



# Final Project

COEN 122



# Grading

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- Lab 1-4 (10% each) 40%
- Final Project 60%



# Office Hours

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- TA office hours:
  - Tianxin Zhou (Wednesday Lab): Friday 10am to 12pm
  - Brandon Quant (Tuesday Lab): Tuesday 10am to 12pm
- TA emails:
  - [tzhou@scu.edu](mailto:tzhou@scu.edu)
  - [bquant@scu.edu](mailto:bquant@scu.edu)



# Late Policy

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- Late submissions submitted within 24 hours after the deadline receive 50% credit. After 24 hours, no credit is given.



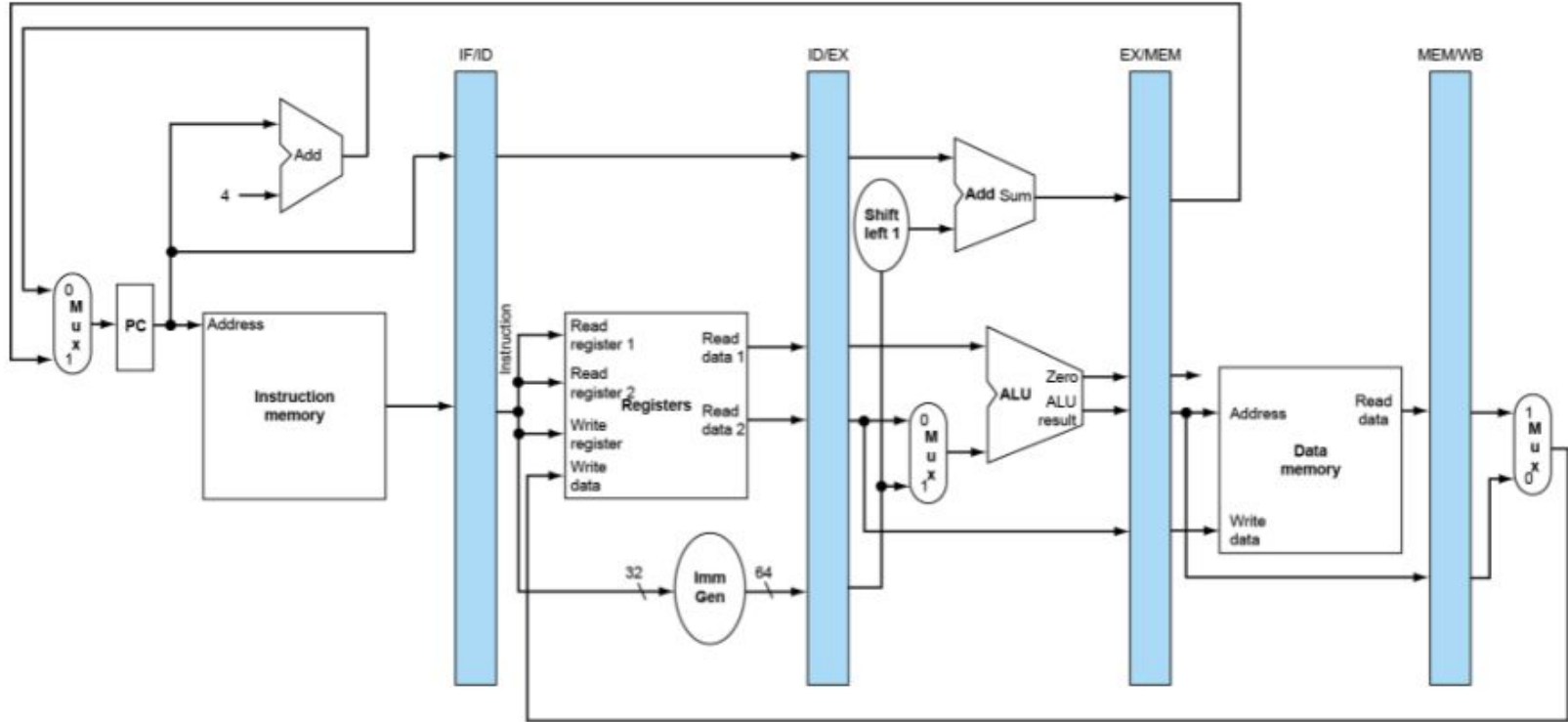
# Demo

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- Labs submitted with no demo will receive no credit. Please demo to me before the lab is due.
- You can demo in either TAs Office Hours

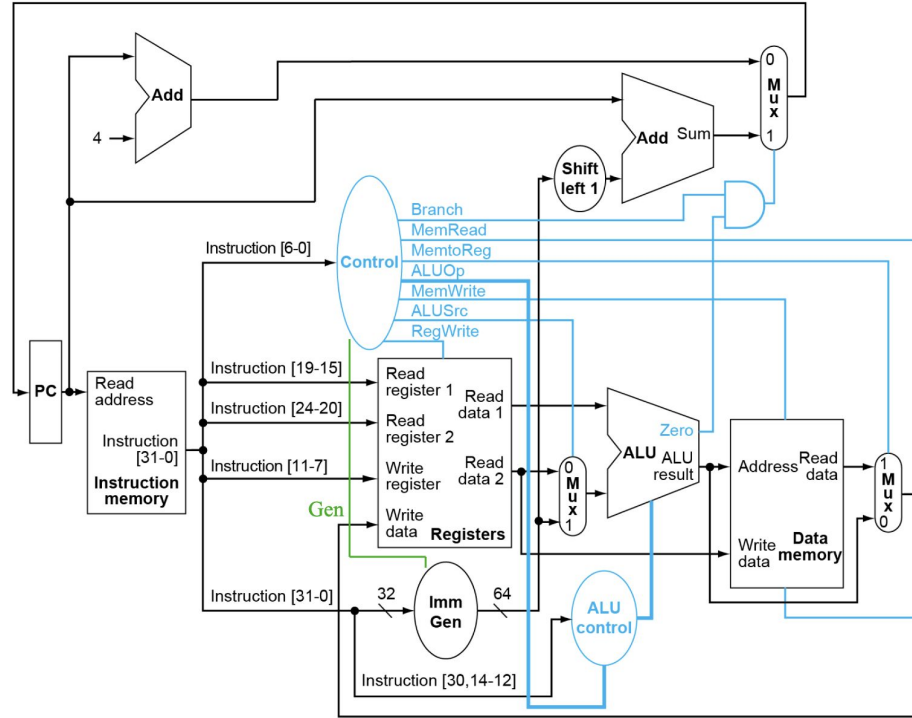


# Simple Datapath for Single Cycle





# Simple Datapath with Control Unit





# Approach

- Build remaining modules for CPU
  - Program Counter
  - Sign Extender
  - Control Block/Unit
  - Logic Gates
  - Modify Buffers to Include Control Unit
- Create CPU testbench file to begin assembling datapath





# Approach

- Build IF (instruction fetch) stage and make sure it looks ok in waveforms (no Z's and X's)
- Build ID (instruction decode) stage
- Build EX (execute) stage
- Build WB (write back) stage
- Convert demo program to binary and load into instruction memory
- Run and Debug
- Demo!