

31	27	26	25	24	20	19	15	14	12	11	7	6	0		
funct7				rs2			rs1		funct3		rd		opcode		R-type
imm[11:0]						rs1		funct3		rd		opcode		I-type	
imm[11:5]				rs2			rs1		funct3		imm[4:0]		opcode		S-type
imm[12 10:5]				rs2			rs1		funct3		imm[4:1 11]		opcode		B-type
imm[31:12]										rd		opcode		U-type	
imm[20 10:1 11 19:12]										rd		opcode		J-type	

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imm[31:12]										rd		0110111		LUI	
imm[31:12]										rd		0010111		AUIPC	
imm[20 10:1 11 19:12]										rd		1101111		JAL	
imm[11:0]						rs1		000		rd		1100111		JALR	
imm[12 10:5]				rs2			rs1		000		imm[4:1 11]		1100011		BEQ
imm[12 10:5]				rs2			rs1		001		imm[4:1 11]		1100011		BNE
imm[12 10:5]				rs2			rs1		100		imm[4:1 11]		1100011		BLT
imm[12 10:5]				rs2			rs1		101		imm[4:1 11]		1100011		BGE
imm[12 10:5]				rs2			rs1		110		imm[4:1 11]		1100011		BLTU
imm[12 10:5]				rs2			rs1		111		imm[4:1 11]		1100011		BGEU
imm[11:0]						rs1		000		rd		0000011		LB	
imm[11:0]						rs1		001		rd		0000011		LH	
imm[11:0]						rs1		010		rd		0000011		LW	
imm[11:0]						rs1		100		rd		0000011		LBU	
imm[11:0]						rs1		101		rd		0000011		LHU	
imm[11:5]				rs2			rs1		000		imm[4:0]		0100011		SB
imm[11:5]				rs2			rs1		001		imm[4:0]		0100011		SH
imm[11:5]				rs2			rs1		010		imm[4:0]		0100011		SW
imm[11:0]						rs1		000		rd		0010011		ADDI	
imm[11:0]						rs1		010		rd		0010011		SLTI	
imm[11:0]						rs1		011		rd		0010011		SLTIU	
imm[11:0]						rs1		100		rd		0010011		XORI	
imm[11:0]						rs1		110		rd		0010011		ORI	
imm[11:0]						rs1		111		rd		0010011		ANDI	
0000000				shamt			rs1		001		rd		0010011		SLLI
0000000				shamt			rs1		101		rd		0010011		SRLI
0100000				shamt			rs1		101		rd		0010011		SRAI
0000000				rs2			rs1		000		rd		0110011		ADD
0100000				rs2			rs1		000		rd		0110011		SUB
0000000				rs2			rs1		001		rd		0110011		SLL
0000000				rs2			rs1		010		rd		0110011		SLT
0000000				rs2			rs1		011		rd		0110011		SLTU
0000000				rs2			rs1		100		rd		0110011		XOR
0000000				rs2			rs1		101		rd		0110011		SRL
0100000				rs2			rs1		101		rd		0110011		SRA
0000000				rs2			rs1		110		rd		0110011		OR
0000000				rs2			rs1		111		rd		0110011		AND
fm		pred		succ		rs1		000		rd		0001111		FENCE	
000000000000						00000		000		00000		1110011		ECALL	
000000000001						00000		000		00000		1110011		EBREAK	