

INSTR

Instruction	RegDst	RegSrc	ALUop	0ext	RegWrt	Bsrc	InvA	InvB	cin	br in	MemWrt	ALUJmp	IMMSrc
01000	00	10	ADD	0	1	01	0	0	0	NOBR	0	0	X
01001	00	10	SUB	0	1	01	1	0	1	NOBR	0	0	X
01010	00	10	XOR	1	1	01	0	0	0	NOBR	0	0	X
01011	00	10	AND	1	1	01	0	1	0	NOBR	0	0	X
10100	00	10	ROL	1	1	01	0	0	0	NOBR	0	0	X
10101	00	10	SHL	1	1	01	0	0	0	NOBR	0	0	X
10110	00	10	ROR	1	1	01	0	0	0	NOBR	0	0	X
10111	00	10	SRL	1	1	01	0	0	0	NOBR	0	0	X
10000	X	X	ADD	0	0	01	X	X	X	NOBR	1	0	X
10001	00	01	ADD	0	1	01	0	0	0	NOBR	0	0	X
10011	01	10	ADD	0	1	01	0	0	0	NOBR	1	0	X
11001	10	10	REV	X	1	X	0	0	0	NOBR	0	0	X
11011	10	10	FUNC1 (00)	X	1	00	0	0	0	NOBR	0	0	X
11011	10	10	FUNC1 (01)	X	1	00	1	0	1	NOBR	0	0	X
11011	10	10	FUNC1 (10)	X	1	00	0	0	0	NOBR	0	0	X
11011	10	10	FUNC1 (11)	X	1	00	0	1	0	NOBR	0	0	X
11010	10	10	FUNC0 (00)	X	1	00	0	0	0	NOBR	0	0	X
11010	10	10	FUNC0 (01)	X	1	00	0	0	0	NOBR	0	0	X
11010	10	10	FUNC0 (10)	X	1	00	0	0	0	NOBR	0	0	X
11010	10	10	FUNC0 (11)	X	1	00	0	0	0	NOBR	0	0	X
11100	10	10	SEQ	X	1	00	0	0	0	NOBR	0	0	X
11101	10	10	SLT	X	1	00	0	0	0	NOBR	0	0	X
11110	10	10	SLE	X	1	00	0	0	0	NOBR	0	0	X
11111	10	10	SCO	X	1	00	0	0	0	NOBR	0	0	X
01100	X	X	NOP	0	0	X	0	0	0	EQ	0	0	0
01101	X	X	NOP	0	0	X	0	0	0	NE	0	0	0
01110	X	X	NOP	0	0	X	0	0	0	LT	0	0	0
01111	X	X	NOP	0	0	X	0	0	0	GE	0	0	0
11000	01	11	AND	0	1	10	0	0	0	NOBR	0	0	X
10010	01	11	SHL	1	1	11	0	0	0	NOBR	0	0	X
00100	X	X	X	X	0	X	X	X	X	JMP	0	0	1
00101	X	X	ADD	0	0	10	0	0	0	NOBR	0	1	X
00110	11	00	X	X	1	X	X	X	X	JMP	0	0	1
00111	11	X	ADD	0	1	10	0	0	0	NOBR	0	1	X

NOBR	00000
EQ	00001
NE	00010
LT	00100
GE	01000
JMP	10000

ALU OP

INST IN	func	OP (READABLE)	OUT to ALU	InvA	InvB	cin
01000	X	ADD	0100	0	0	0
01001	X	ADD	0100	1	0	1
01010	X	XOR	0111	0	0	0
01011	X	AND	0101	0	1	0
10100	X	ROL	0000	0	0	0
10101	X	SHL	0010	0	0	0
10110	X	ROR	0001	0	0	0
10111	X	SRL	0011	0	0	0
10001	X	ADD	0100	0	0	0
10001	X	ADD	0100	0	0	0
10011	X	ADD	0100	0	0	0
11001	X	REV	1011	0	0	0
11011	00	ADD	0100	0	0	0
11011	01	ADD	0100	1	0	1
11011	10	XOR	0111	0	0	0
11011	11	AND	0101	0	1	0
11010	00	ROL	0000	0	0	0
11010	01	SHL	0010	0	0	0
11010	10	ROR	0001	0	0	0
11010	11	SRL	0011	0	0	0
11100	X	SEQ	1100	1	0	1
11101	X	SLT	1101	1	0	1
11110	X	SLE	1110	1	0	1
11111	X	SCO	1111	0	0	0
01100	X	NOP	0110	0	0	0
01101	X	NOP	0110	0	0	0
01110	X	NOP	0110	0	0	0
01111	X	NOP	0110	0	0	0
11000		AND	0101	0	0	0
10010	X	SHL	0010	0	0	0
00101	X	ADD	0100	0	0	0
00111	X	ADD	0100	0	0	0

ALU

ADD	0100
AND	0101
NOP	0110
XOR	0111
ROL	0000
ROR	0001
SHL	0010
SRL	0011
SEQ	1100
SLT	1101
SLE	1110
SCO	1111
REV	1011