INUM	Instruct	Mnemonic	Format	Input				Control outputs				BRAOP					Input bits				Output bits	
				opcode	funct3	funct7	funct6	MLD	MST	RFW	ALUop	ALUSrcA	ALUSrcB	PCsel	WDsel	BRA OP	opcode	funct3	funct7	funct6		
0	addi	ADDI	I	0010011	000	xxxxxxx	xxxxxx	0	0	1	000	0	001	00	00	00	0b0010011	0b000	0bxxxxxxx	0bxxxxxx	0b0010000001000000	
1	add	ADD	R	0110011	000	0000000	xxxxxx	0	0	1	000	0	000	00	00	00	0b0110011	0b000	0b0000000	0bxxxxxx	0b0010000000000000	
2	jal	JAL	J	1101111	xxx	xxxxxxx	xxxxxx	0	0	1	000	1	010	01	01	00	0b1101111	0bxxx	0bxxxxxxx	0bxxxxxx	0b0010001010010100	
3	jalr	JALR	I	1100111	000	xxxxxxx	xxxxxx	0	0	1	000	0	001	01	01	00	0b1100111	0b000	0bxxxxxxx	0bxxxxxx	0b0010000001010100	
4	sub	SUB	R	0110011	000	0100000	xxxxxx	0	0	1	001	0	000	01	00	00	0b0110011	0b000	0b0100000	0bxxxxxx	0b0010010000010000	
5	mul	MUL	R	0110011	000	0000001	xxxxxx	0	0	1	011	0	000	00	00	00	0b0110011	0b000	0b0000001	0bxxxxxx	0b0010110000000000	
6	sll	SLL	R	0110011	001	0000000	xxxxxx	0	0	1	100	0	000	00	00	00	0	0b001	0b0000000	0bxxxxxx	0b0011000000000000	0
7	slli	SLLI	I	0010011	001	xxxxxxx	xxxxxx	0	0	1	100	0	001	00	00	00	0b0010011	0b001	0b0000000	0bxxxxxx	0b0011000001000000	
8	srl	SRL	R	0110011	101	0000000	xxxxxx	0	0	1	110	0	000	00	00	00	0b0110011	0b101	0b0000000	0bxxxxxx	0b0011100000000000	
9	srli	SRLI	I	0010011	101	xxxxxxx	xxxxxx	0	0	1	110	0	001	00	00	00	0b0010011	0b101	0b0000000	0bxxxxxx	0b0011100001000000	
10	beq	BEQ	B	1100011	000	xxxxxx	xxxxxx	0	0	1	000	1	011	01	01	00	0b1100011	0b000	0bxxxxxxx	0bxxxxxx	0b0010001011010100	beq
11	blt	BLT	B	1100011	100	xxxxxx	xxxxxx	0	0	1	000	1	011	01	01	01	0b1100011	0b001	0bxxxxxxx	0bxxxxxx	0b0010001011010101	blt
12	bge	BGE	B	1100011	101	xxxxxx	xxxxxx	0	0	1	000	1	011	01	01	10	0b1100011	0b010	0bxxxxxxx	0bxxxxxx	0b0010001011010110	bge
13	bne	BNE	B	1100011	001	xxxxxx	xxxxxx	0	0	1	000	1	011	01	01	11	0b1100011	0b011	0bxxxxxxx	0bxxxxxx	0b0010001011010111	bne
14	ld	LD	I	0000011	011	xxxxxx	xxxxxx	1	0	1	000	0	001	00	10	00	0b0000011	0b011	0bxxxxxxx	0bxxxxxx	0b1010000001001000	
15	sd	SD	S	0100011	011	xxxxxx	xxxxxx	0	1	0	000	0	001	00	10	00	0b0100011	0b011	0bxxxxxxx	0bxxxxxx	0b0100000001001000	
16	lw	LW	I	0000011	010	xxxxxx	xxxxxx	0	0	1	000	0	001	00	00	00	0b0000011	0b010	0bxxxxxxx	0bxxxxxx	0b0010000001000000	
17	sw	SW	S	0100011	010	xxxxxx	xxxxxx	0	0	0	000	0	001	00	00	00	0b0100011	0b010	0bxxxxxxx	0bxxxxxx	0b0000000001000000	
18	slti	SLTI	I	0010011	010	xxxxxx	xxxxxx	0	0	1	101	0	001	00	00	00	0b0010011	0b011	0bxxxxxxx	0bxxxxxx	0b0011010001000000	
19	slt	SLT	R	0110011	010	0000000	xxxxxx	0	0	1	100	0	000	00	00	00	0b0110011	0b010	0b0000000	0bxxxxxx	0b0011000000000000	
20	lb	LB	I	0000011	000	xxxxxx	xxxxxx	0	0	1	100	0	001	00	00	00	0b0000011	0b000	0bxxxxxxx	0bxxxxxx	0b0011000001000000	
21	lbu	LBU	I	0000011	100	xxxxxx	xxxxxx	0	0	1	101	0	001	00	00	00	0b0000011	0b100	0bxxxxxxx	0bxxxxxx	0b0011010001000000	
22	and	AND	R	0110011	111	0000000	xxxxxx	0	0	1	010	0	000	00	00	00	0b0110011	0b111	0b0000000	0bxxxxxx	0b0010100000000000	
23	or	OR	R	0110011	110	0000000	xxxxxx	0	0	1	011	0	000	00	00	00	0b0110011	0b110	0b0000000	0bxxxxxx	0b0010110000000000	
24																						
25																						
26																						
27																						
28																						
29																						
30																						
32					beq 1																	
33					blt 3																	
34					bge 1																	
35					bne 3																	
36																						