CS 631-01 Processor Design Memory & Codegen

Data Memory

Inst name display

Code setup

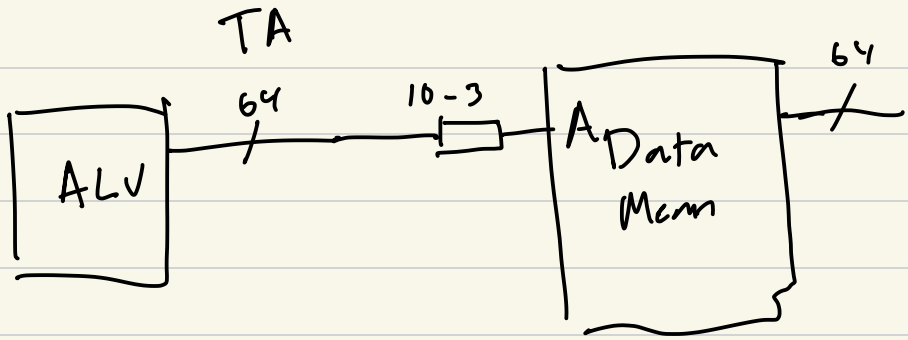
Code Gen

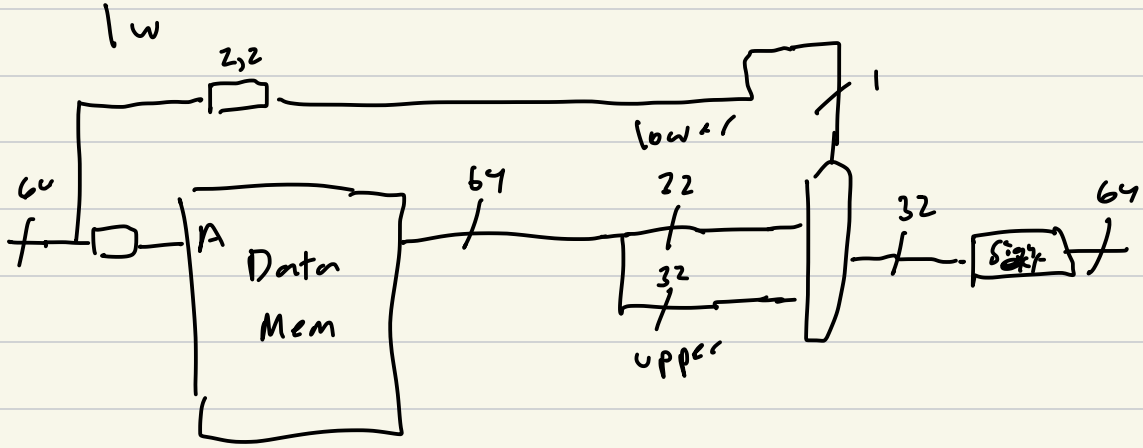
Data Memory

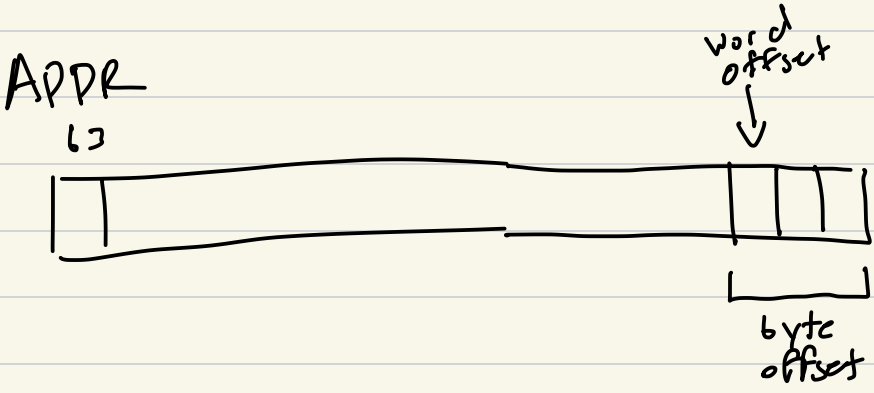
ld

lb

lw

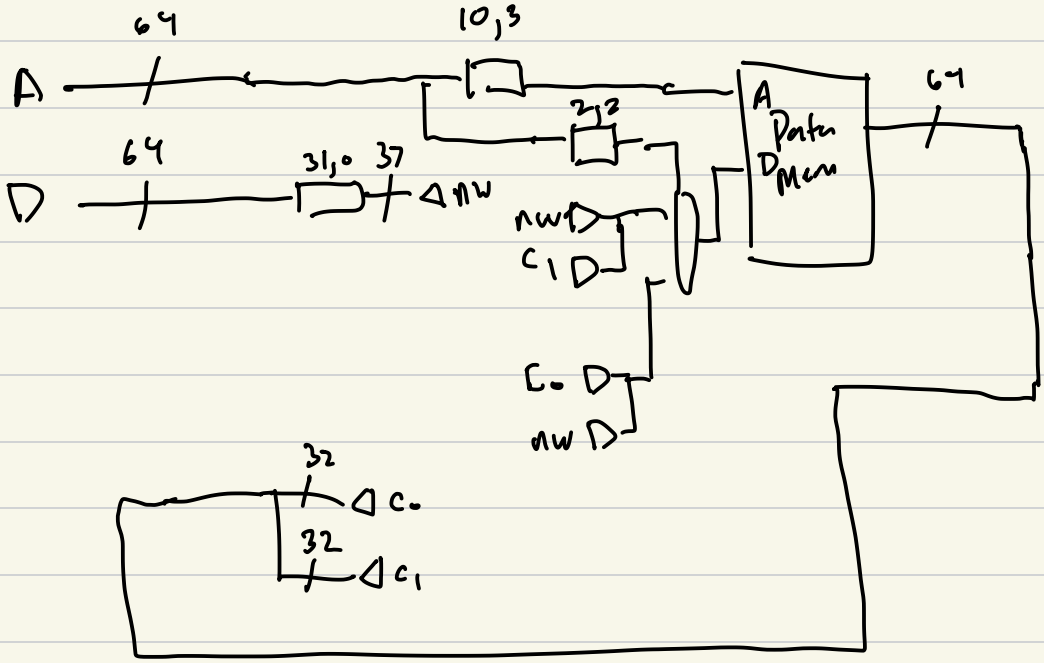

TA
64
10-3
64
ALU
A
Data
Mem


lw
2,2
1
lower
64
22
32
64
A
Data
Mem
32
upper

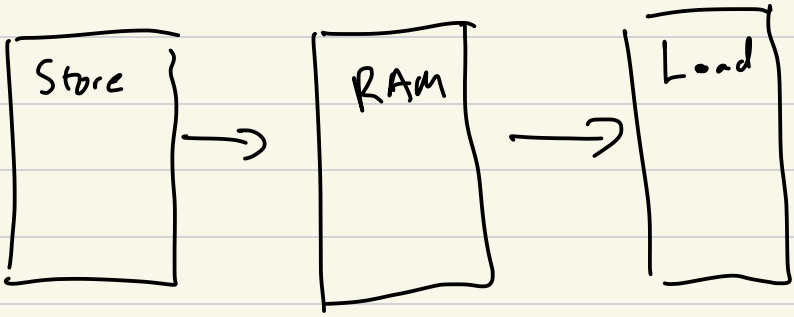

APPR
63
word
offset
byte
offset

W7
W2
W1
W0
PW1
PW0

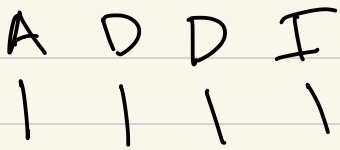
SW

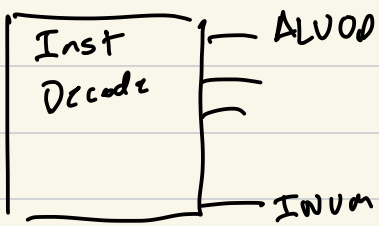


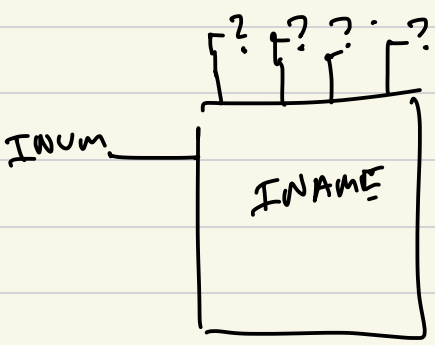
Read Modify Write RMW



Instruction Name Display







Project 05 Tests

8 addr bits

$2^8 = 256$ DWs

$2^8 * 2^3 = 2^{11} = 2048$

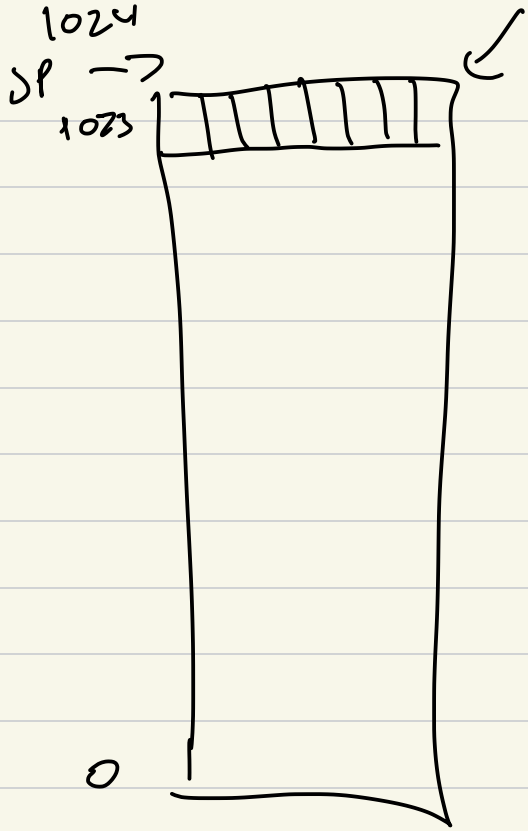
7 addr

$2^7 = 128$

$2^7 \times 2^3 = 2^{10} = 1024$

Data Mem

Stack



Code Gen

preamble

Main:

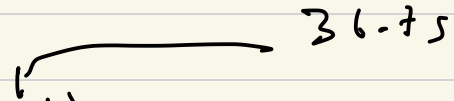
\: sp, 1024

→ mv a0, io_a0

mv a1, io_a1

lbu

lbu a0, (rs1)



x0 → io_a0

x1 → io_a1