week 8

"I just had [a student] knock on my door to take a photo with me... Stalkers, I tell you!"

"I had [a student] waiting for me after section, and he had all of our names and photos on some sheets of paper."

"I was out of town this weekend and when I got back there was one in my bedroom."

"[A student] came to my house in Somerville at 4am this morning."

"I got to my hotel in San Francisco, and [a student] was waiting for me at the lobby with three DSLRs."

"I'm not even on staff this semester, but [a student] broke into my house this morning and recorded the whole thing with Google Glass."

"At least 12 people were eagerly waiting for me when I got out of my limo, and then I woke up."

happy Birthday!
SESAME STREET
happy birthday

CS50 Seminars

cs50.net/register

(seminars past at cs50.net/seminars)

- Amazing Web Apps with Ruby on Rails
- Computational Linguistics
- Introduction to iOS
- JavaScript for Web Apps
- Leap Motion SDK
- meteor.js: JavaScript on the back end
- Node.js
- Sleek Android Design
- Web Security: Active Defense

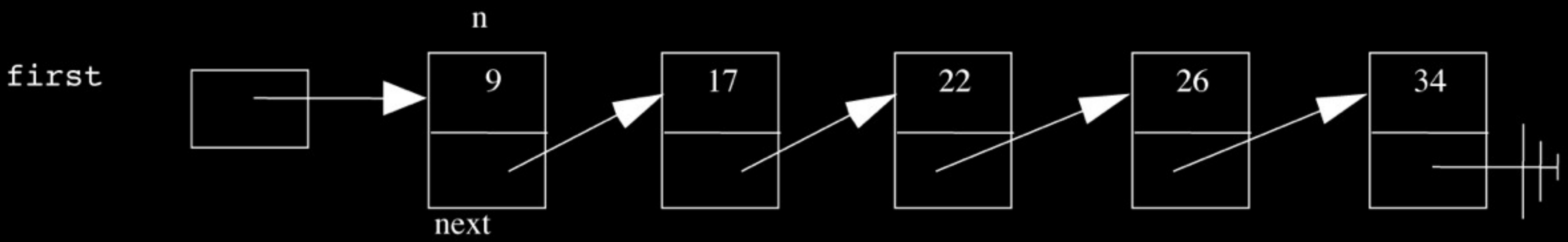
Leap Motion SDK

developer.leapmotion.com

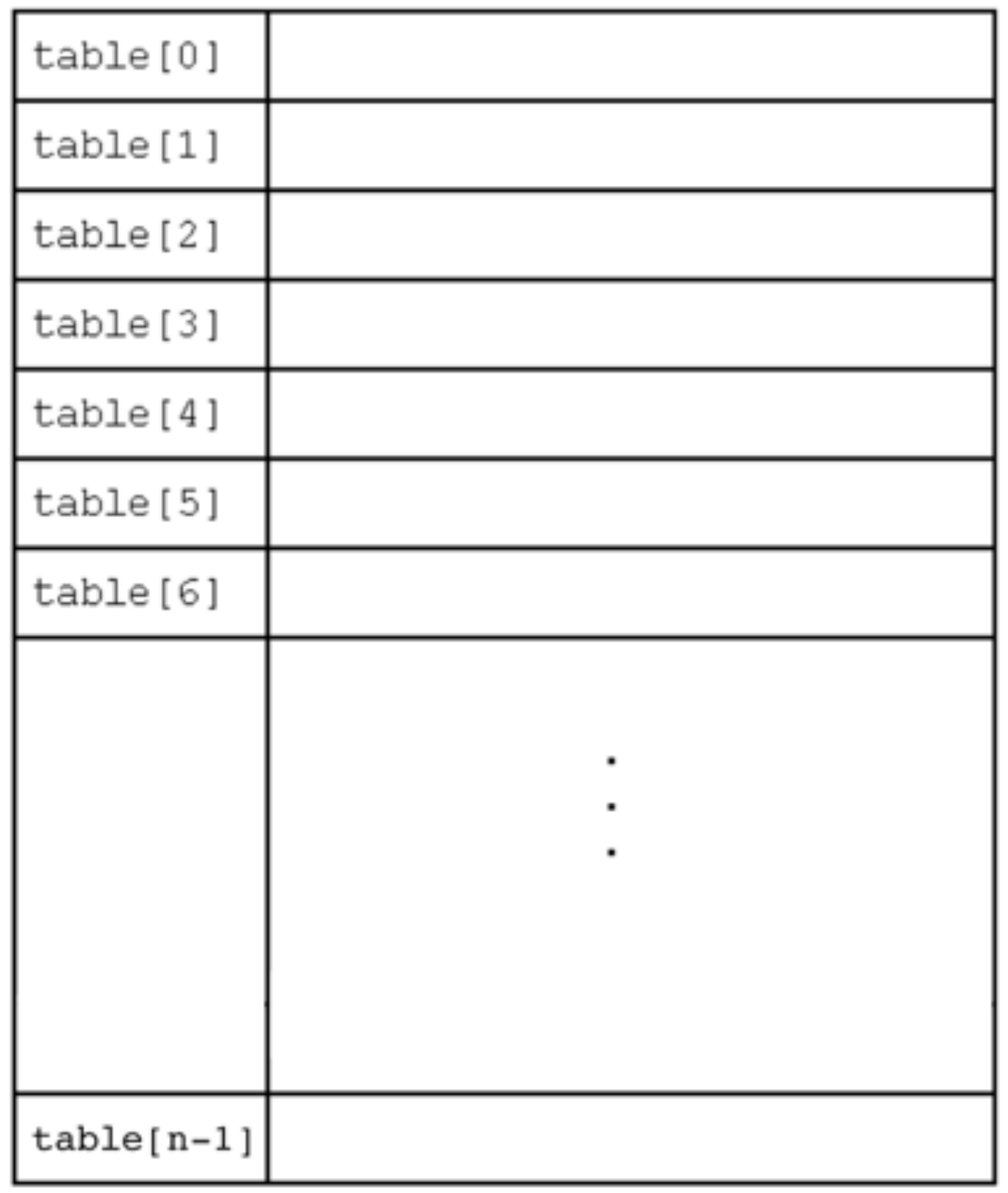
(C++, C#, Java, JavaScript, Python)

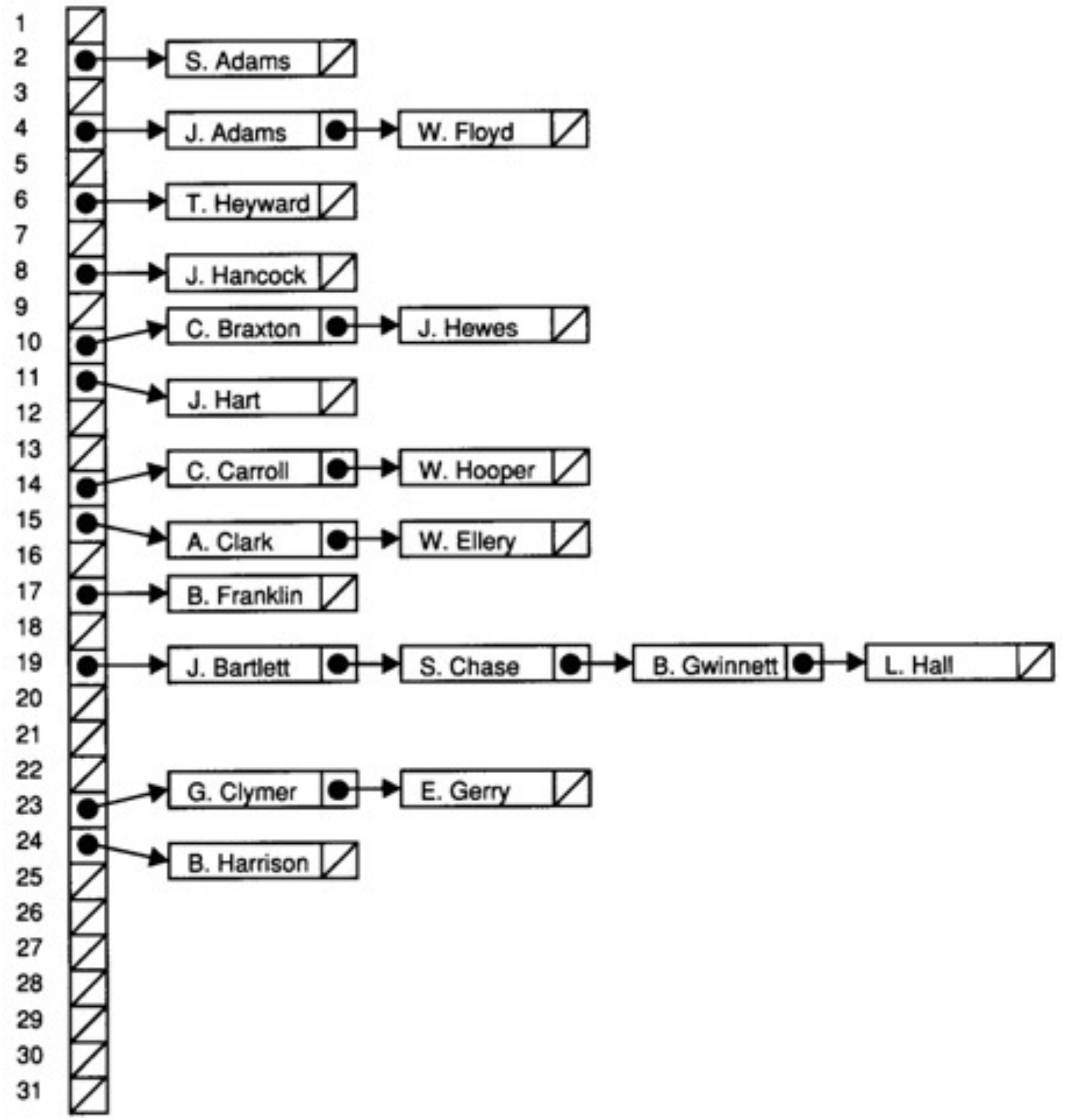
projects.cs50.net

last time


first
n
9
17
22
26
34
next

```
typedef struct node
{
    int n;
    struct node* next;
}
node;
```


table[0]
table[1]
table[2]
table[3]
table[4]
table[5]
table[6]
table[n-1]


1
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30
31
S. Adams
J. Adams
W. Floyd
T. Heyward
J. Hancock
C. Braxton
J. Hewes
J. Hart
C. Carroll
W. Hooper
A. Clark
W. Ellery
B. Franklin
J. Bartlett
S. Chase
B. Gwinnett
L. Hall
G. Clymer
E. Gerry
B. Harrison

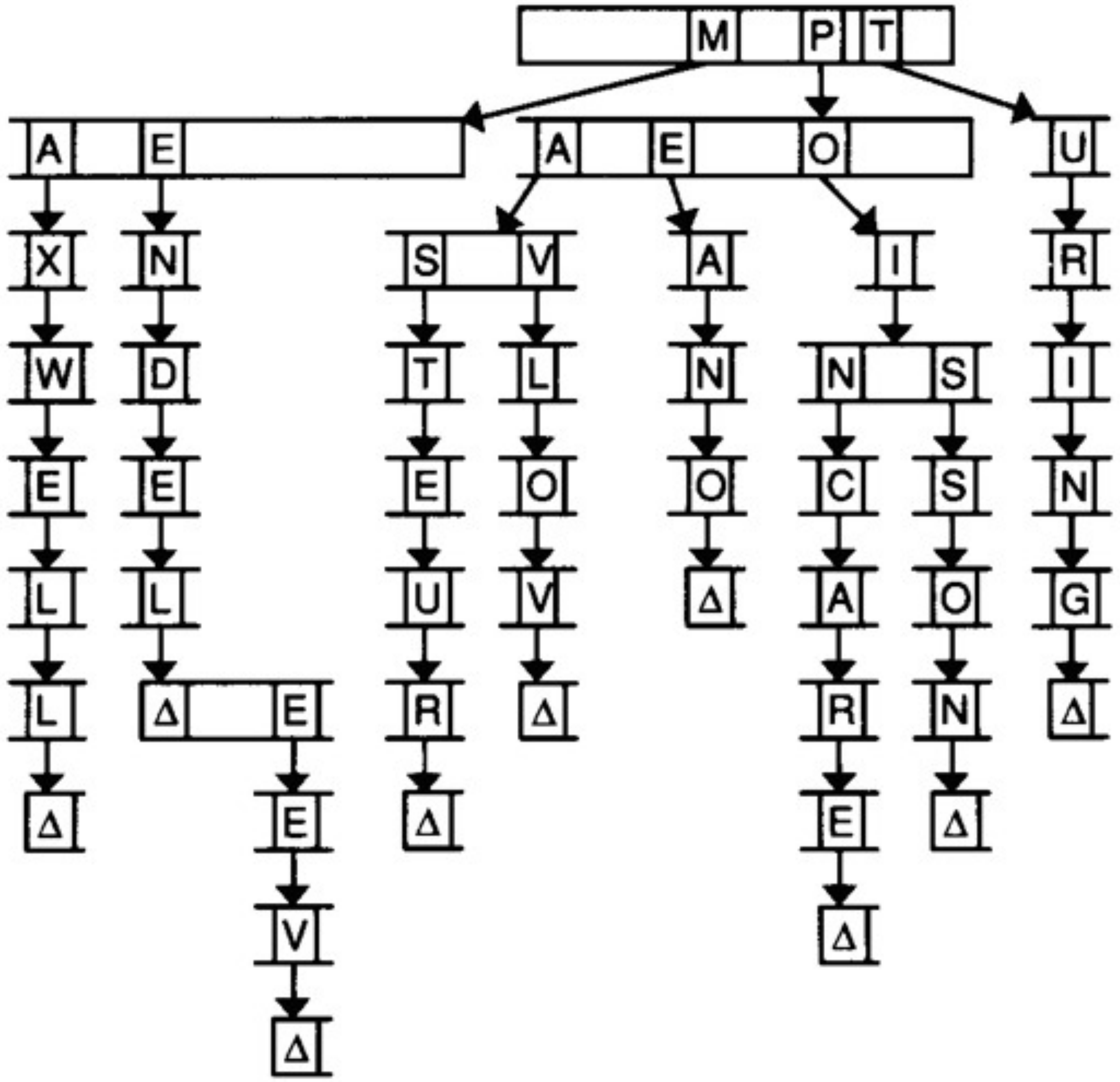

Figure from Lewis and Denenberg's Data Structures & Their Algorithms.

stack

push, pop

stack

last in first out
(LIFO)

```
typedef struct
{
    int trays[CAPACITY];
    int size;
}
stack;
```

http://www.blogcdn.com/www.engadget.com/media/2008/05/iphone_line_1-1.jpg

queue

enqueue, dequeue

queue

first in first out
(FIFO)

```
typedef struct
{
    int numbers[CAPACITY];
    int front;
    int size;
}
queue;
```

tree

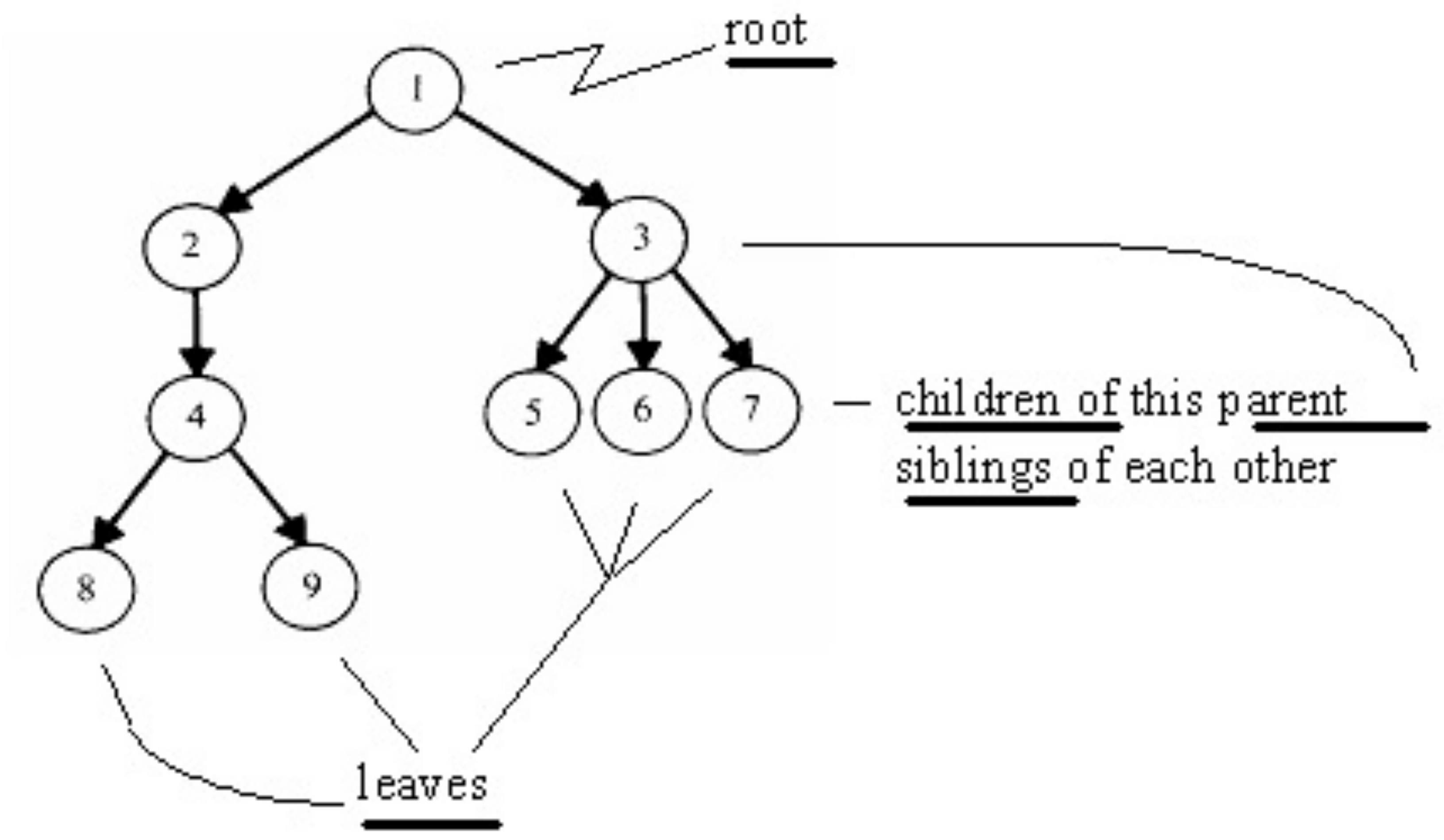

Figure by Larry Nyhoff.

```
typedef struct node
{
    int n;
    struct node* left;
    struct node* right;
}
node;
```

binary search tree

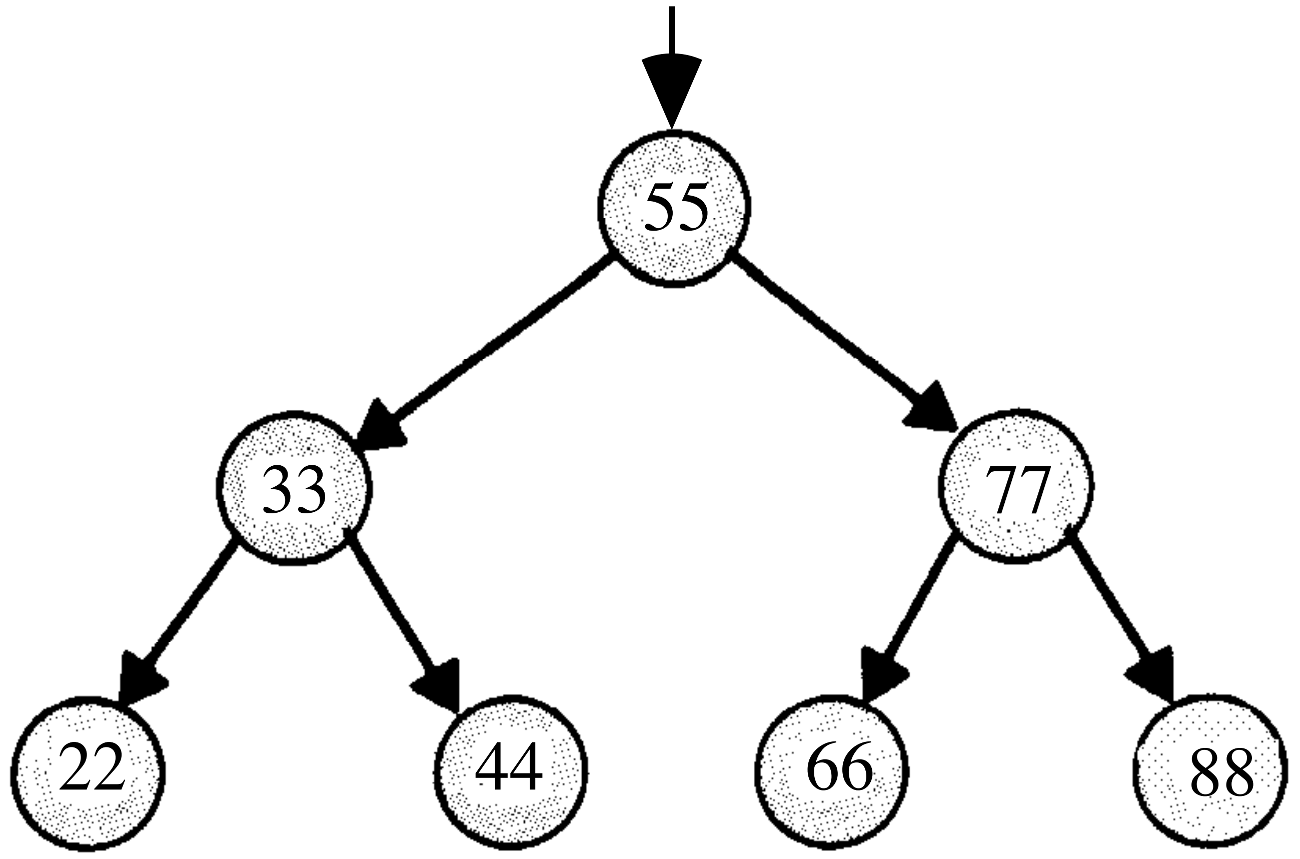

Figure from http://cs.calvin.edu/books/c++/ds/1e/.

```
bool search(int n, node* tree)
{
    if (tree == NULL)
    {
        return false;
    }
    else if (n < tree->n)
    {
        return search(n, tree->left);
    }
    else if (n > tree->n)
    {
        return search(n, tree->right);
    }
    else
    {
        return true;
    }
}
```

HTML

http://en.wikipedia.org/w/index.php?title=File:HTML5-logo.svg&page=1

```
<!DOCTYPE html>

<html>
    <head>
        <title>hello, world</title>
    </head>
    <body>
        hello, world
    </body>
</html>
```

to be continued...