



LAMBDA LOUNGE

## **CLOS, the Common Lisp Object System**

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## Getting Started with Common Lisp

1. Install Linux.

`http://aptosid.com`

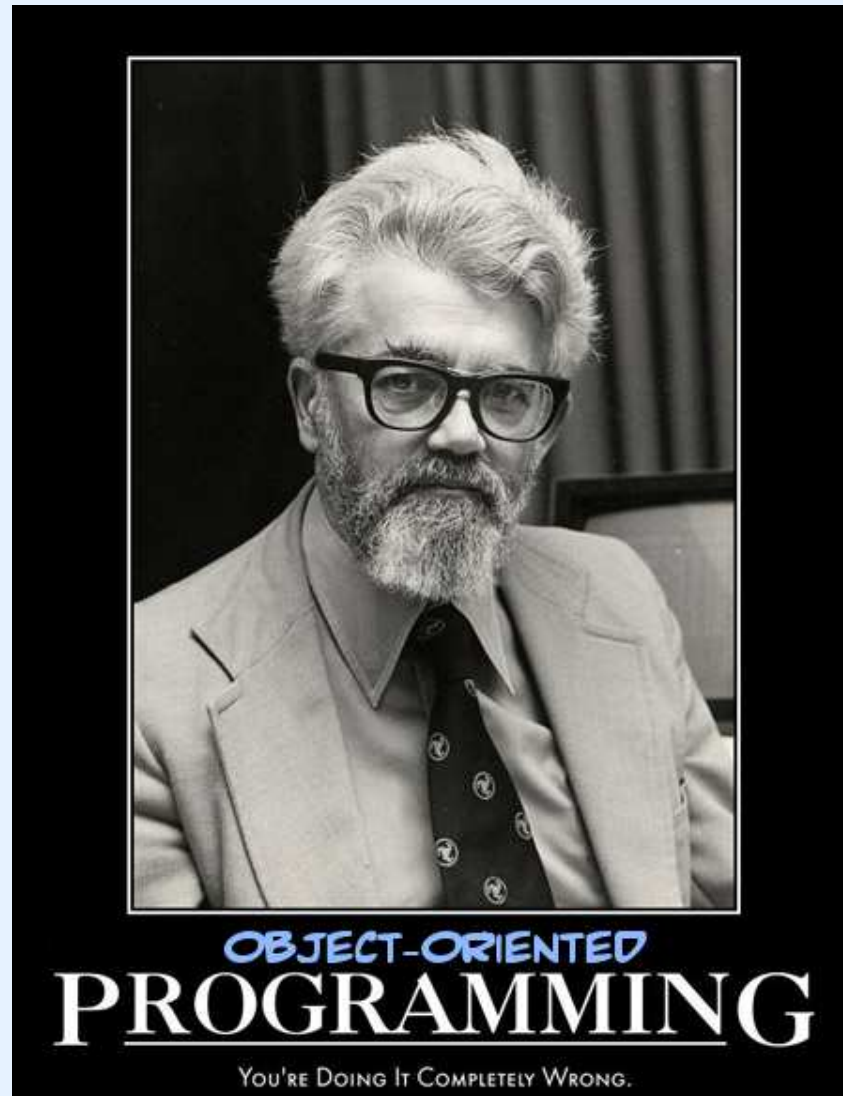
2. Install SBCL and some libraries.

```
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**



## 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
- Conjunction
- 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 Data**

***Questions?***