Kunle Olukotun

Hiding Memory Latency

Assumptions

- 32 KB cache
- 1 GB data structure

```
for (i = 10,000; i > 0, i--)
    for (p=head; p!=NIL;)
        if (p->value < i)
                p = p->left;
        else
                p = p->right;
```

```
        addiu   $s2, $s0, #10000        ; initialize $s2
iloop:  J       test
jloop:  lw      $s0, 0($s1)
        slt     $s0, $s0, $s2           ; p->value < i
        bnez    $s0, right
        lw      $s1, 4($s1)             ; p = p->left
        J       test
right:  lw      $s1, 8($s1)             ; p = p->right
test:   bnez    $s1, jloop
        addiu   $s2, $s2, -1            ; subtract 1
        bgtz    $s2, iloop
```

How well will your techniques work on this loop?