

ISA

Registers:

Name	Number	Description
\$zero	0	The constant Value 0
\$a0 - \$a2	1-3	Arguments
\$s0 - \$s4	4-8	Save Temporaries
\$t0 - \$t4	9-13	Temporaries
\$ra	14	Return address
\$v	15	Value for function result

Operations:

Mnemonic	Meaning	Type
add	Add	R
addi	Add immediate	I
div	Divide	R
multi	Multiply Immediate	I
sub	Subtract	R
sll	Shift logical left	I
slr	Shift logical Right	I
nand	NAND	R
lw	Load word	I
sw	Store Word	I
beq	Branch if equal	I
bne	Branch if not equal	I
jal	jump and link	J

j	jump	J
jr	jump Register	R
blt	Branch if less than	I

Encoding:

R

opcode	rs	rt	rd
4	4	4	4
15-12	11-8	7-4	3-0

I

opcode	rs	rt	immediate
4	4	4	4
15-12	11-8	7-4	3-0

J

opcode	address
4	12
15-12	11-0

Hardware Design

