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jsw50

Homework 2

1.

a.

i. 000000 00010 00011 00100 00000 10 0000
First 6 bits with last 6 bits = add
First register that is the first part being added (00010) = $v0
Second register that is the second part being added (00011) = $v1
Third register that the addition of the other two will be put (00100) = $a0
Thus, it is:
add $a0, $v0, $v1

ii. 100011 00110 00101 0000 0000 0000 0111
First 6 bits = lw
Next 5 bits = $a2
Next 5 bits = $a1
Last 16 bits is the immediate value which is the offset = 7
Thus, it is:
lw $a1, 7($a2)

iii. 000100 00010 00111 0000 0000 0000 0110
First 6 bits = beq
Next 5 bits = $v0
Next 5 bits = $a3
Next 16 bits is the offset = 6
Thus, it is:
beq $v0, $a3, 6

b.

i. and $t0, $t1, $t2
000000 01001 01010 01000 00000 100100

ii. sw $t0, 15($t1)
101011 01001 01000 0000 0000 0000 1111

iii. bne $t0, $t1, loop
000101 01000 01001 0000 0000 0001 0000

c.

Accumulator:

```
clear
load a
mult 1
mult b
add 2
mult 3
store c
```

Stack:

```
push b
push a
push 1
mult
mult
push 2
add
push 3
mult
pop c
```

General Purpose Registers:

```
mult c, a, 1
mult d, c, b
add e, d, 2
mult f, e, 3
```