

				Inputs				Control outputs										Input bits				Output bits		
INUM	Instruction	Mnemonic	Format	opcode	funct3	funct7	funct6	Memsize	Load	Store	BRop	RFW	ALUOp	ALUSrcA	ALUSrcB	PCsel	WDsel	opcode	funct3	funct7	funct6	bin	hex	
0	addi	ADDI	I	0010011	000	xxxxxxx	xxxxxxx	00	0	0	00	1	0000	0	001	00	00	0b0010011	0b000	0bxxxxxxx	0bxxxxxxx	0b00000001000000010000	0x1010	
1	add	ADDR	R	0110011	000	0000000	xxxxxxx	00	0	0	00	1	0000	0	000	00	00	0b0110011	0b000	0b0000000	0bxxxxxxx	0b00000001000000000000	0x1000	
2	jal	JAL_	J	1101111	xxx	xxxxxxx	xxxxxxx	00	0	0	00	1	0000	1	010	01	01	0b1101111	0bxxx	0bxxxxxxx	0bxxxxxxx	0b00000001000010100101	0x10A5	
3	jalr	JALR	I	1100111	000	xxxxxxx	xxxxxxx	00	0	0	00	1	0000	0	001	01	01	0b1100111	0b000	0bxxxxxxx	0bxxxxxxx	0b00000001000000010101	0x1015	
4	mul	MUL_	R	0110011	000	0000001	xxxxxxx	00	0	0	00	1	0010	0	000	00	00	0b0110011	0b000	0b0000001	0bxxxxxxx	0b00000001001000000000	0x1200	
5	sll	SLL_	R	0110011	001	0000000	xxxxxxx	00	0	0	00	1	0011	0	000	00	00	0b0110011	0b001	0b0000000	0b0000000	0b00000001001100000000	0x1300	
6	slli	SLLI	I	0010011	001	xxxxxxx	0000000	00	0	0	00	1	0011	0	001	00	00	0b0010011	0b001	0bxxxxxxx	0b0000000	0b000000010011000010000	0x1310	
7	srl	SRL_	R	0110011	101	xxxxxxx	0000000	00	0	0	00	1	0100	0	000	00	00	0b0110011	0b101	0bxxxxxxx	0b0000000	0b00000001010000000000	0x1400	
8	srlr	SRLI	I	0010011	101	0000000	xxxxxxx	00	0	0	00	1	0100	0	001	00	00	0b0010011	0b101	0b0000000	0bxxxxxxx	0b00000001010000010000	0x1410	
9	beq	BEQ_	B	1100011	000	xxxxxxx	xxxxxxx	00	0	0	00	0	0000	1	011	10	01	0b1100011	0b000	0bxxxxxxx	0bxxxxxxx	0b000000000000010111001	0xB9	
10	bne	BNE_	B	1100011	001	xxxxxxx	xxxxxxx	00	0	0	01	0	0000	1	011	10	01	0b1100011	0b001	0bxxxxxxx	0bxxxxxxx	0b000000010000010111001	0x20B9	
11	blt	BLT_	B	1100011	100	xxxxxxx	xxxxxxx	00	0	0	10	0	0000	1	011	10	01	0b1100011	0b100	0bxxxxxxx	0bxxxxxxx	0b0000000100000001011001	0x40B9	
12	bge	BGE_	B	1100011	101	xxxxxxx	xxxxxxx	00	0	0	11	0	0000	1	011	10	01	0b1100011	0b101	0bxxxxxxx	0bxxxxxxx	0b0000000110000001011001	0x60B9	
13	sub	SUB_	R	0110011	000	0100000	xxxxxxx	00	0	0	00	1	0001	0	000	00	00	0b0110011	0b000	0b0100000	0bxxxxxxx	0b00000001000100000000	0x1100	
14	and	AND_	R	0110011	111	0000000	xxxxxxx	00	0	0	00	1	0101	0	000	00	00	0b0110011	0b111	0b0000000	0bxxxxxxx	0b00000001010100000000	0x1500	
15	ld	LD_	I	0000011	011	xxxxxxx	xxxxxxx	11	1	0	00	1	0000	0	001	00	10	0b0000011	0b011	0bxxxxxxx	0bxxxxxxx	0b11100001000000010010	0x71012	
16	lw	LW_	I	0000011	010	xxxxxxx	xxxxxxx	10	1	0	00	1	0000	0	001	00	10	0b0100011	0b010	0bxxxxxxx	0bxxxxxxx	0b10100001000000010010	0x51012	
17	lb	LB_	I	0000011	000	xxxxxxx	xxxxxxx	00	1	0	00	1	0000	0	001	00	10	0b0100011	0b000	0bxxxxxxx	0bxxxxxxx	0b00100001000000010010	0x11012	
18	sd	SD_	S	0100011	011	xxxxxxx	xxxxxxx	11	0	1	00	0	0000	0	100	00	00	0b0100011	0b011	0bxxxxxxx	0bxxxxxxx	0b11010000000001000000	0x68040	
19	sw	SW_	S	0100011	010	xxxxxxx	xxxxxxx	10	1	1	00	0	0000	0	100	00	00	0b0100011	0b010	0bxxxxxxx	0bxxxxxxx	0b10110000000001000000	0x58040	
20	sb	SB_	S	0100011	000	xxxxxxx	xxxxxxx	00	1	1	00	0	0000	0	100	00	00	0b0100011	0b000	0bxxxxxxx	0bxxxxxxx	0b00110000000001000000	0x18040	
21	or	OR_	R	0110011	110	0000000	xxxxxxx	00	0	0	00	1	0110	0	000	00	00	0b0110011	0b110	0b0000000	0bxxxxxxx	0b00000001011000000000	0x1600	
22	lbu	LBU_	I	0000011	100	xxxxxxx	xxxxxxx	00	0	0	00	1	0000	0	000	00	11	0b0000011	0b100	0bxxxxxxx	0bxxxxxxx	0b00000001000000000001	0x1003	
23	xor	XOR_	R	0110011	100	0000000	xxxxxxx	00	0	0	00	1	0111	0	000	00	00	0b0110011	0b100	0b0000000	0bxxxxxxx	0b00000001011100000000	0x1700	
24	sra	SRA_	R	0110011	101	0100000	xxxxxxx	00	0	0	00	1	1000	0	000	00	00	0b0110011	0b101	0b0100000	0bxxxxxxx	0b00000001100000000000	0x1800	
25	div	DIV_	R	0110011	100	0000001	xxxxxxx	00	0	0	00	1	1001	0	000	00	00	0b0110011	0b100	0b0000001	0bxxxxxxx	0b00000001100100000000	0x1900	