1 - tipo-R (2) - Tabela de Registos

Table 6.1 MIPS register set

Name	Number	Use
$0	0	the constant value 0
$at	1	assembler temporary
$v0–$v1	2–3	function return value
$a0–$a3	4–7	function arguments
$t0–$t7	8–15	temporary variables
$s0–$s7	16–23	saved variables
$t8–$t9	24–25	temporary variables
$k0–$k1	26–27	operating system (OS) temporaries
$gp	28	global pointer
$sp	29	stack pointer
$fp	30	frame pointer
$ra	31	function return address

Tabela 6.1 - Nome, número e respectivo uso, de cada registo.

1 - tipo-R (2) - Tabela de Código de Função (*funct*)

Table B.2 R-type instructions, sorted by funct f

Funct	Name	Description
000000 (0)	sll rd, rt, shamt	shift left logical
000010 (2)	srl rd, rt, shamt	shift right logical
000011 (3)	sra rd, rt, shamt	shift right arithmetic
000100 (4)	sllv rd, rt, rs	shift left logical variable
000110 (6)	srlv rd, rt, rs	shift right logical variable
000111 (7)	srav rd, rt, rs	shift right arithmetic variable
001000 (8)	jr rs	jump register
001001 (9)	jalr rs	jump and link register
001100 (12)	syscall	system call
001101 (13)	break	break
010000 (16)	mfhi rd	move from hi
010001 (17)	mthi rs	move to hi
010010 (18)	mflo rd	move from lo
010011 (19)	mtlo rs	move to lo
011000 (24)	mult rs, rt	multiply
011001 (25)	multu rs, rt	multiply unsigned
011010 (26)	div rs, rt	divide
011011 (27)	divu rs, rt	divide unsigned

Table B.2 R-type instructions, sorted by funct field-

Funct	Name	Description
100000 (32)	add rd, rs, rt	add
100001 (33)	addu rd, rs, rt	add unsigned
100010 (34)	sub rd, rs, rt	subtract
100011 (35)	subu rd, rs, rt	subtract unsigned
100100 (36)	and rd, rs, rt	and
100101 (37)	or rd, rs, rt	or
100110 (38)	xor rd, rs, rt	xor
100111 (39)	nor rd, rs, rt	nor
101010 (42)	slt rd, rs, rt	set less than
101011 (43)	sltu rd, rs, rt	set less than unsigned

Tabela B.2
Instruções do tipo-R ordenadas pelo campo funct.

Type-R Function Code: ADD, SUB

1 - tipo-I (4) - Tabela de Código de Operação (opcode)

Opcode	Name	Description
000000 (0)	R-type	all R-type instructions
000001 (1) (rt = 0/1)	bltz rs, label / bgez rs, label	branch less than zero/branch greater than or equal to zero
000010 (2)	j label	jump
000011 (3)	jal label	jump and link
000100 (4)	beq rs, rt, label	branch if equal
000101 (5)	bne rs, rt, label	branch if not equal
000110 (6)	blez rs, label	branch if less than or equal to zero
000111 (7)	bgtz rs, label	branch if greater than zero
001000 (8)	addi rt, rs, imm	add immediate
001001 (9)	addiu rt, rs, imm	add immediate unsigned
001010 (10)	slti rt, rs, imm	set less than immediate
001011 (11)	sltiu rt, rs, imm	set less than immediate unsigned
001100 (12)	andi rt, rs, imm	and immediate
001101 (13)	ori rt, rs, imm	or immediate
001110 (14)	xori rt, rs, imm	xor immediate
001111 (15)	lui rt, imm	load upper immediate
010000 (16) (rs = 0/4)	mfc0 rt, rd / mtc0 rt, rd	move from/to coprocessor 0
010001 (17)	F-type	fop = 16/17: F-type instructions
010001 (17) (rt = 0/1)	bc1f label / bc1t label	fop = 8: branch if fpcond is FALSE/TRUE

Opcode	Name	Description
011100 (28) (func = 2)	mul rd, rs, rt	multiply (32-bit result)
100000 (32)	lb rt, imm(rs)	load byte
100001 (33)	lh rt, imm(rs)	load halfword
100011 (35)	lw rt, imm(rs)	load word
100100 (36)	lbu rt, imm(rs)	load byte unsigned
100101 (37)	lhu rt, imm(rs)	load halfword unsigned
101000 (40)	sb rt, imm(rs)	store byte
101001 (41)	sh rt, imm(rs)	store halfword
101011 (43)	sw rt, imm(rs)	store word
110001 (49)	lwc1 ft, imm(rs)	load word to FP coprocessor 1
111001 (56)	swc1 ft, imm(rs)	store word to FP coprocessor 1

Table B.1
Instructions sorted by opcode field.

Tipo-I: e.g., ADDI, LW, SW

Tipo-J: J, JAL