

	VARIABLE	IF	ID	EXE	MEM	WB
sub		FETCH()	GPR2READ(rs0, rs1)	ALUEXEC(sub, source0, source1)		WRITEBACK(rd, result)
subu		FETCH()	GPR2READ(rs0, rs1)	ALUEXEC(subu, source0, source1)		WRITEBACK(rd, result)
subi		FETCH()	GPR1READ1EXT(rs0, const)	ALUEXEC(sub, source0, source1)		WRITEBACK(rd, result)
subui		FETCH()	GPR1READ1CONST(rs0, const)	ALUEXEC(subu, source0, source1)		WRITEBACK(rd, result)
mult		FETCH()	GPR2READ(rs0, rs1)	MUL(mul, source0, source1)		WRITEBACK(rd, result)
multu		FETCH()	GPR2READ(rs0, rs1)	MUL(mulu, source0, source1)		WRITEBACK(rd, result)
div		FETCH()	GPR2READ(rs0, rs1)	DIVIDE(div, source0, source1)		WRITEBACK(rd, result)
divu		FETCH()	GPR2READ(rs0, rs1)	DIVIDE(divu, source0, source1)		WRITEBACK(rd, result)
and		FETCH()	GPR2READ(rs0, rs1)	ALUEXEC(and, source0, source1)		WRITEBACK(rd, result)
andi		FETCH()	GPR1READ1CONST(rs0, const)	ALUEXEC(and, source0, source1)		WRITEBACK(rd, result)
or		FETCH()	GPR2READ(rs0, rs1)	ALUEXEC(or, source0, source1)		WRITEBACK(rd, result)
ori		FETCH()	GPR1READ1CONST(rs0, const)	ALUEXEC(or, source0, source1)		WRITEBACK(rd, result)
xor		FETCH()	GPR2READ(rs0, rs1)	ALUEXEC(xor, source0, source1)		WRITEBACK(rd, result)
xori		FETCH()	GPR1READ1CONST(rs0, const)	ALUEXEC(xor, source0, source1)		WRITEBACK(rd, result)
sll		FETCH()	GPR2READ(rs0, rs1)	SHIFT(sll, source0, source1)		WRITEBACK(rd, result)
srl		FETCH()	GPR2READ(rs0, rs1)	SHIFT(srl, source0, source1)		WRITEBACK(rd, result)
sra		FETCH()	GPR2READ(rs0, rs1)	SHIFT(sra, source0, source1)		WRITEBACK(rd, result)
slli		FETCH()	GPR1READ1CONST(rs0, const)	SHIFT(sll, source0, source1)		WRITEBACK(rd, result)
srli		FETCH()	GPR1READ1CONST(rs0, const)	SHIFT(srl, source0, source1)		WRITEBACK(rd, result)
srai		FETCH()	GPR1READ1CONST(rs0, const)	SHIFT(sra, source0, source1)		WRITEBACK(rd, result)
slt		FETCH()	GPR2READ(rs0, rs1)	LT(cmp)		
sgt		FETCH()	GPR2READ(rs0, rs1)	GT(cmp)		
sle		FETCH()	GPR2READ(rs0, rs1)	LE(cmp)		
sge		FETCH()	GPR2READ(rs0, rs1)	GE(cmp)		
seq		FETCH()	GPR2READ(rs0, rs1)	EQ()		
sne		FETCH()	GPR2READ(rs0, rs1)	NE()		
slti		FETCH()	GPR1READ1CONST(rs0, const)	LT(cmp)		
sgti		FETCH()	GPR1READ1CONST(rs0, const)	GT(cmp)		
slei		FETCH()	GPR1READ1CONST(rs0, const)	LE(cmp)		
sgei		FETCH()	GPR1READ1CONST(rs0, const)	GE(cmp)		
seqi		FETCH()	GPR1READ1CONST(rs0, const)	EQ()		
snei		FETCH()	GPR1READ1CONST(rs0, const)	NE()		
lhi	wire [31:0] result	FETCH()	wire [15:0] zero16; zeros=0 result = <const,zero16>			WRITEBACK(rd, result)
lb		FETCH()	GPR1READ1EXT(rs0, const)	LOAD(lb)		
lh		FETCH()	GPR1READ1EXT(rs0, const)	LOAD(lh)		
lw		FETCH()	GPR1READ1EXT(rs0, const)	LOAD(load)		
lbu		FETCH()	GPR1READ1EXT(rs0, const)	LOAD(lbu)		
lhu		FETCH()	GPR1READ1EXT(rs0, const)	LOAD(lhu)		
sb		FETCH()	STORE(sb)			
sh		FETCH()	STORE(sh)			
sw		FETCH()	STORE(store)			
beqz		FETCH()	BRANCH(==)			
bnez		FETCH()	BRANCH(!=)			
j		FETCH()	JUMPADDR()			
jal		FETCH()	JUMPADDR() WRITELINKREG()			
jr		FETCH()	JUMP()			
jalr		FETCH()	JUMP() WRITELINKREG()			
MOD		FETCH()	GPR2READ(rs0, rs1)	MODULO(div, source0, source1)		WRITEBACK(rd, result)
modu		FETCH()	GPR2READ(rs0, rs1)	MODULO(divu, source0, source1)		WRITEBACK(rd, result)
sltu		FETCH()	GPR2READ(rs0, rs1)	LT(cmpu)		
sgtu		FETCH()	GPR2READ(rs0, rs1)	GT(cmpu)		
sleu		FETCH()	GPR2READ(rs0, rs1)	LE(cmpu)		
sgeu		FETCH()	GPR2READ(rs0, rs1)	GE(cmpu)		
add		FETCH()	GPR2READ(rs0, rs1)	ALUEXEC(add, source0, source1)		WRITEBACK(rd, result)
addu		FETCH()	GPR2READ(rs0, rs1)	ALUEXEC(addu, source0, source1)		WRITEBACK(rd, result)
addi		FETCH()	GPR1READ1EXT(rs0, const)	ALUEXEC(add, source0, source1)		WRITEBACK(rd, result)
addui		FETCH()	GPR1READ1CONST(rs0, const)	ALUEXEC(addu, source0, source1)		WRITEBACK(rd, result)