

ILOC Reference
CS 480 – Spring 2015

Form		Op1	Op2	Op3	Comment
Integer Arithmetic					
add	op1, op2 => op3	reg	reg	reg	addition
sub	op1, op2 => op3	reg	reg	reg	subtraction
mult	op1, op2 => op3	reg	reg	reg	multiplication
div	op1, op2 => op3	reg	reg	reg	division
addI	op1, op2 => op3	reg	imm	reg	addition w/ constant
multI	op1, op2 => op3	reg	imm	reg	multiplication w/ constant
neg	op1 => op2	reg	reg		arithmetic negation
Boolean Arithmetic					
and	op1, op2 => op3	reg	reg	reg	boolean AND
and	op1, op2 => op3	reg	reg	reg	boolean OR
not	op1 => op2	reg	reg		boolean NOT
Data Movement					
i2i	op1 => op2	reg	reg		register copy
loadI	op1 => op2	imm	reg		load integer constant
loadS	&op1 => op2	sym	reg		load symbol address
load	[op1] => op2	reg	reg		load from address
loadAI	[op1+op2] => op3	reg	imm	reg	load from base + immediate offset
loadAO	[op1+op2] => op3	reg	reg	reg	load from base + offset
store	op1 => [op2]	reg	reg		store to address
storeAI	op1 => [op2+op3]	reg	reg	imm	store to base + immediate offset
storeAO	op1 => [op2+op3]	reg	reg	reg	store to base + offset
Comparison					
cmp_LT	op1, op2 => op3	reg	reg	reg	less-than comparison
cmp_LE	op1, op2 => op3	reg	reg	reg	less-than-or-equal-to comparison
cmp_EQ	op1, op2 => op3	reg	reg	reg	equality comparison
cmp_GE	op1, op2 => op3	reg	reg	reg	greater-than-or-equal-to comparison
cmp_GT	op1, op2 => op3	reg	reg	reg	greater-than comparison
cmp_NE	op1, op2 => op3	reg	reg	reg	inequality comparison
Control Flow					
label	("op1:")	lbl			control flow label
jump	op1	lbl			unconditional branch
cbr	op1 => op2, op3	reg	lbl	lbl	conditional branch
param	op1	reg			pass parameter
call		fun			call function
return					return to caller
Miscellaneous					
print		imm/ reg/ str			print value to standard out
nop					no-op (do nothing)

Op	Meaning
reg	register (int or bool)
imm	immediate (int constant)
sym	symbol
lbl	jump label
fun	call label
str	string