CSCI 136:
Data Structures
and
Advanced Programming

Lecture 7

Static, private, Vector

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Williams

Topics

- static variables
- accessibility modifiers
- Vector
- more about measuring time

Your to-dos

1. Lab 2, **due Tuesday 9/27 by 10pm**.
2. Quiz 2, **opens today, due Sat by noon**.
3. Read **before Mon**: Bailey, Ch 5.2 to end of Ch 5.

Announcements

- CS Colloquium this **Friday, Sept 23 @ 2:35pm in Wege Auditorium (TCL 123)**

Michael Greenberg (Stevens Institute of Tech)

Formal Support for the POSIX Shell

The POSIX shell is a widely deployed, powerful tool for managing computer systems. The shell is the expert's control panel, a necessary tool for configuring, compiling, installing, maintaining, and deploying systems. Even though it is powerful, critical infrastructure, the POSIX shell is maligned and misunderstood. Its power and its subtlety make for a dangerous combination.

How can we support the POSIX shell? I'll describe two recent lines of work---Smoosh, a formal, mechanized, executable small-step semantics for the POSIX shell---and ffs---a tool for helping users manipulate semi-structured data (like JSON and YAML) in the shell.

Study tip #2

Confusion is **not necessarily a bad thing**.

Good courses are **intentionally designed** to put you in this state.

Expect to have this feeling.

Study tip #2

Sometimes Confusion is a Good Thing
Tania Lombrozo
NPR, December 14, 2015

"Students who were confused … as reflected in inconsistent responses on subsequent questions … ultimately did better on a final test assessing whether they learned the key points from the lessons."

`https://www.npr.org/sections/13.7/2015/12/14/459651340/sometimes-confusion-is-a-good-thing`

Study tip #2

Sometimes Confusion is a Good Thing
Tania Lombrozo
NPR, December 14, 2015

"… [C]onfusion is itself a step toward learning — an experience that motivates the learner to reconcile an inconsistency or remedy some deficit. In this view, confusion isn't just a side effect of beneficial cognitive processes, but a beneficial process itself. … [T]here's evidence that experiencing difficulties in learning can sometimes be desirable, leading to deeper processing and better long-term memory."

`https://www.npr.org/sections/13.7/2015/12/14/459651340/sometimes-confusion-is-a-good-thing`

Study tip #2

Frustration = **confusion** + **time pressure**

Know that you **need time** to be confused and work through that confusion.

Learning feels inefficient.

Study tip #2

Confusion tells you something **valuable**:

It is a signal that you are
not confident in your knowledge.

Use this signal to **guide your study** (e.g.: **glossary**).

Static variable activity

Accessibility modifiers

Accessibility modifiers

An **accessibility modifier** is a mechanism **for controlling access to the internal state or methods of an object or class**. There are three accessibility keywords: public, private, and protected.

The **public** keyword means that a user **can access** the data or method without restriction.

The **private** keyword means that a user **cannot access** that data or method.

We will discuss **protected** when we talk about inheritance.

An implementation **can always access** its **own** fields.

(code)

What is a Vector?

(code)

Recap & Next Class

Today:

- Study tip #2
- static
- private/protected
- Vector

Next class:

- Time and space
- Recursion