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EECS 361 Computer Architecture

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Quiz 6

1) What are the three types of hazards in a pipeline processor?

structural
data
control

2) What is the one common solution to all types of hazards?

Stall

3) What is the number of stalls the hardware has to perform in our pipeline design for data hazards if no forwarding is implemented?

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4) What is the typical number of stalls the hardware has to perform for data hazards if the processor implements forwarding? What is the maximum number of stalls in this case?

The typical number is zero. In case of an instruction that is following a load operation reads the destination register of the load, 1 cycle stall is needed, which is the maximum number.