				Input				Control Outputs										Input bits				Output bits
INUM	Instruction	Mnemonic	Format	opcode	funct3	funct7	funct6	RFW	ALUOp	ALUSrcA	ALUSrcB	PCsel	WDsel	BROp	Size	MR	store	load	opcode	funct3	funct7	funct6	
0	addi	ADDI	I	0010011	000	xxxxxx	xxxxxx	1	0000	0	001	0	0	000	00	0	0	0	0b0010011	0b000	0bxxxxxx	0bxxxxxx	0b10000000010000000000
1	addi	ADDR	R	0110011	000	0000000	xxxxxx	1	0000	0	000	0	0	000	00	0	0	0	0b0110011	0b000	0b0000000	0bxxxxxx	0b10000000000000000000
2	jal	JAL	J	1101111	xxx	xxxxxx	xxxxxx	1	0000	1	110	1	1	000	00	0	0	0	0b1101111	0bxxx	0bxxxxxx	0bxxxxxx	0b10000111011000000000
3	jalr	JALR	I	1100111	000	xxxxxx	xxxxxx	0	0000	0	001	1	1	000	00	0	0	0	0b1100111	0b000	0bxxxxxx	0bxxxxxx	0b00000000111000000000
4	sll	SLLR	R	0110011	001	0000000	xxxxxx	1	0100	0	000	0	0	000	00	0	0	0	0b0110011	0b001	0b0000000	0bxxxxxx	0b10100000000000000000
5	sll	SLLI	I	0010011	001	0000000	xxxxxx	1	0100	0	110	0	0	000	00	0	0	0	0b0010011	0b001	0b0000000	0bxxxxxx	0b10100011000000000000
6	srl	SRLR	R	0110011	101	0000000	xxxxxx	1	0101	0	000	0	0	000	00	0	0	0	0b0110011	0b101	0b0000000	0bxxxxxx	0b10101000000000000000
7	srl	SRLI	I	0010011	101	0000000	xxxxxx	1	0101	0	110	0	0	000	00	0	0	0	0b0010011	0b101	0b0000000	0bxxxxxx	0b10101011000000000000
8	beq	BEQ	B	1100011	000	xxxxxxxx	xxxxxx	0	0000	1	011	0	0	001	00	0	0	0	0b1100011	0b000	0bxxxxxxxx	0bxxxxxx	0b00000101100001000000
9	bne	BNE	B	1100011	001	xxxxxxxx	xxxxxx	0	0000	1	011	0	0	010	00	0	0	0	0b1100011	0b001	0bxxxxxxxx	0bxxxxxx	0b00000101100010000000
10	blt	BLT	B	1100011	100	xxxxxxxx	xxxxxx	0	0000	1	011	0	0	100	00	0	0	0	0b1100011	0b100	0bxxxxxxxx	0bxxxxxx	0b00000101100100000000
11	bge	BGE	B	1100011	101	xxxxxxxx	xxxxxx	0	0000	1	011	0	0	011	00	0	0	0	0b1100011	0b101	0bxxxxxxxx	0bxxxxxx	0b00000101100011000000
12	mul	MUL	R	0110011	000	0000001	xxxxxx	1	0010	0	000	0	0	000	00	0	0	0	0b0110011	0b000	0b0000001	0bxxxxxx	0b10010000000000000000
13	sub	SUB	R	0110011	000	0100000	xxxxxx	1	0001	0	000	0	0	000	00	0	0	0	0b0110011	0b000	0b1000000	0bxxxxxx	0b10001000000000000000
14	lui	LUI	U	0110111	xxx	xxxxxxxx	xxxxxx	1	1011	0	100	0	0	000	00	0	0	0	0b0110111	0bxxxx	0bxxxxxxx	0bxxxxxx	0b11011010000000000000
15	lb	LB	I	0000011	000	xxxxxxxx	xxxxxx	1	0000	0	001	0	0	000	01	1	0	1	0b0000011	0b000	0bxxxxxxx	0bxxxxxx	0b10000001000000001101
16	lw	LW	I	0000011	010	xxxxxxxx	xxxxxx	1	0000	0	001	0	0	000	10	1	0	1	0b0000011	0b001	0bxxxxxxx	0bxxxxxx	0b10000001000010101
17	sb	SB	S	0100011	000	xxxxxxxx	xxxxxx	0	0000	0	010	0	0	000	01	0	1	1	0b0100011	0b000	0bxxxxxxx	0bxxxxxx	0b00000001000000001011
18	sw	SW	S	0100011	010	xxxxxxxx	xxxxxx	0	0000	0	010	0	0	000	10	0	1	1	0b0100011	0b010	0bxxxxxxx	0bxxxxxx	0b00000001000000010011
19	and	AND	R	0110011	111	0000000	xxxxxx	1	1000	0	000	0	0	000	00	0	0	0	0b0110011	0b111	0b0000000	0bxxxxxx	0b11000000000000000000
20	or	OR	R	0110011	110	0000000	xxxxxx	1	1001	0	000	0	0	000	00	0	0	0	0b0110011	0b110	0b0000000	0bxxxxxx	0b11001000000000000000
21	ld	LD	I	0000011	011	xxxxxxxx	xxxxxx	1	0000	0	001	0	0	000	11	1	0	1	0b0000011	0b011	0bxxxxxxx	0bxxxxxx	0b10000001000000011101
22	sd	SD	S	0100011	011	xxxxxxxx	xxxxxx	0	0000	0	010	0	0	000	11	0	1	1	0b0100011	0b011	0bxxxxxxx	0bxxxxxx	0b00000001000000011011
23	addiw	ADDIW	I	0011011	000	xxxxxxxx	xxxxxx	1	1010	0	001	0	0	000	00	0	0	0	0b0011011	0b000	0bxxxxxxx	0bxxxxxx	0b11010000100000000000
24	subw	SUBW	R	0111011	000	0100000	xxxxxx	1	0001	0	000	0	0	000	00	0	0	0	0b0111011	0b000	0b0100000	0bxxxxxx	0b10001000000000000000