CLOS, the Common Lisp Object System

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Getting Started with Common Lisp

1. Install Linux.

   ```
   http://aptosid.com
   ```
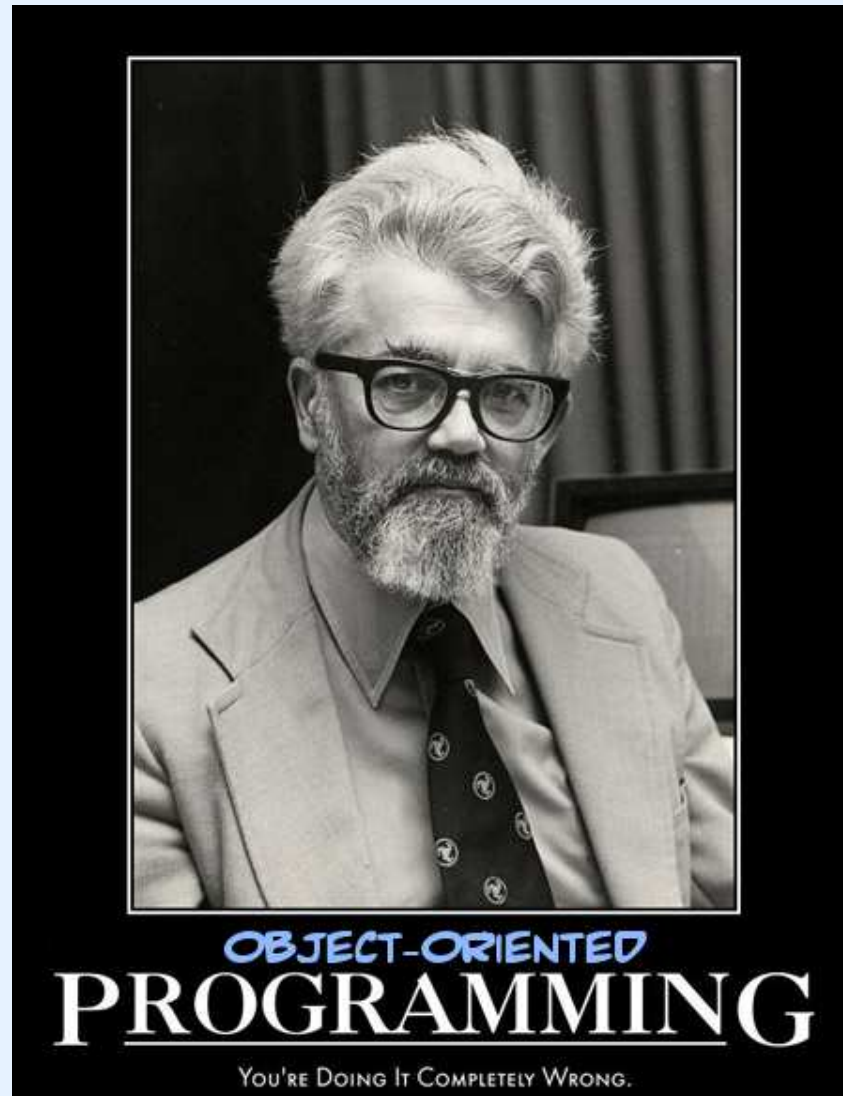
2. Install SBCL and some libraries.

   ```
   apt-get install sbcl{,-doc,-source} \
   cl-{asdf,cffi}
   ```

3. Install Emacs and SLIME *(Not strictly required.)*

   ```
   apt-get install emacs{,-goodies-el} cl-swank \
   cl-swank slime common-lisp-controller
   ```

Lisp $+$ OOP $>$ OOP $-$ Lisp

OBJECT-ORIENTED
PROGRAMMING
YOU'RE DOING IT COMPLETELY WRONG.

OOP isn't *The* Answer

OOP is a useful tool, but it isn't the final solution to all things programming. It won't solve world hunger, but it does solve a restricted subset of the problem. Other things that are sometimes useful tools, but aren't **the** answer:

1. FP,

2. Lack of side effects,

3. Unit tests/TDD/BDD,

4. Type systems,

5. Monads,

6. Your favorite thing in programming,

7. ~~Lisp.~~ *[Yes it is.]*

Nouns and Verbs

- Nouns are how our brain works with things.
  *The **cat** was asleep in the **hallway**.*

  ```
  cat[27].goToSleepInLocation(hallway[3]);
  ```

- Verbs are how our brain works with actions.
  *He **murdered** her in cold blood!*

  ```
  (murder-in-cold-blood the-man the-woman)
  ```

Other Fun Parts of Speech . . .

- Adjectives describe nouns.
  *The **big**, **old**, **yellow** house burned to the ground.*

  ```
  <house size="big" age="old" color="yellow"/>
  ```

- Pronouns *(anaphors)* are shortcuts for nouns.
  ***We** walked down the street to meet **him**.*

  ```
  (a?if him (person-to-meet?)  (go-to-meet him))
  ```

...Other Fun Parts of Speech

- Adverbs change verbs.
  *He **quickly** ran down the street.*

- Preposition

- Conjuction

- Interjection

Lisp $+$ OOP $>$ Lisp?

[Opinionated opinion:] Java or C++ style OOP doesn't help if you already have Lisp, and probably hurts, but the CLOS does help if you have the right sort of problem.

- Lisp is good at modeling computation.

- Functional programming is good at modeling verbs,

- Object-oriented programming is good at modeling nouns.

- CLOS allows FP for verbs and OOP for nouns to interact easily, with neither being the ***King Of All The Words***.

OOP: How Classes See Their Methods

FP: How Functions See Their Data

Questions?