

## CLASS 5 OUTLINE

### I. Tutorial Introduction to LISP

XLISP-PLUS version 3.04  
Portions Copyright (c) 1988, by David Betz.  
Modified by Thomas Almy and others.  
XLISP-STAT Release 3.52.17 (Beta).  
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```
> x
Error: The variable X is unbound.
> (setf x 1)
1
> x
1
> (+ 1 2)
3
> (+ 1 1.2)
2.2
> (/ 1 3)
0.3333333333333333
> (setf dinner steak potato bread beer onion)
Error: The variable STEAK is unbound.
Happened in: #<FSubr-PROGN: #732e8c>
> (quote x)
X
> (setf dinner (quote steak))
STEAK
> dinner
STEAK
> (setf dinner steak)
Error: The variable STEAK is unbound.
Happened in: #<Subr-TOP-LEVEL-LOOP: #75242c>
> (setf dinner 'steak)
STEAK
> (setf dinner '(steak potato bread onion beer))
(STEAK POTATO BREAD ONION BEER)
> dinner
(STEAK POTATO BREAD ONION BEER)
> (first dinner)
STEAK
> (second dinner)
POTATO
> (last dinner)
(BEER)
> (car dinner)
STEAK
> (cdr dinner)
(POTATO BREAD ONION BEER)
> (car (cdr dinner))
POTATO
> (cadr dinner)
POTATO
> dinner
(STEAK POTATO BREAD ONION BEER)
> (cons 'cheese-fries dinner)
(CHEESE-FRIES STEAK POTATO BREAD ONION BEER)
>
```

## ***II. LISP Functions***

LIST Manipulations-

**car, cdr, cons, append, list, last, reverse, subst, length, add1, etc.**

Predicate Functions-

**atom, null, equal, eq, and, or, not, eqn, zerop, numberp, listp, etc.**

## ***III. User-Defined Functions - The way you program in LISP***

**defun**

**cond**

**function-lambda-expression**

## ***IV. Recursive Functions - Introduction***

## ***V. Recursive Function Definitions - Examples***

See LISP Notes 1