

All save and load instructions were created in the same INUM since they have the same control outputs

INUM	Instruction	Mnemonic	Format	Inputs				Control Outputs									Input Bits				Output Bits				Actual	
				OpCode	func3	func7	func6		RFW	ALUOp	ALUSrcA	ALUSrcB	PCsel	WDSel	B-Op	MR	STR	LD	OpCode	func3	func7	func6	Output Bits	Actual		
0	addi	ADDI	I	0010011	000	xxxxxxx	xxxxxxx	1	000	0	001	0	0	110	0	0	0	0b0010011	0b000	0bxxxxxxx	0bxxxxxxx	0b1000000100110000	0b1000000100110000	0b1000000100110000	0b1000000100110000	
1	add	ADDR	R	0110011	000	0000000	xxxxxxx	1	000	0	000	0	0	110	0	0	0	0b0110011	0b000	0b0000000	0bxxxxxxx	0b1000000000110000	0b1000000000110000	0b1000000000110000	0b1000000000110000	
2	jal	JAL	J	1101111	xxx	xxxxxxx	xxxxxxx	1	000	1	010	1	1	110	0	0	0	0b1101111	0bxxx	0bxxxxxxx	0bxxxxxxx	0b1000101011110000	0b1000101011110000	0b1000101011110000	0b1000101011110000	
3	jalr	JALR	I	1100111	000	xxxxxxx	xxxxxxx	1	000	0	001	1	1	110	0	0	0	0b1100111	0b000	0bxxxxxxx	0bxxxxxxx	0b1000000111110000	0b1000000111110000	0b1000000111110000	0b1000000111110000	
4	sll	SLLI	R	0110011	001	0000000	xxxxxxx	1	011	0	000	0	0	110	0	0	0	0b0110011	0b001	0b0000000	0bxxxxxxx	0b1011000000110000	0b1011000000110000	0b1011000000110000	0b1011000000110000	
5	slli	SLLI	I	0010011	001	xxxxxxx	0000000	1	011	0	001	0	0	110	0	0	0	0b0010011	0b001	0bxxxxxxx	0b0000000	0b1011000100110000	0b1011000100110000	0b1011000100110000	0b1011000100110000	
6	srl	SRLR	R	0110011	101	0000000	xxxxxxx	1	100	0	000	0	0	110	0	0	0	0b0110011	0b101	0b0000000	0bxxxxxxx	0b1100000000110000	0b1100000000110000	0b1100000000110000	0b1100000000110000	
7	srl	SRLI	I	0010011	101	xxxxxxx	0000000	1	100	0	001	0	0	110	0	0	0	0b0010011	0b101	0bxxxxxxx	0b0000000	0b1100000100110000	0b1100000100110000	0b1100000100110000	0b1100000100110000	
8	mul	MUL	R	0110011	000	0000001	xxxxxxx	1	010	0	000	0	0	110	0	0	0	0b0110011	0b000	0b0000001	0bxxxxxxx	0b1010000000110000	0b1010000000110000	0b1010000000110000	0b1010000000110000	
9	beq	BEQ	B	1100011	000	xxxxxxx	xxxxxxx	0	000	1	011	0	1	000	0	0	0	0b1100011	0b000	0bxxxxxxx	0bxxxxxxx	0b0000101101000000	0b0000101101000000	0b0000101101000000	0b0000101101000000	
9	bne	BNE	B	1100011	001	xxxxxxx	xxxxxxx	0	000	1	011	0	1	001	0	0	0	0b1100011	0b001	0bxxxxxxx	0bxxxxxxx	0b0000101101001000	0b0000101101001000	0b0000101101001000	0b0000101101001000	
9	blt	BLT	B	1100011	100	xxxxxxx	xxxxxxx	0	000	1	011	0	1	100	0	0	0	0b1100011	0b100	0bxxxxxxx	0bxxxxxxx	0b0000101101100000	0b0000101101100000	0b0000101101100000	0b0000101101100000	
9	bge	BGE	B	1100011	101	xxxxxxx	xxxxxxx	0	000	1	011	0	1	101	0	0	0	0b1100011	0b101	0bxxxxxxx	0bxxxxxxx	0b0000101101101000	0b0000101101101000	0b0000101101101000	0b0000101101101000	
10	lui	LUI	U	0110111	xxx	xxxxxxx	xxxxxxx	1	101	0	101	0	0	110	0	0	0	0b0110111	0bxxx	0bxxxxxxx	0bxxxxxxx	0b1101010100110000	0b1101010100110000	0b1101010100110000	0b1101010100110000	
11	lb	LB	I	0000011	000	xxxxxxx	xxxxxxx	1	000	0	001	0	0	110	0	1	0	0b0000011	0b000	0bxxxxxxx	0bxxxxxxx	0b1000000100110101	0b1000000100110101	0b1000000100110101	0b1000000100110101	
12	sb	SB	S	0100011	000	xxxxxxx	xxxxxxx	0	000	0	100	0	0	110	0	1	0	0b0100011	0b000	0bxxxxxxx	0bxxxxxxx	0b0000010000110011	0b0000010000110011	0b0000010000110011	0b0000010000110011	
13	lw	LW	I	0000011	010	xxxxxxx	xxxxxxx	1	000	0	001	0	0	110	1	0	1	0b0000011	0b010	0bxxxxxxx	0bxxxxxxx	0b1000000100110101	0b1000000100110101	0b1000000100110101	0b1000000100110101	
14	sw	SW	S	0100011	010	xxxxxxx	xxxxxxx	0	000	0	100	0	0	110	0	1	1	0b0100011	0b010	0bxxxxxxx	0bxxxxxxx	0b0000010000110011	0b0000010000110011	0b0000010000110011	0b0000010000110011	
15	ld	LD	I	0000011	011	xxxxxxx	xxxxxxx	1	000	0	001	0	0	110	1	0	1	0b0000011	0b011	0bxxxxxxx	0bxxxxxxx	0b1000000100110101	0b1000000100110101	0b1000000100110101	0b1000000100110101	
16	sd	SD	S	0100011	011	xxxxxxx	xxxxxxx	0	000	0	100	0	0	110	0	1	1	0b0100011	0b011	0bxxxxxxx	0bxxxxxxx	0b0000010000110011	0b0000010000110011	0b0000010000110011	0b0000010000110011	
17	sub	SUB	R	0110011	000	0100000	xxxxxxx	1	001	0	000	0	0	110	0	0	0	0b0110011	0b000	0b0100000	0bxxxxxxx	0b1001000000110000	0b1001000000110000	0b1001000000110000	0b1001000000110000	
18	and	AND	R	0110011	111	0000000	xxxxxxx	1	110	0	000	0	0	110	0	0	0	0b0110011	0b111	0b0000000	0bxxxxxxx	0b1110000000110000	0b1110000000110000	0b1110000000110000	0b1110000000110000	
19	or	OR	R	0110011	110	0000000	xxxxxxx	1	111	0	000	0	0	110	0	0	0	0b0110011	0b110	0b0000000	0bxxxxxxx	0b1110000000110000	0b1110000000110000	0b1110000000110000	0b1110000000110000	