EE 231L Lab 4

Prelab Part 2

The table below shows the output of the control unit for the first four instructions of the instruction set. Complete the table for the entire set of instructions

Here are a few hints for finishing the table:

- The instructions SUBA addr, ANDA addr, ORAA addr, and CMPA addr are the same as LDAA addr, except for the ALU_CTL, Z_L and C_L lines in State C3.

- The instructions JMP addr is similar to LDAA addr, except that in State C3, you need to load the data out of the memory into the PC register rather than into the ACCA register. Also, C and Z do not change.

Instructions

Inst		ALU_CTL	MEM_SEL	INST_L	PC_I	PC_L	ACCA_L	MAR_L	C_L	Z_L	X_I	X_L	READ	STORE
LDAA addr	C1	X	PC	0	0	1	1	1	1	1	1	1	0	1
	C2	X	PC	1	0	1	1	0	1	1	1	1	0	1
	C3	LOAD	MAR	1	1	1	0	1	1	0	1	1	0	1
LDAA #num	C1	X	PC	0	0	1	1	1	1	1	1	1	0	1
	C2	LOAD	PC	1	0	1	0	1	1	0	1	1	0	1
LDAA 0,X	C1	X	PC	0	0	1	1	1	1	1	1	1	0	1
	C2	LOAD	X_SEL	1	1	1	0	1	1	0	1	1	0	1
STAA addr	C1	X	PC	0	0	1	1	1	1	1	1	1	0	1
	C2	X	PC	1	0	1	1	0	1	1	1	1	0	1
	C3	LOAD	MAR	1	1	1	1	1	1	0	1	1	1	0

Page 1