Computer Science 50
Introduction to Computer Science I

Harvard College

Week 4: Friday

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Change Making

Change Making
Greedy Algorithms

Stamping Envelopes

Stamping Envelopes
Exhaustive Searches


```
int howmany(postage p)
{
    ∀ denomination d
        determine # of stamps required for postage p - d
    return (minimum # found + 1)
}
```
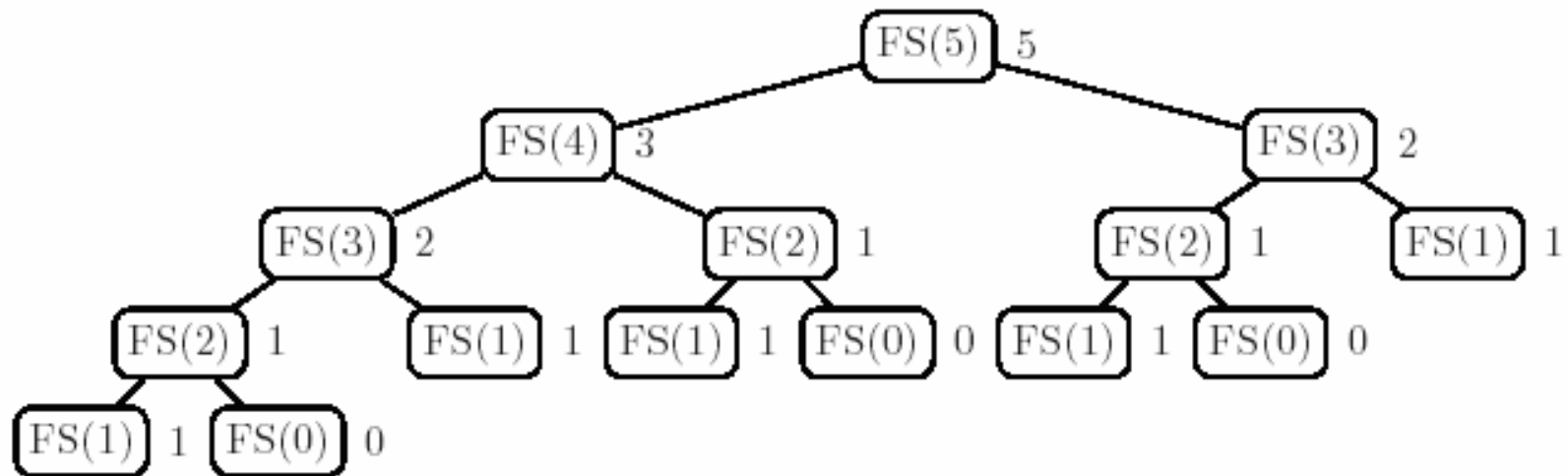
Fibonacci Sequence
Recursion

$$f(x) = \begin{cases} 0, \text{if } x = 0 \\ 1, \text{if } x = 1 \\ f(x-1) + f(x-2), \text{otherwise} \end{cases}$$
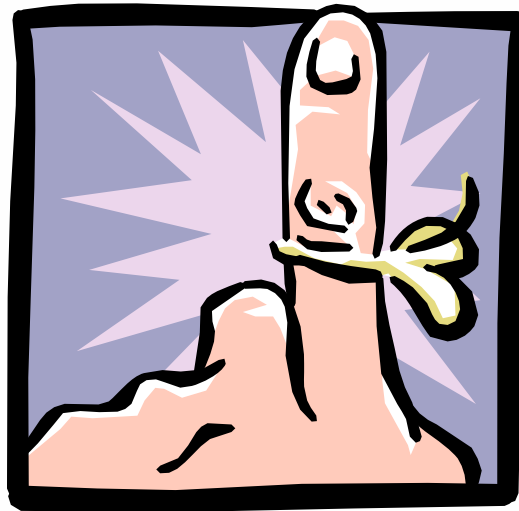
see
`fs1.c`

Fibonacci Sequence
Instrumentation

see
fs2.c

Figure from http://cs.wellesley.edu/~cs231/fall01/memoization.pdf.

Fibonacci Sequence
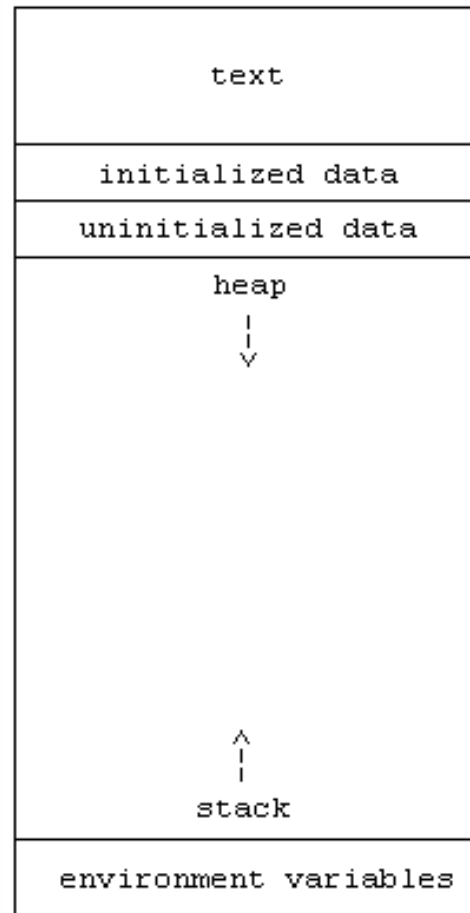## Dynamic Programming: Memoization

see
fs3.c

Grading Software

:: Correctness

:: Design

:: Style

Designing Software

MATT GROENING

Debugging Software

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