**Lab4 Preliminary**

A)

CS224

Section No: 1

Fall 2019

Lab No. 4

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B)

|  |  |  |
| --- | --- | --- |
| 8h’00 | 0x20020005 | addi $v0, $zero, 5 |
| 8h’04 | 0x2003000C | addi $v1, $zero, 12 |
| 8h’08 | 0x2067FFF7 | addi $a3, $v1, -9 |
| 8h’0C | 0x00E22025 | or $a0, $a3, $v0 |
| 8h’10 | 0x00642824 | and $a1, $v1, $a0 |
| 8h’14 | 0x00A42820 | add $a1, $a1, $a0 |
| 8h’18 | 0x10A7000A | beq $a1, $a3, 0x000A |
| 8h’1C | 0x0064202A | slt $a0, $v1, $a0 |
| 8h’20 | 0x10800001 | beq $a0, $zero, 0x0001 |
| 8h’24 | 0x20050000 | addi $a1, $zero, 0x0000 |
| 8h’28 | 0x00E2202A | slt $a0, $a3, $v0 |
| 8h’2C | 0x00853820 | add $a3, $a0, $a1 |
| 8h’30 | 0x00E23822 | sub $a3, $a3, $v0 |
| 8h’34 | 0xAC670044 | sw $a3, 68($v1) |
| 8h’38 | 0x8C020050 | lw  $v0, 80($zero) |
| 8h’3C | 0x08000011 | j 0x0000011 |
| 8h’40 | 0x20020001 | addi $v0, $zero, 0x0001 |
| 8h’44 | 0xAC020054 | sw $v0, 84($zero) |
| 8h’48 | 0x08000012 | j 0x0000012 |
| ------- | 0xXXXXXXXX | ---------------- |

C)

jalm:

IM[PC]

RF[rt] ← PC + 4

PC ← DM[ RF[rs] + SignExt[Imm] ]

lui:

IM[PC]

RF[rt] ← Imm || 0^16

PC ← PC + 4

F)

.data

.text

main:

addi $s0, $zero, 5 # testing I Type add immediate.

addi $s1, $zero, 4

sub $s2, $s0, $s1 # testing R Type sub.

addi $sp, $sp, -4

sw $s2, 0($sp) # testing I Type store word.

lw $s2, 0($sp) # testing I Type load word.

addi $sp, $sp, 4

addi $a0, $zero, 1

addi $a1, $zero, 0

or $a2, $a0, $a1 # testing R Type or

and $a2, $a0, $a1 # testing R Type and

ori $a3, $a1, 1 # testing I Type or immediate

andi $a3, $a1, 1 # testing I type and immediate

j jump\_1 # testing J type jump

jump\_1:

slt $s4, $s0, $s1 # testing R Type set less than

beq $s4, $zero, jump\_2 # testing I type branch equal

jump\_2:

lui $t1, 0x89FA # testing required I Type lui

jalm $t5, 40($s3) # testing required I Type jalm