CS241 Tutorial 2

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SymbolTables

1)

```
begin:
label: beq $0, $0, after
jr $4
after:
sw $31, 16($0)
lis $4
abc0: abc1: .word after

badStore:
lw $20, 4($0)
sw $20, 28($0)
end:
```

name	value(addr)
begin	0x0
label	0x0
after	0x8
abc0	0x10
abc1	0x10
badStore	0x14
end	0x1c

Assembly Errors

```
0 label: label: .word label
4 .word ;0
8 .word aaaaa
c .word 1 2 3
10 .word 2147483648 abcde:
14 .word ,
```

0: Two labels with the same name

4: Needs a number after .word (not in a comment) 8: cant have letters

c: has to have exactly 1 opperand (spaces make it 3)

10: we can get unsigned or signed integers so you can have values from $[-2^{31}, 2^{31} - 1]$ and $[0, 2^{32} - 1]$ so this number is allowed but the label has to be the very first thing on the line

14: no comma, bad (has to be the right thing).

C++ Review

Containers:

1. Pair$< int, string >$ p

2. Vector$< int >$ v; v.push_back(5);

3. List$< int >$ l; l.push_back(10); l.push_front(5);

4. Map$< string, int >$ m; m["foo"]=5;

5. Set$< int >$ s;