Computer Science 50

Introduction to Computer Science I

Harvard College

Week 12

David J. Malan
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Respondent #51

There should be an end of the year cs party.

And thanks for the candy canes!

Respondent #137

Great class, but it chewed up my life and spit it back out. :)

Respondent #29

Buff druids.

Respondent #94

I like this course.

Please stop asking for survey responses.

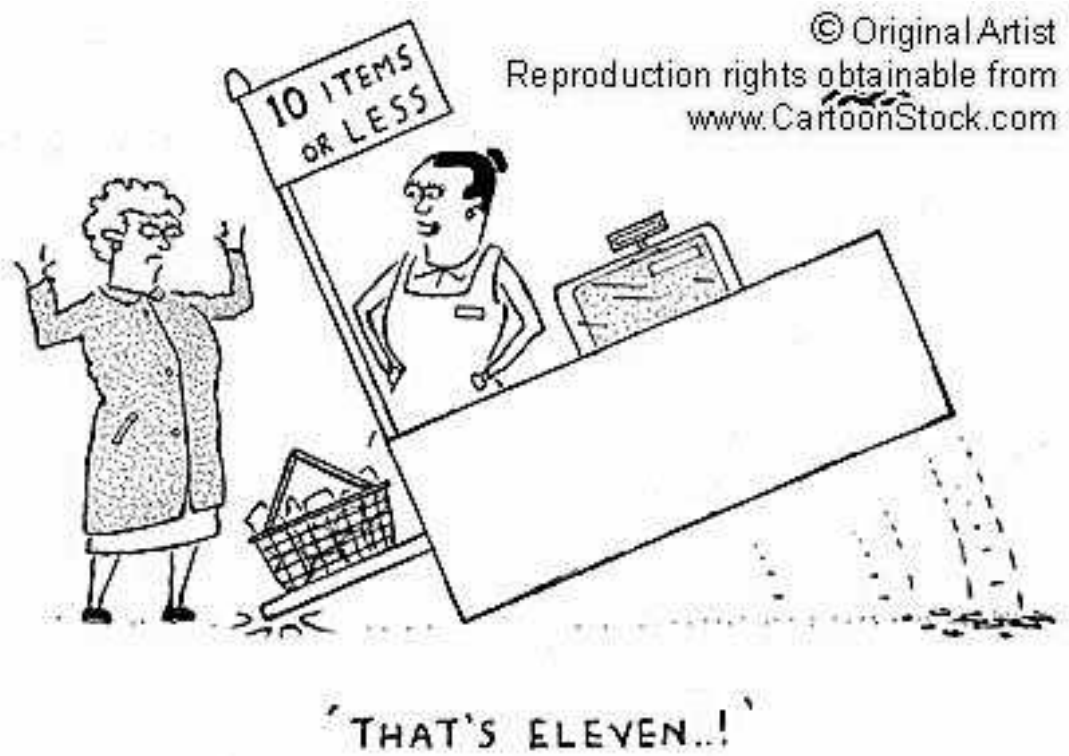
When do you start problem sets?

12. When do you generally start working for real on a problem set (i.e., not just read but start working on it)?

	Response Percent
Friday night (same day it's released)	3.3%
Saturday	9.6%
Sunday	10.7%
Monday	10.7%
Tuesday	22.1%
Wednesday	**24.7%**
Thursday	16.6%
Friday morning (same day it's due)	2.2%

Fall 2008

OHs



Fall 2008

Sections

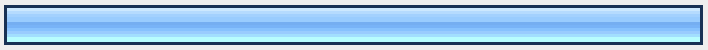
I'm among "those less comfortable"	
I'm among "those more comfortable"	
I'm somewhere in between	

Image from http://members.memlane.com/gromboug/P16MvSig.htm.

Fall 2007

Teaching Staff

Fall 2007

Production Crew

Respondent #48

I think it's funny that you're trying to get us all to minor in CS. :D

Natural Sciences 110

“The entrance of Natural Sciences 110, an introductory computer course, into the top ten at sixth position reflects a new interest in computer technology.”

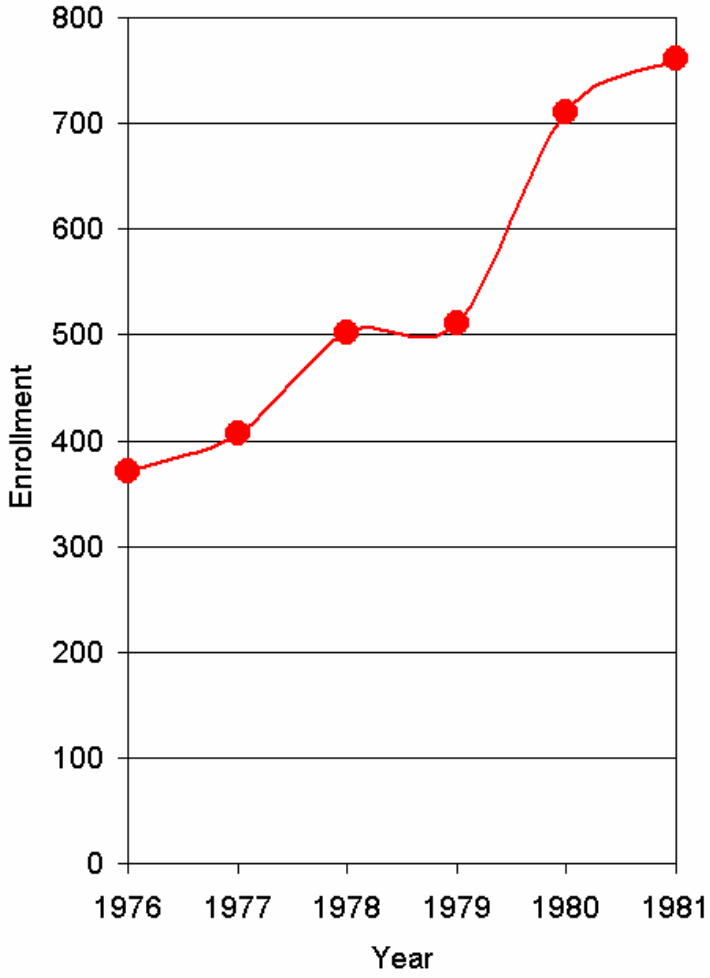
The Harvard Crimson, 1969

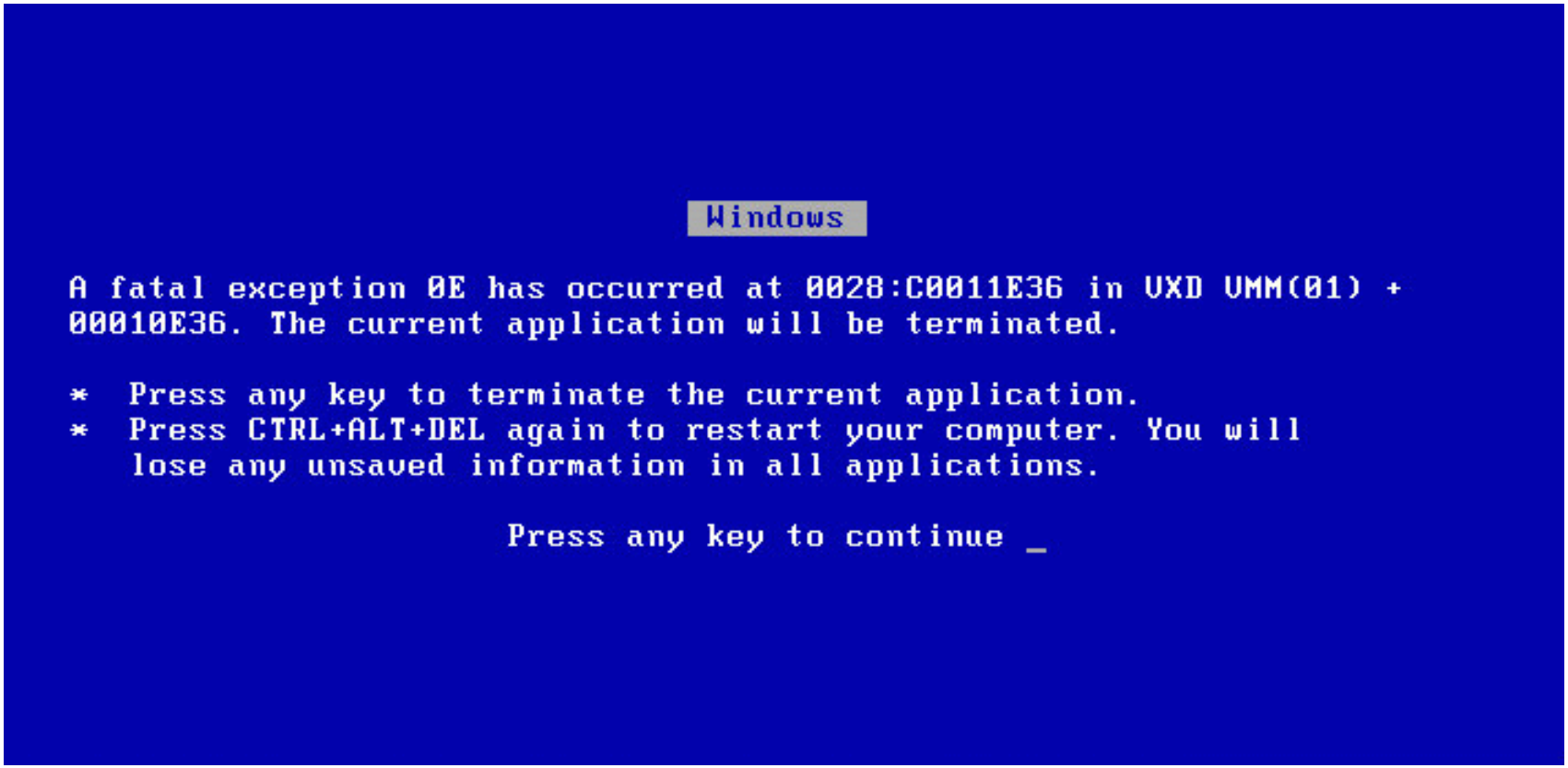
Natural Sciences 110

“Students must sign up at least a day in advance for the single hour of computer time that they are allowed each day.”

The Harvard Crimson, 1980

Natural Sciences 110





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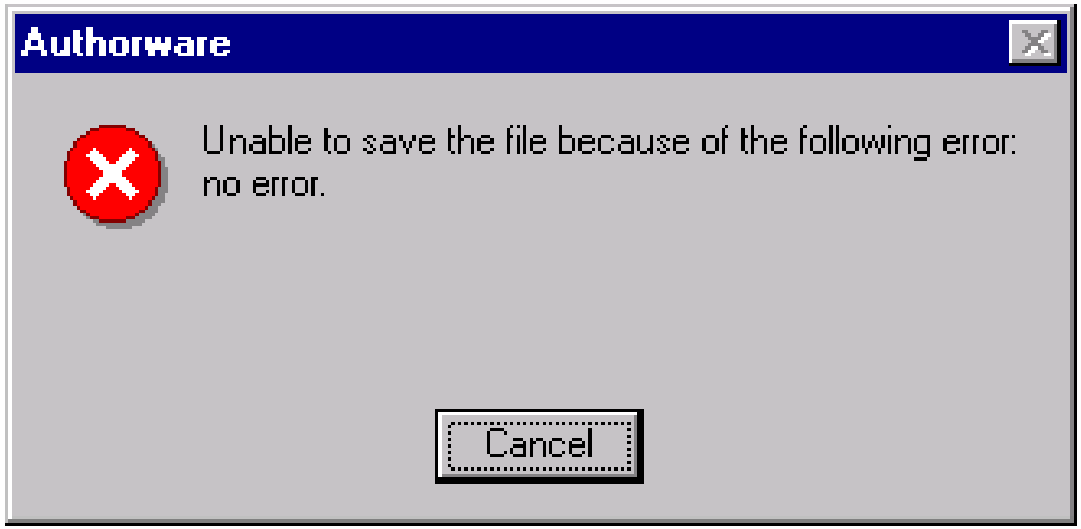

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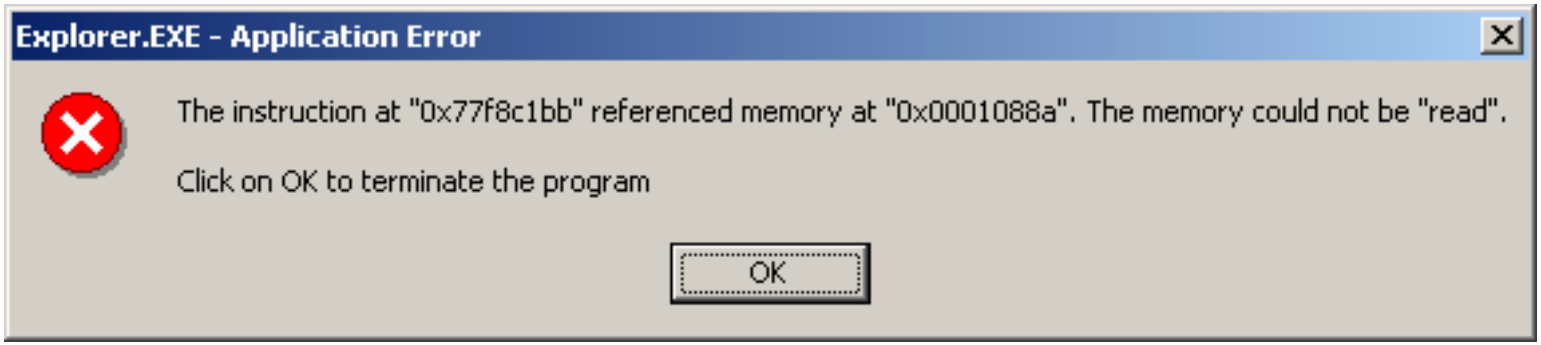

Image from http://www-stu.cai.cam.ac.uk/~cjr43/errors/stupid.html.

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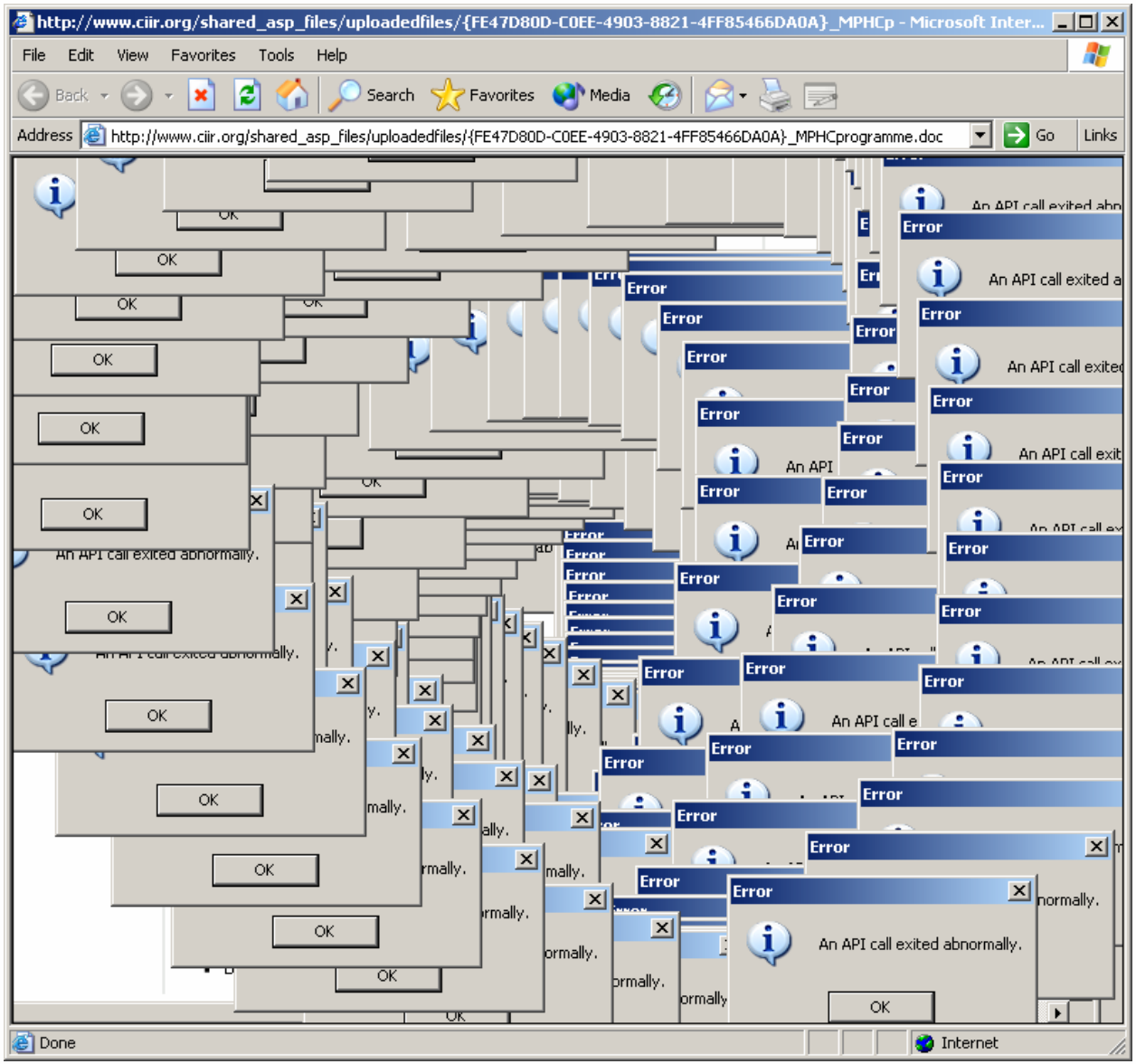


Image from http://www-stu.cai.cam.ac.uk/~cjr43/errors/ie.html.

Fall 2007

Week 0

Introduction. Bits. Binary. ASCII. Programming. Algorithms. Scratch. Statements. Boolean expressions. Conditions. Loops. Variables. Threads. Events. C.

Fall 2007

Week 1

C, continued. Source code. Compilers. Object code. SSH. SFTP. GCC. Functions. Comments. Standard output. Arithmetic operators. Precedence. Associativity. Local variables. Types. Casting. Standard input. Libraries. Boolean expressions, continued. Conditions, continued. Loops, continued.

```
#include <stdio.h>

int
main(int argc, char * argv[])
{
    printf("hello, world\n");
}
```

Fall 2007

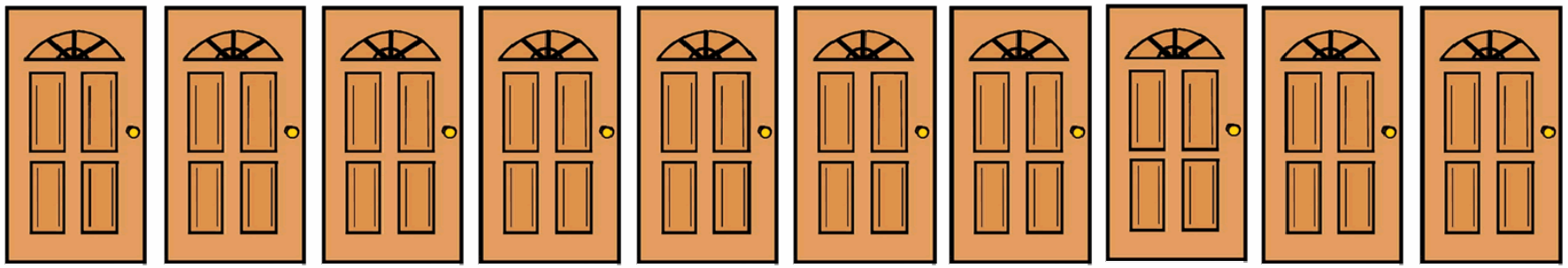
Week 2

Functions, continued. Global variables. Parameters. Return Values. Stack. Frames. Scope. Arrays. Strings. Command-line arguments. Cryptography.

Fall 2007

Week 3

Linear search. Binary search. Asymptotic notation.
Recursion. Bubble sort. Selection sort. Merge sort.



Fall 2007

Week 4

Greedy algorithms. Exhaustive searches. Dynamic programming. Memoization. Debugging software. Designing software.

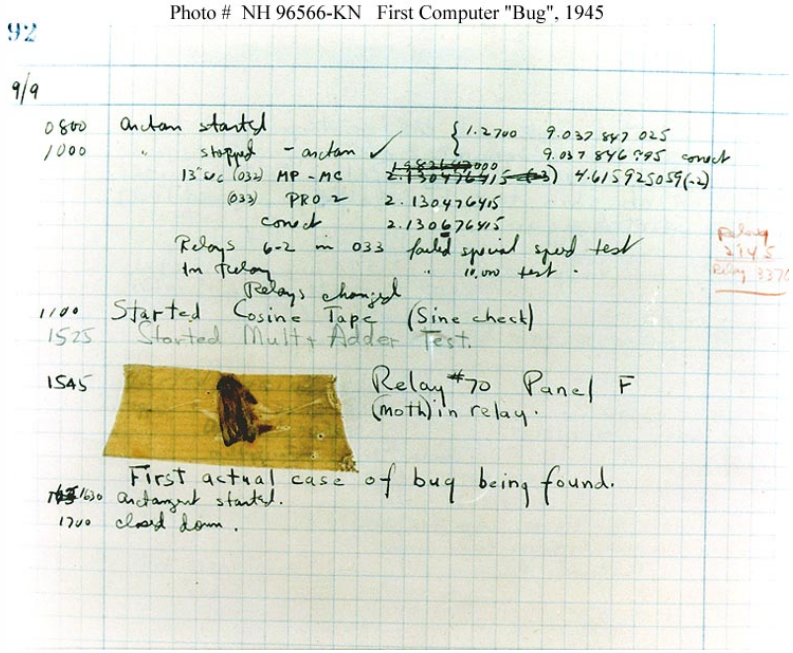
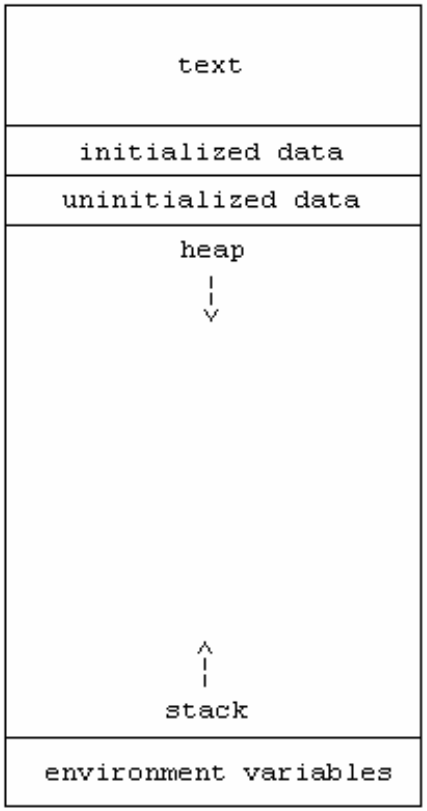


Image from http://www.history.navy.mil/.

Fall 2007

Week 5

Structures. Dynamic memory allocation. Pointers. Heap. Digital forensics. File I/O.



Fall 2007

Week 6

Linked lists. Hash tables.

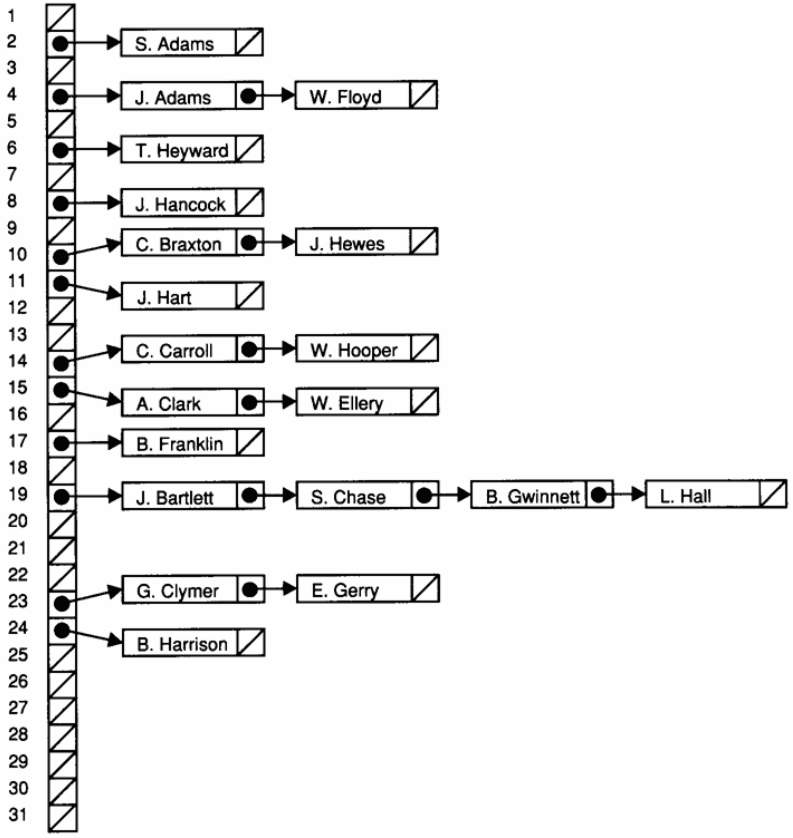


Image from *Data Structures & Their Algorithms.*

Fall 2007

Week 7

Binary search trees. Tries. Heaps. Heapsort.

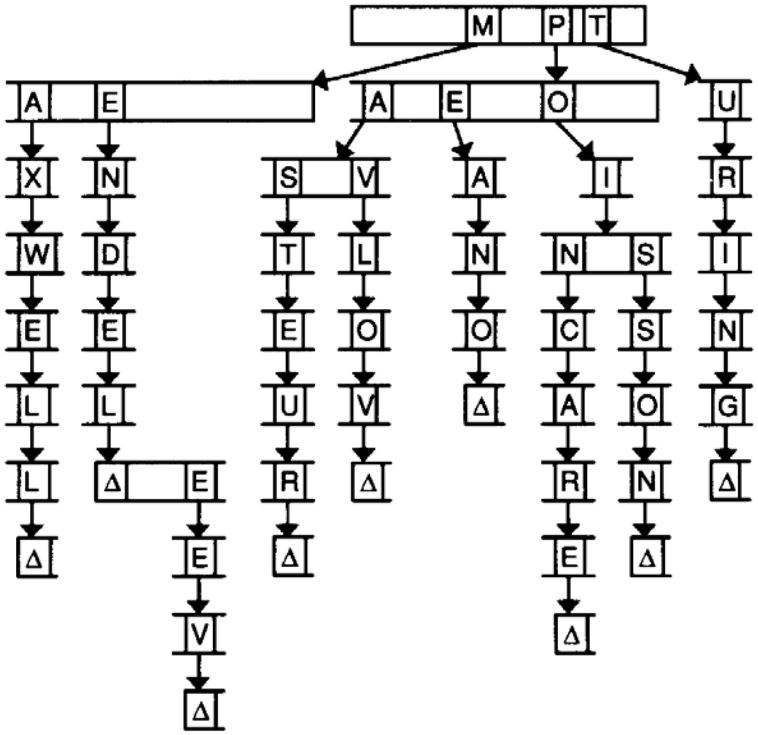


Image from *Data Structures & Their Algorithms.*

Fall 2007

Week 8

Huffman coding. Preprocessing. Compiling.
Assembling. Linking. CPUs. Ant-8.

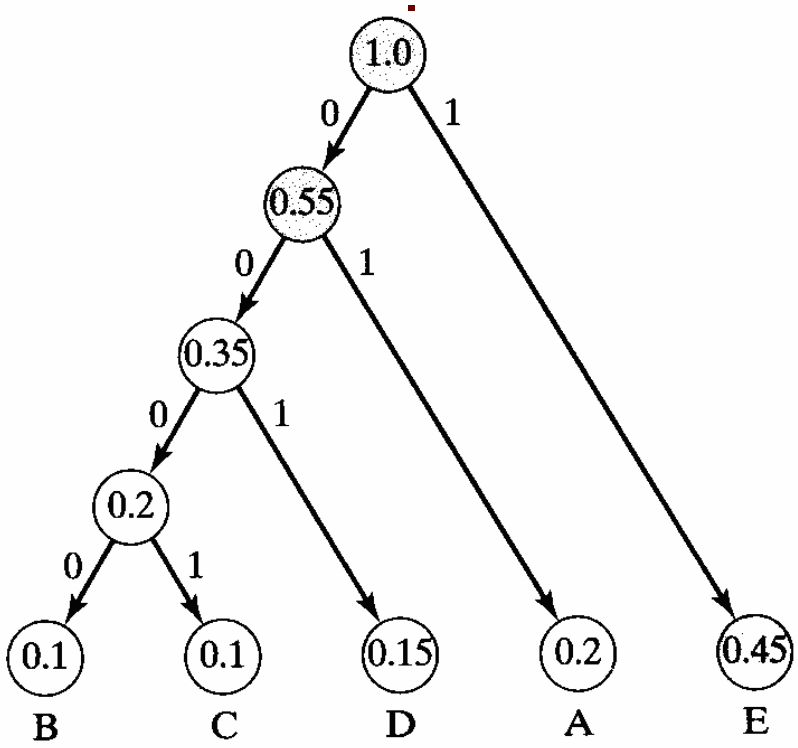
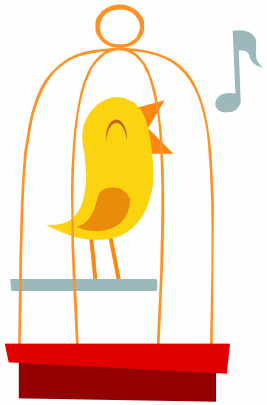


Image by Larry Nyhoff.

Fall 2007

Week 9

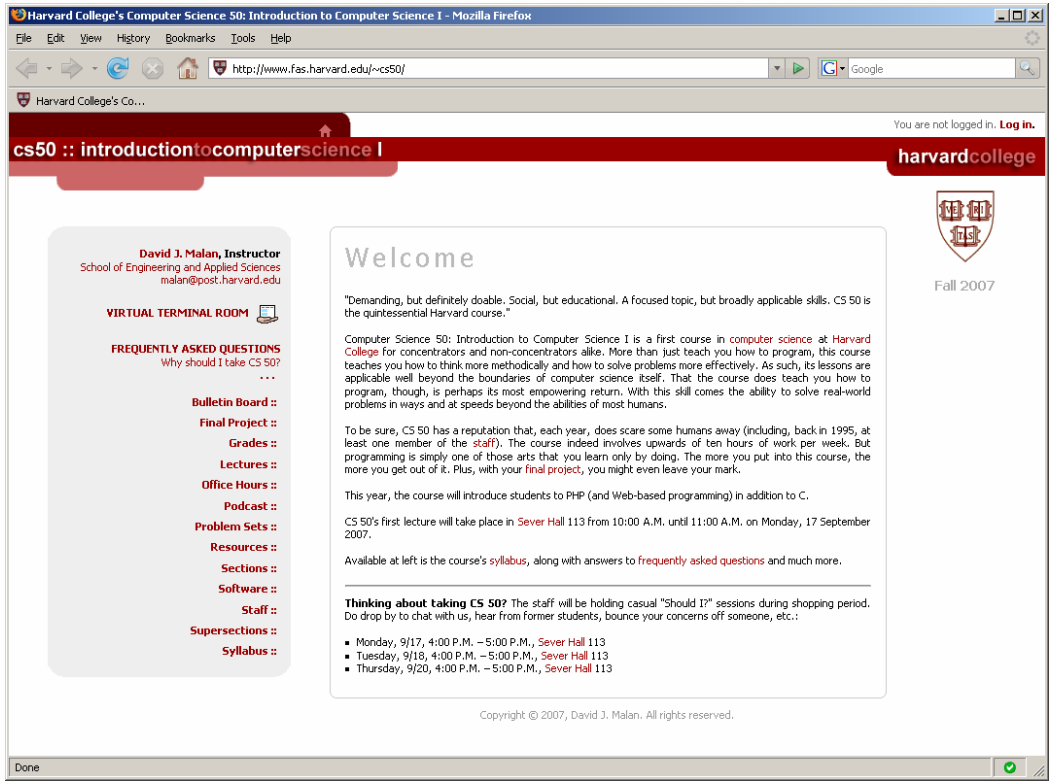
Writing secure C code.
Buffer overruns. Dangerous functions.



Fall 2007

Week 10

TCP/IP. HTTP. XHTML. PHP. SQL.



Fall 2007

Week 11

Designing Web-based software. Cybersecurity.
Sneak preview of CS 51.

Fall 2007

Week 12

Respondent #3

I would like to see more phonebooks ripped apart.

Computer Science 50

Introduction to Computer Science I

Harvard College

Week 12

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