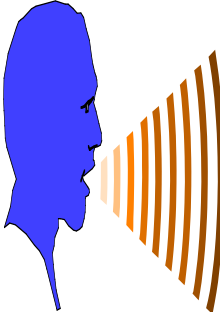



EEL5840: Elements of Machine Intelligence

Announcements

Rocko




- Announcements:
 - > None
- Today's Handouts in WWW:
 - > Outline Class 12
 - > Tentative First Exam Date
 - Thur. Oct. 13th in class
 - Thur. Oct. 20th in class
- Web Site
 - > www.mil.ufl.edu/eel5840
 - > Software and Notes
 - > XLISP Documentation



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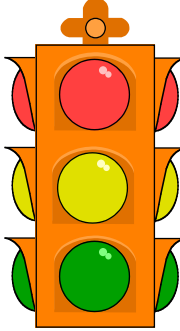


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Today's Menu

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- Finish LISP LAB 3
 - > Functional Arguments, *funargs*
 - > More on MAPPING Functions
 - > I/O Functions
 - > PROG
 - > LOOPing
 - > Association Lists



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- LAMBDA Expressions allow us to define anonymous procedures
The lambda expression is the actual mechanism that the LISP interpreter uses to "evaluate" dummy arguments in a procedure. This is what XLISP returns when you use FUNCTION-LAMBDA-EXPRESSION. Suppose we want to put quotes around all the elements of an input list.

```
(defun put-quotes(lis) (mapcar #'qhelp lis))
(defun qhelp(sex) (list (quote quote) sex))
> (put-quotes '(this is a test))
((QUOTE THIS) (QUOTE IS) (QUOTE A) (QUOTE TEST))
```

But if you begin to run out of names for your "helper" functions (especially if they are only used once in a program) a more elegant solution is given by:

```
(defun put-quotes(lis)
  (mapcar #'(lambda(sex) (list (quote quote) sex)) lis ))
```

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- Lambda expressions are the actual execution mechanism for user-defined functions in XLISP. For example, (add1 2) or typing ((lambda (x) (+ 1 x)) 2) yield the same result, a 3 is returned.

```
> (defun add1 (x) (+ 1 x))
ADD1
> (add1 2)
3
(add1 (+ 1 2))
4
>((lambda (x) (+ 1 x)) 2)
3
((lambda (x) (+ 1 x)) (+ 1 2))
4
((lambda (x y) (+ x y)) 2 3)
5
```

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See LISP Notes 3
The End!