and usage of unpermitted components will be interpreted as not being present. We recommend that you make sure you can fetch and decode instructions before implementing instructions and control; submissions that do not run even if they have significant work toward instruction and control implementation will be graded as non-functional. A submission that runs but does not implement all instructions will receive a much higher score than a submission that does not run but implements more instructions.

If you know your processor is not fully correct/implemented, include the instructions you have tested and believe to work in your README, along with instructions that do not work and why they do not work if you know.

Total points: 100

Instructions: 5 points/instruction * 15 instructions

5: Instruction is implemented fully and correctly

3: Minor mistake (e.g., works most of the time, unhandled edge case)

2: Major mistake (works rarely or never, unhandled control)

.5: Attempt at implementation

0: Instruction absent

Decoder: 10 points

10: Provides mechanism for generating control signals (correctness graded for each instruction) and correctly extracts rS, rT, etc. from instruction

7: Issues with control generation or instruction components incorrectly extracted

0: Very broken or absent; see notes on non-functional submissions

PC and fetch: 10 points

10: PC maintained correctly in general case (non-jumps) and instructions fetched correctly from memory

7: Minor error with maintaining PC or fetching instructions

0: Very broken or absent; see notes on non-functional submissions

ALU design: 5 points

5: Outputs correct result based on provided instruction

3: Issues with outputting correct result

0: Never outputs correct result or absent

Note this is separate from the points for instruction implementation

Regarding non-functional submissions:

25 points: Baseline for a submission that shows significant work toward implementing instructions and control, but does not run due to circuit and wiring errors.

+45 points max: On top of the baseline, a submission may receive up to an additional 45 points for instructions and components that are implemented correctly. These points will be assigned at the discretion of the grader.