



EEL5840: Elements of Machine Intelligence

Subjugator 2006

Announcements

- Today's handouts on www:
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 - > Software and Notes
 - > XLISP Documentation

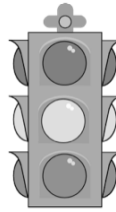
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Today's Menu

- LISP
 - > More on User-Defined Functions
 - DEFUN
 - COND
 - FUNCTION-LAMBDA-EXPRESSION
 - > LISP Chapter 5 Procedure Abstraction & Recursion



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from LISP Lab 1

Predicate Functions:

<code>(atom sex)</code>	t if sex is an atom
<code>(null sex)</code>	t if sex is nil or ()
<code>(eq sex1 sex2)</code>	t if sex1==sex2 (identical)
<code>(equal sex1 sex2)</code>	t if sex1=sex2
<code>(zerop sex1)</code>	t if sex=0
<code>(numberp sex)</code>	t if sex is a number
<code>(symbolp sex)</code>	t if sex is a symbolic atom
<code>(listp sex)</code>	t if sex is a list
<code>(member sex lis)</code>	nil if sex is not a member of lis

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LISP Lab 1


LIST Functions:

<code>(car lis)</code>	returns the 1st sex of list "lis", same as <i>first</i>
<code>(cdr lis)</code>	returns the list "lis" with the 1 st sex removed, same as <i>rest</i>
<code>(car (cdr lis))</code>	same as <i>second</i> , i.e., 2 nd sex of the list "lis"
<code>(list sex1 sex2)</code>	returns the list (sex1 sex2)
<code>(cons sex1 lis)</code>	makes sex1 the 1 st element of the list "lis"
<code>(append lis1 lis2)</code>	a new list with all the elements of lis1 followed by all the elements of lis2

`(defun fname (argument-list) <(forms)>)`

`(pprint (function-lambda-expression #'fname))`

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LISP Lab 2

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Predicate Functions:

<i>(integerp sex)</i>	t if sex is an integer
<i>(floatp sex)</i>	t if sex is a floating point number
<i>(and sex1 sex2)</i>	t if sex1 and sex2 are both true
<i>(or sex1 sex2)</i>	t if sex1 or sex2 or both are true
<i>(not pred)</i>	nil if pred=t or non-nil, t if pred=nil

User-Defined Functions:


(cond <(clause₁) >...<(clause_n)>) returns the evaluated action from the 1st non-nil predicate or nil where (clause_i) ⇒ (predicate-form action-form)

(defun fname (argument-list) <(forms)>)

(pprint (function-lambda-expression #' fname))

Recursive Function Definitions

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See LISP Notes 1 The End!

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