MIPS Reference Sheet

Basic Instruction Formats

	Register	0000 00ss ssst tttt dddd d000 00ff ffff	R	
	Immediate	oooo ooss ssst tttt iiii iiii iiii iiii	I	

Instructions

Word	.word i	iiii iiii iiii iiii iiii iiii iiii iiii		
Add	add $d, $s, $t	0000 00ss ssst tttt dddd d000 0010 0000	R	$d = $s + $t
Subtract	sub $d, $s, $t	0000 00ss ssst tttt dddd d000 0010 0010	R	$d = $s - $t
Multiply	mult $s, $t	0000 00ss ssst tttt 0000 0000 0001 1000	R	hi:lo = $s * $t
Multiply Unsigned	multu $s, $t	0000 00ss ssst tttt 0000 0000 0001 1001	R	hi:lo = $s * $t
Divide	div $s, $t	0000 00ss ssst tttt 0000 0000 0001 1010	R	lo = $s / $t; hi = $s % $t
Divide Unsigned	divu $s, $t	0000 00ss ssst tttt 0000 0000 0001 1011	R	lo = $s / $t; hi = $s % $t
Move From High/Remainder	mfhi $d	0000 0000 0000 0000 dddd d000 0001 0000	R	$d = hi
Move From Low/Quotient	mflo $d	0000 0000 0000 0000 dddd d000 0001 0010	R	$d = lo
Load Immediate And Skip	lis $d	0000 0000 0000 0000 dddd d000 0001 0100	R	$d = MEM[pc]; pc = pc + 4
Load Word	lw $t, i($s)	1000 11ss ssst tttt iiii iiii iiii iiii	I	$t = MEM [$s + i]:4
Store Word	sw $t, i($s)	1010 11ss ssst tttt iiii iiii iiii iiii	I	MEM [$s + i]:4 = $t
Set Less Than	slt $d, $s, $t	0000 00ss ssst tttt dddd d000 0010 1010	R	$d = 1 if $s < $t; 0 otherwise
Set Less Than Unsigned	sltu $d, $s, $t	0000 00ss ssst tttt dddd d000 0010 1011	R	$d = 1 if $s < $t; 0 otherwise
Branch On Equal	beq $s, $t, i	0001 00ss ssst tttt iiii iiii iiii iiii	I	if ($s == $t) pc += i * 4
Branch On Not Equal	bne $s, $t, i	0001 01ss ssst tttt iiii iiii iiii iiii	I	if ($s != $t) pc += i * 4
Jump Register	jr $s	0000 00ss sss0 0000 0000 0000 0000 1000	R	pc = $s
Jump And Link Register	jalr $s	0000 00ss sss0 0000 0000 0000 0000 1001	R	$31 = pc; pc = $s