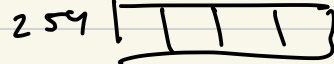
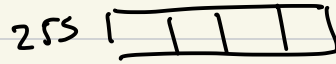
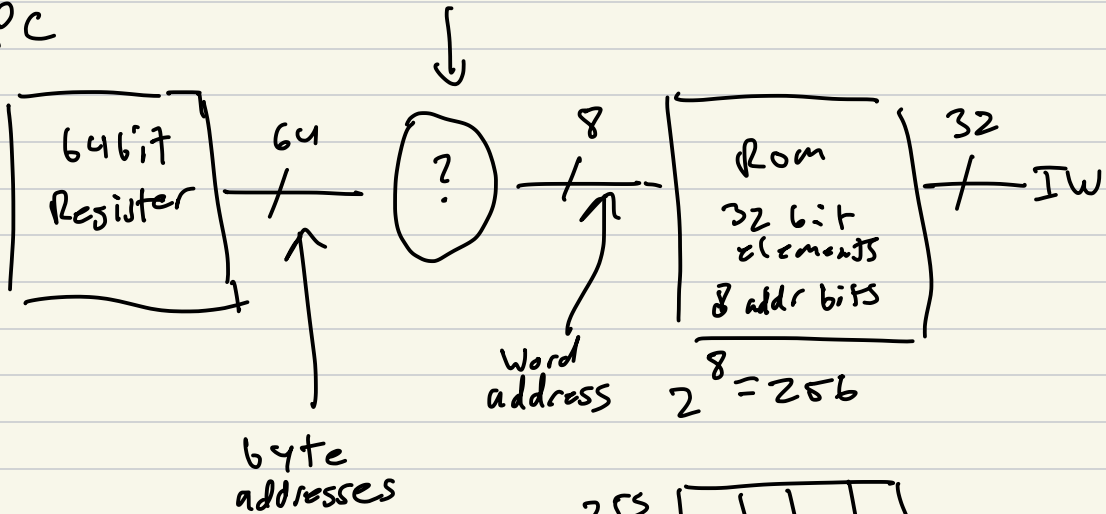
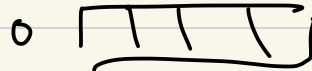
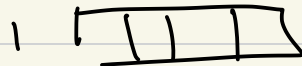


# Lab 09 testing

PC



⋮

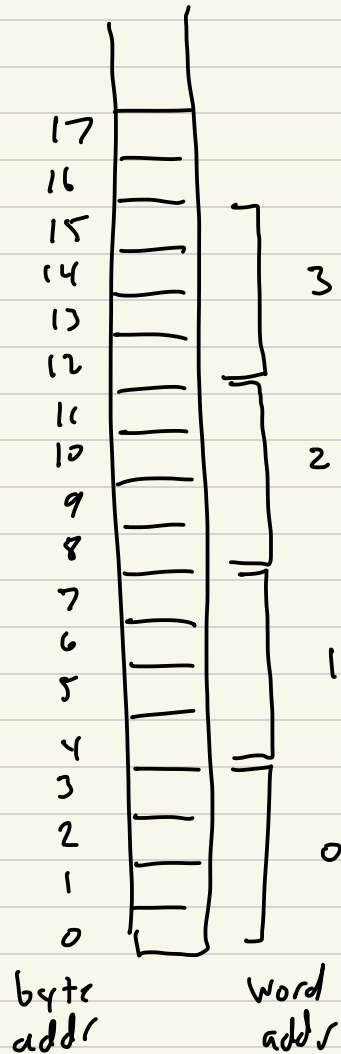
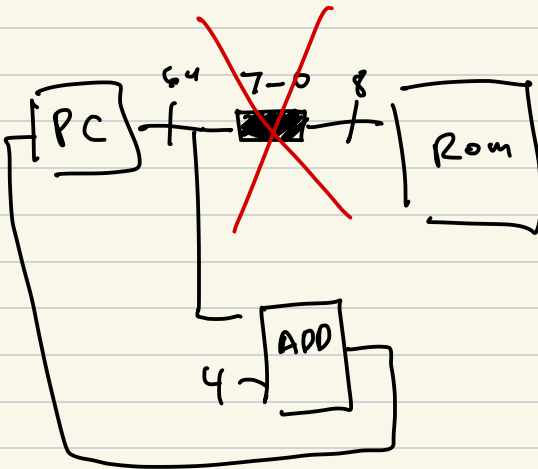


# Memory

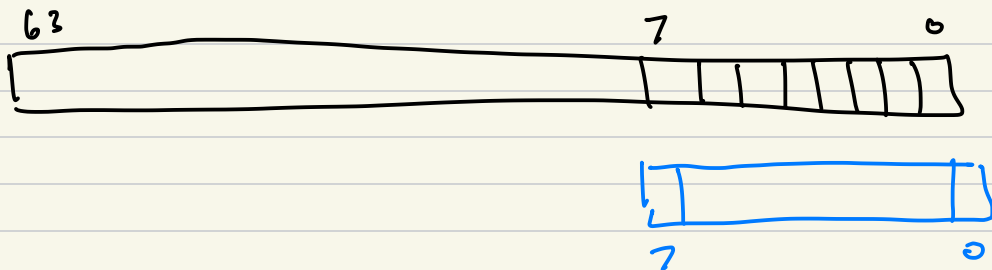
addr\_byte

$$\text{addr\_word} = \text{addr\_byte} / 4$$

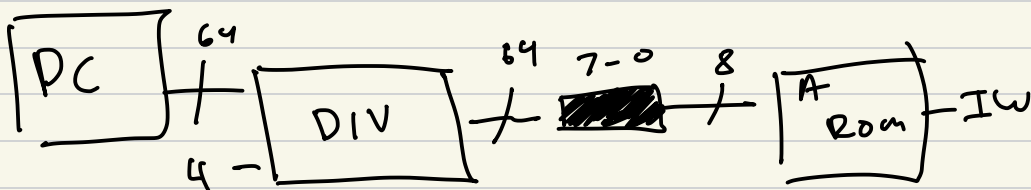
$$\text{addr\_word} = \text{addr\_byte} \gg 2$$



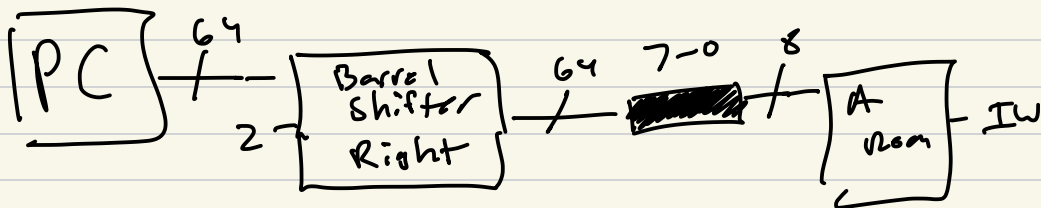
64 bit address



(1)

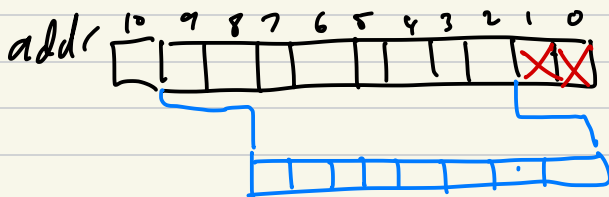
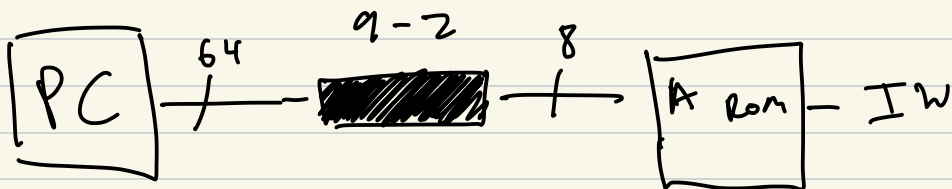


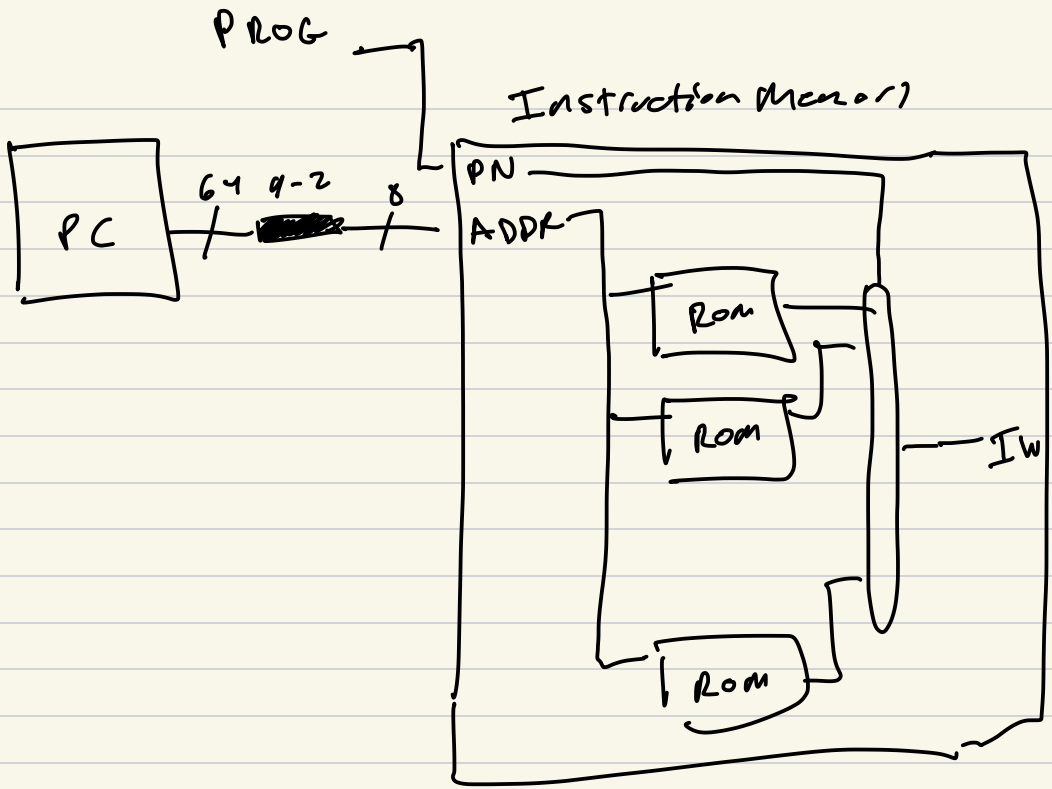
(2)



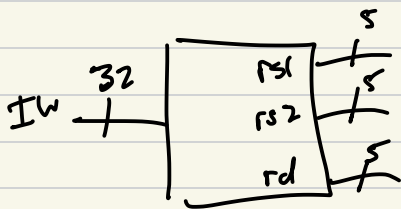
\*

(3)

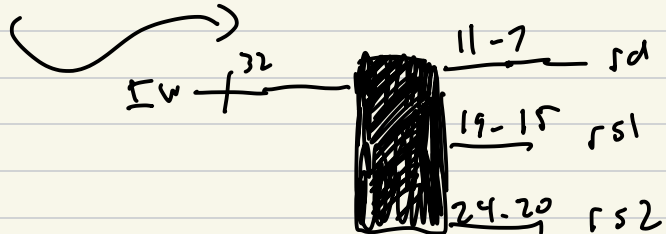




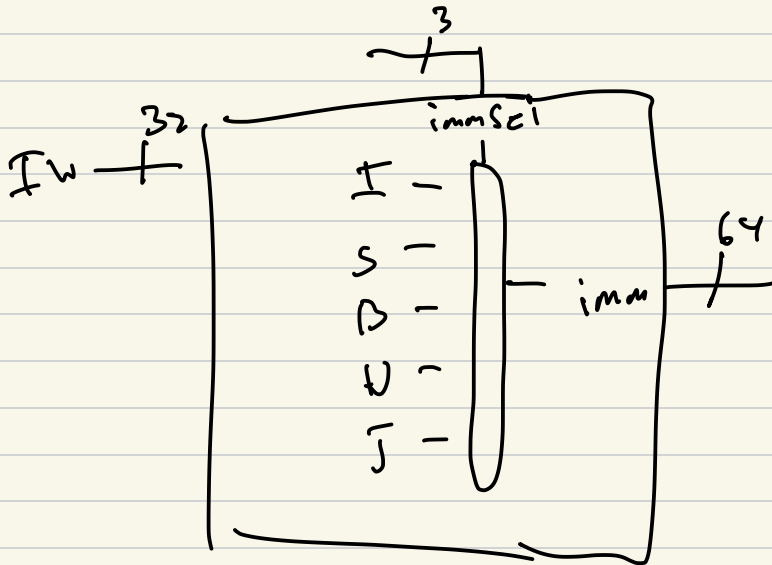
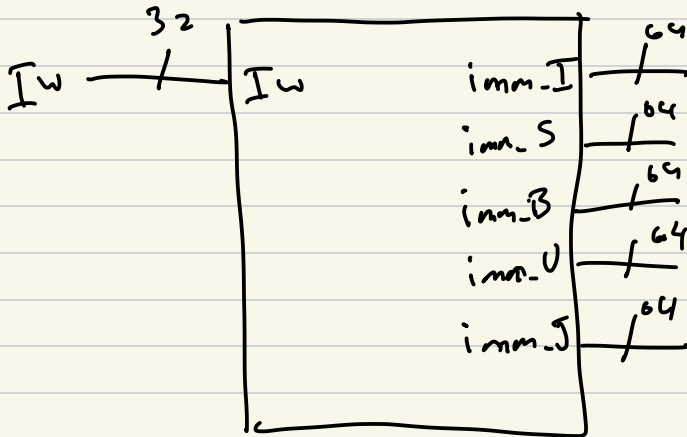
## Reg Decoder



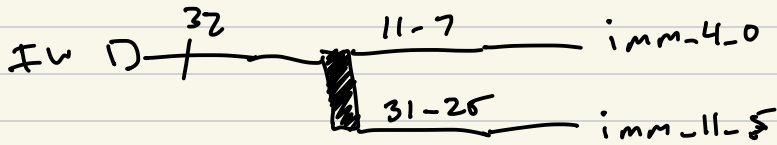
add to, r1, r2  
WR



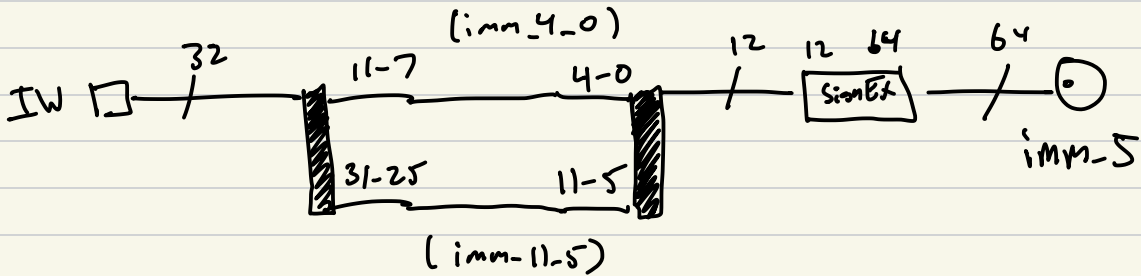
# Immediate (Imm) Decoder



# S-Type Immediate



Goal: Construct a 64 bit signed value



# How to implement the sign extender

