type	opcode[5]	subject[5]	input0[5]	input1[5]	variant[12]			meaning
	000xx				**alutp[3]**	**aluop[3]**	**Alumask[6]{zc,oc,zr,ir,wf,wr}**	**ALU**
a-type	__00	5'b0	5'b0	5'b0	3'b000	3'b000	6'b000000	nop (add r0,r0,r0 discard)
		5'bx	5'bx	5'bx			6'bxxxx00	*no effect, reserved*
		dst_reg[5]	src_reg[5]				6'b001000	mov cr,src
		dst_reg[5]		src_creg[5]			6'b000000	mov dst,cr
		dst_reg[5]	lhs_reg[5]	rhs_reg[5]			6'b100011	add
							6'b010111	sub
				5'bx			6'b101001	mov dst,src (add, zr)
				rhs_reg[5]			6'b010110	cmp (sub nw)
							6'b000011	adc
							6'b000111	sbb
							6'b000110	cmpc (sbb nw)
						3'b001	6'b000011	and
							6'b000111	andn
							6'b000010	tst
							6'b000101	tstn
						3'b010	6'b000011	or
							6'b000111	orn
						3'b011	6'b000011	xor
							6'b000111	xorn
				5'bx			6'b001111	not (xor reg,~0 (nf))
				5'bx	3'b001	3'b000	amount[6]	shl imm
						3'b001		shr imm
						3'b010		rcl imm
						3'b011		rcr imm
				amt_reg[5]		3'b100	6'b0	shl variable
						3'b101		shr variable
						3'b110		rcl variable
						3'b111		rcr variable
				rhs_reg[5]	3'b010	3'b000		fadds
						3'b001		fsubs
	__xx							reserved
	__11	dst_creg[5]	src_reg[5]			3'b000	6'b0	*mov creg,reg*
		dst_reg[5]	src_creg[5]			3'b001		*mov reg,creg*
	001xx							**Immediate**
i-type	__00	dst_reg[5]	imm[22]					ldiu Load lo zero hi
	__01							ldis Load lo signed
	__10							ldhz Load hi zero lo
	__11							ldh Load hi keep lo
	010xx							**Control Transfer**
i-type	__00	cc[5]	imm[22]					jcc ofs
i-type	__01	dst_reg[5]						call
i-type	__10	src_reg[5]						jmp src+sx(imm)
	__11	5'b0						intr
	011xx							***Reserved***
	100xx							**32-bit Load/Store**
m-type	__00	dst_reg[5]	src_reg[5]	5'bxxx00	imm[12]			ld dst,[src+sx(imm12)]
				5'bxxx01				st [dst+sx(imm12)],src
				5'bxxx10				st [dst+sx(imm12)]+,src
				5'bxxx11				st -[dst+sx(imm12)],src
o-type	__01	dst_reg[5]	base_reg[5]	ofs_reg[5]				ld dst,[base+ofs+ sx(imm12)
i-type	__10	src_reg[5]	imm[22]					stp [sx(pcofs)],src
	__11	dst_reg[5]						ldp dst,[sx(pcofs)]
*	**101xx**							**16-bit Load/Store**
*	**110xx**							**8-bit Load/Store**