

5.38

DRAM

Dynamic random-access memory (DRAM) is a type of storage that is widely used as the main memory for a *computer* system. Dynamic random-access memory (DRAM) is a type of random-access memory that stores each bit of data in a separate capacitor within an integrated circuit. The capacitor can be either charged or discharged; these two states are taken to represent the two values of a bit, conventionally called 0 and 1. A DRAM storage cell is dynamic in that it needs to be refreshed or given a new [electronic charge](#) every few [milliseconds](#) to compensate for charge leaks from the capacitor.

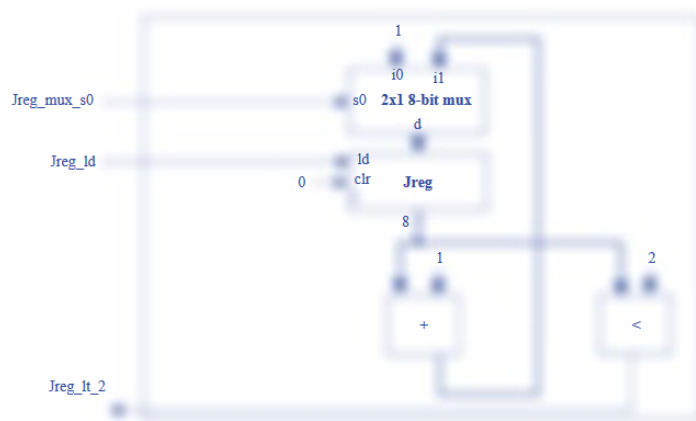
SRAM

SRAM (static RAM) is random access memory (RAM) that retains data bits in its memory as long as power is being supplied. Unlike dynamic RAM (DRAM), which stores bits in cells consisting of a capacitor and a transistor, SRAM does not have to be periodically refreshed.

5.9 :

<https://www.coursehero.com/file/p4tc6tp/56-Create-a-high-level-state-machine-for-a-simple-data-encryption/decryption/>

a) Create a datapath.

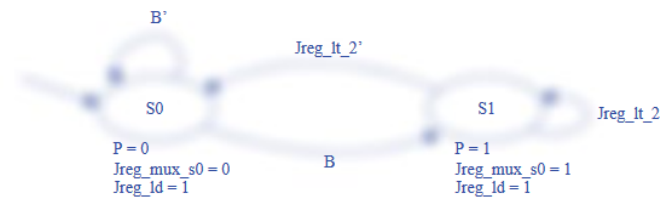


b) Connect the datapath to a controller.



c) Derive the controller's FSM.

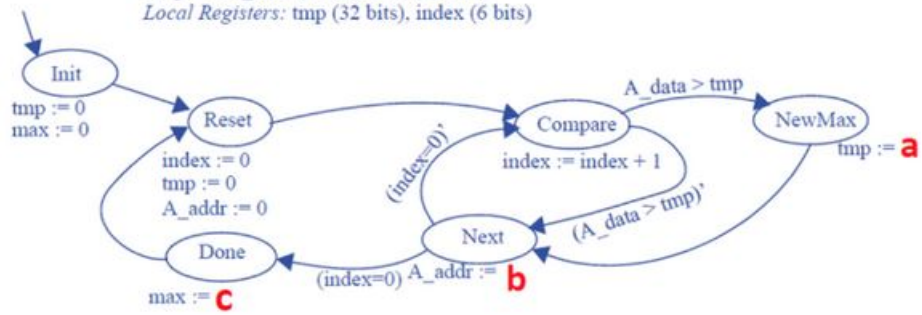
Inputs: B, Jreg_lt_2
Outputs: P, Jreg_mux_s0, Jreg_ld



5.18

Problems are case sensitive!

Inputs: A_data (32 bits)
Outputs: A_addr (6 bits), max (32 bits)
Local Registers: tmp (32 bits), index (6 bits)



A= index
b= A_addr+1
c=A_data