**MIPS Reference Sheet**

**Instruction Formats**

R-Type



I-Type



J-Type



**Available Registers**

Temporaries: $t0-t9 Return Values: $v0, $v1  
 Saved Values: $s0-$s7 Return Address: $ra  
 Arguments: $a0-$a3 Stack Pointer: $sp

**Instructions**

add add $1,$2,$3 $1 = $2 + $3   
 subtract sub $1,$2,$3 $1 = $2 – $3   
 add immediate addi $1,$2,100 $1 = $2 + 100  
  
 shift left logical sll $1,$2,10 $1 = $2 << 10   
 shift right logical srl $1,$2,10 $1 = $2 >> 10

store word sw $3, 8($4) Mem[$4+8]=$3  
 load word lw $1, 8($2) $1=Mem[8+$2]  
 load upper imm lui $1,40 $1 = 40 << 16

set less than slt $1,$2,$3 $1 = ($2 < $3)   
 set less than imm slti $1,$2,100 $1 = ($2 < 100)   
 Branch on equal beq $s1, $s2, L if (s1 == s2), go to L   
 Branch on !equal bne $s1, $s2, L if (s1 != s2), go to L   
   
 jump j 10000 PC = PC:40000   
 jump register jr $31 PC = $31   
 jump and link jal 10000 $31 = PC + 4; PC = 40000