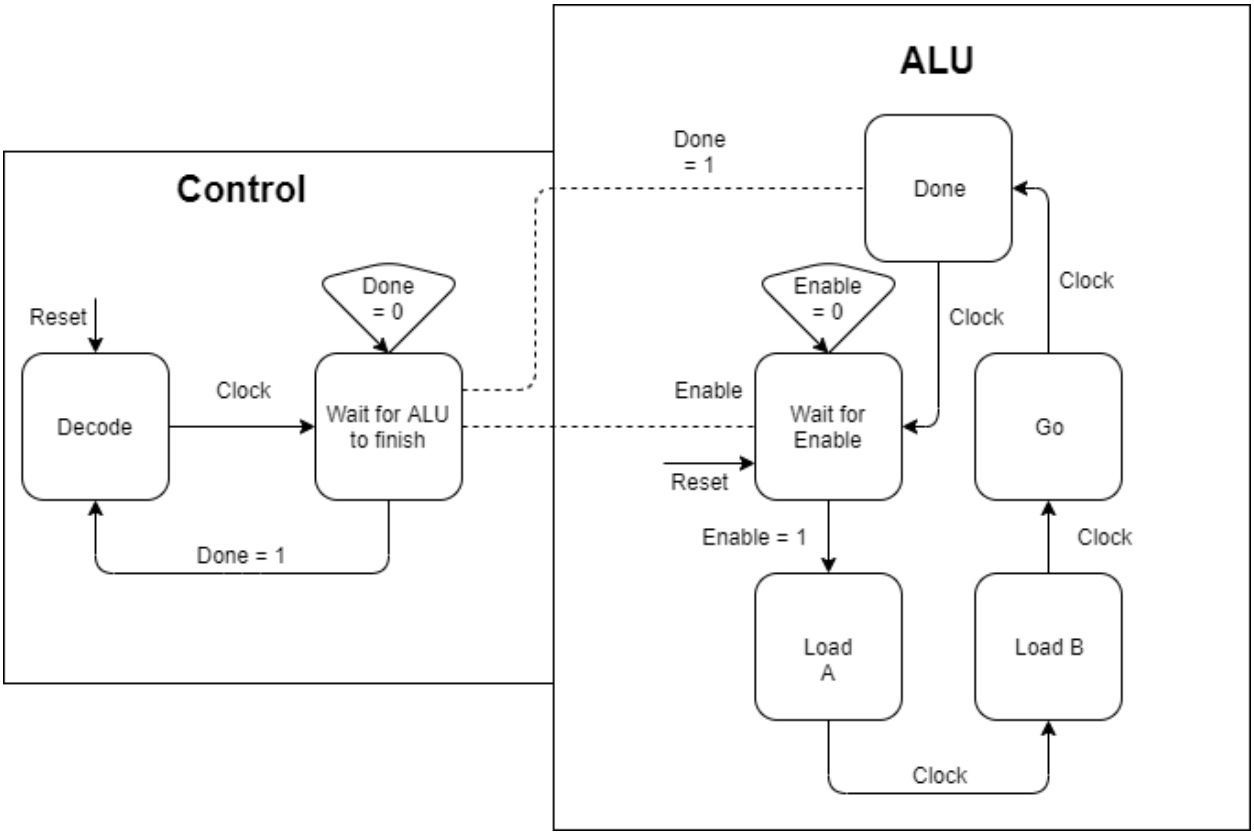
James Starks
12/13/19
Jes198

Block Diagram



All code is commented

Instruction Set Format

Acc	B								A								Opcode			
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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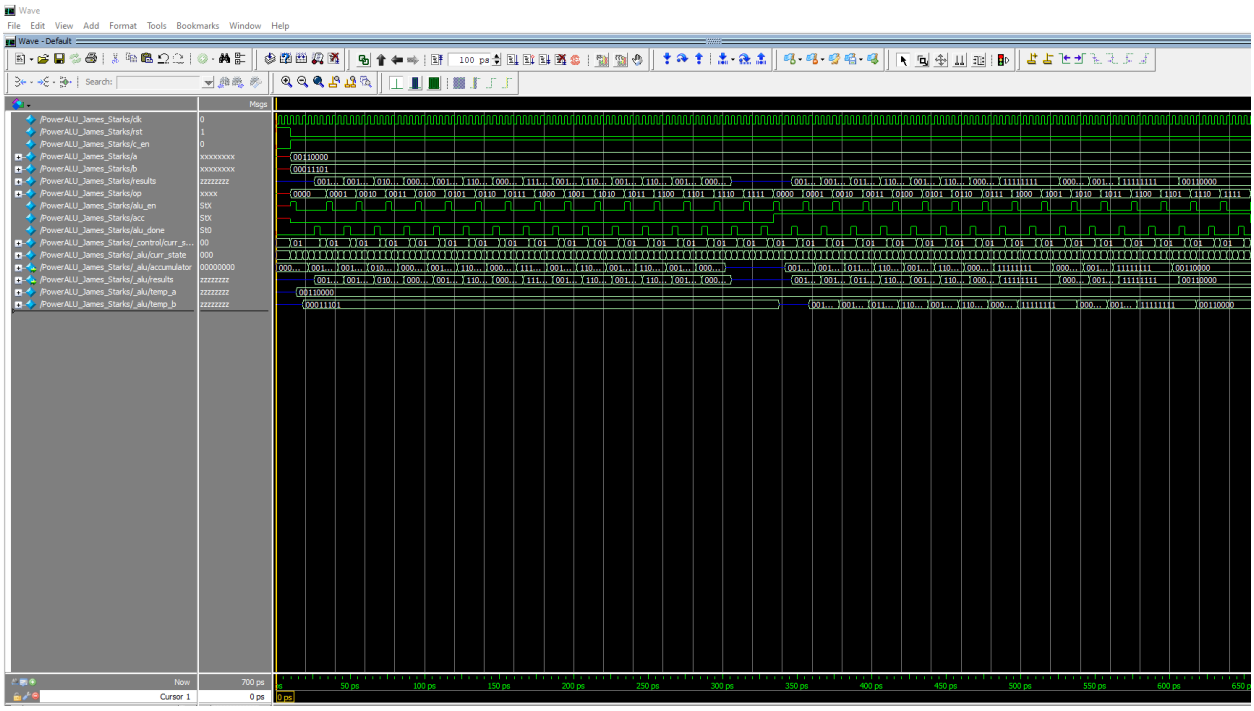
Waveforms



I used ModelSim for this project.

Check Table

Opcode	A	B	ACC	Accumulator	Results	Expected
Transfer	00110000	00011101	0	zzzzzzzz	00110000	00110000
Increment	00110000	00011101	0	00110000	00110001	00110001
Add	00110000	00011101	0	00110001	01001101	01001101
Sub	00110000	00011101	0	01001101	00010011	00010011
Decrement	00110000	00011101	0	00010011	00101111	00101111
1's Complement	00110000	00011101	0	00101111	11001111	11001111
A AND B	00110000	00011101	0	11001111	00010000	00010000
A NAND B	00110000	00011101	0	00010000	11101111	11101111
A OR B	00110000	00011101	0	11101111	111101	00111101
A NOR B	00110000	00011101	0	00111101	11000010	11000010
A XOR B	00110000	00011101	0	11000010	101101	00101101
A XNOR B	00110000	00011101	0	00101101	11010010	11010010
GT	00110000	00011101	0	11010010	00110000	00110000
LT	00110000	00011101	0	00110000	00011101	00011101
EQ	00110000	00011101	0	00011101	zzzzzzzz	zzzzzzzz
NOP	00110000	00011101	0	zzzzzzzz	zzzzzzzz	zzzzzzzz
Transfer	00110000	00011101	1	zzzzzzzz	00110000	00110000

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Increment	00110000	00011101	1	00110000	00110001	00110001
Add	00110000	00011101	1	00110001	00110001	00110001
Sub	00110000	00011101	1	01100001	01100001	01100001
Decrement	00110000	00011101	1	11001111	11001111	11001111
1's Complement	00110000	00011101	1	00101111	00101111	00101111
A AND B	00110000	00011101	1	11001111	11001111	11001111
A NAND B	00110000	00011101	1	00000000	00000000	00000000
A OR B	00110000	00011101	1	11111111	11111111	11111111
A NOR B	00110000	00011101	1	11111111	11111111	11111111
A XOR B	00110000	00011101	1	00000000	00000000	00000000
A XNOR B	00110000	00011101	1	00110000	00110000	00110000
GT	00110000	00011101	1	11111111	11111111	11111111
LT	00110000	00011101	1	11111111	11111111	11111111
EQ	00110000	00011101	1	00110000	00110000	00110000
NOP	00110000	00011101	1	00110000	00110000	00110000

Transcript.txt is included, which is all printout of all the monitor statements.