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Instruction Types

R-Type Instruction Table

Completed	Operation	Mnemonic	Operands	OP Code	Rdest	OP Code Ext	Rsrc
☐		ADD	Rsrc, Rdest	0000	Rdest	0101	Rsrc
☐		SUB	Rsrc, Rdest	0000	Rdest	1001	Rsrc
☐		CMP	Rsrc, Rdest	0000	Rdest	1011	Rsrc
☐		AND	Rsrc, Rdest	0000	Rdest	0001	Rsrc
☐		OR	Rsrc, Rdest	0000	Rdest	0010	Rsrc
☐		XOR	Rsrc, Rdest	0000	Rdest	0011	Rsrc
☐		MOV	Rsrc, Rdest	0000	Rdest	1101	Rsrc
☐		LSH	Ramount, Rdest	1000	Rdest	0100	Ramount
☐		LOAD	Rdest, Raddr	0100	Rdest	0000	Raddr
☐		STOR	Rsrc, Raddr	0100	Rsrc	0100	Raddr
☐		Jcond	Rtarget	0100	cond	1100	Rtarget
☐		JAL	Rlink, Rtarget	0100	Rlink	1000	Rtarget

I-Type Instruction Table

Completed	Operation	Mnemonic	Operands	OP Code	Rdest	Imm
☐		ADDI	Imm, Rdest	0101	Rdest	Imm
☐		SUBI	Imm, Rdest	1001	Rdest	Imm
☐		CMPI	Imm, Rdest	1011	Rdest	Imm
☐		ANDI	Imm, Rdest	0001	Rdest	Imm
☐		ORI	Imm, Rdest	0010	Rdest	Imm
☐		XORI	Imm, Rdest	0011	Rdest	Imm
☐		MOVI	Imm, Rdest	1101	Rdest	Imm
☐		LSHI	Imm, Rdest	1000	Rdest	000s | ImmLo
☐		LUI	Imm, Rdest	1111	Rdest	Imm
☐		Bcond	disp	1100	cond	Disp

Control Points

Make a list of all the control points you have identified so far in your RF/ALU circuit. A control point is a MUX select, or a register enable, or an ALU function code, or any other signal that controls some aspect of your RF/ALU so far that will need to be controlled from your eventual finite state control circuit

Complete?	Task
☐	Create a MUX that is placed on the top input of the ALU to decide if the input should come from an immediate or the register file.
☐	Check and see if a flop is needed to keep track of our PSR
☐	Check and see if a flop is needed to keep track of our PC
☐	We will need a controller object that manages states and state transitions
☐	We will need to make sure the values that come out of our ALU are given to the right places.
☐	
☐	
☐	
☐	