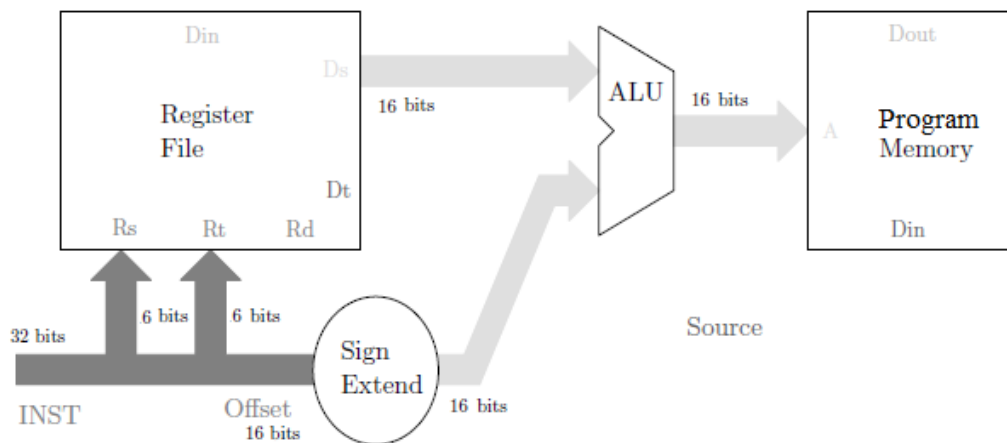


ECE 30

Introduction to Computer Engineering

Example Problems, Set #7 Spring 2014

1. The diagram below shows the datapath for a single-cycle implementation of the lw instruction. Find the errors and the missing items/connections.



Incorrect and Incomplete Datapath for lw

2. Amongst the six special registers in the datapath of a *multi-cycle* implementation (PC, IR, MDR, A, B, and ALUout), how are the **PC** and **IR** registers different from the others with respect to automatic update of their values at every rising clock edge?