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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ID

RV32I Base Instruction Set

											opcode		Instr	Type
imm[31:12]										rd	0110111		LUI	**U Type**
imm[31:12]										rd	0010111		AUIPC	
imm[20|10:1|11|19:12]										rd	1101111		JAL	**J-Type**
imm[11:0]						rs1		000		rd	1100111		JALR	
imm[12|10:5]				rs2		rs1		000		imm[4:1|11]	1100011		BEQ	**B Type**
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	**I - Type**
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	**S- Type**
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	**I - Type**
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	**R- Type**
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	
0000		pred		succ		00000		000		00000	0001111		FENCE	
0000		0000		0000		00000		001		00000	0001111		FENCE.I	
000000000000						00000		000		00000	1110011		ECALL	
000000000001						00000		000		00000	1110011		EBREAK	
csr						rs1		001		rd	1110011		CSRRW	
csr						rs1		010		rd	1110011		CSRRS	
csr						rs1		011		rd	1110011		CSRRC	
csr						zimm		101		rd	1110011		CSRRWI	
csr						zimm		110		rd	1110011		CSRRSI	
csr						zimm		111		rd	1110011		CSRRCI	