**Languages using Prefix or Postfix Only**

**Prefix: LISP**

[LISP](http://en.wikipedia.org/wiki/LISP%20programming%20language) (1958) =

* **LIS**t **P**rocessing
* **L**ost **I**n **S**ingle **P**arentheses

50th anniversary of LISP

* recursive definitions
* lists as data structure for symbolic processing
* widely used in AI
* introduced automated memory management
  + garbage collection - 40 years before it entered mainstream

(defun factorial (n)

(if (<= n 1)

1

(\* n (factorial (- n 1)))))

[primes.el](http://lara.epfl.ch/w/cc09:primes.el)

**Postfix: PostScript**

[PostScript](http://en.wikipedia.org/wiki/PostScript%20programming%20language) (1982)

An example from [The Blue Book](http://www.science.uva.nl/%7Erobbert/ps/bluebook/)

%!PS-Adobe-2.0

%%Title: Blue Book Program 1, on page 133

%%Creator: Adobe Systems Incorporated

%%CreationDate: Thu Dec 28 13:14:59 PST 1989

%%EndComments

/inch {72 mul} def

/wedge

{ newpath

0 0 moveto

1 0 translate

15 rotate

0 15 sin translate

0 0 15 sin -90 90 arc

closepath

} def

gsave

3.75 inch 7.25 inch translate

1 inch 1 inch scale

wedge 0.02 setlinewidth stroke

grestore

gsave

4.25 inch 4.25 inch translate

1.75 inch 1.75 inch scale

0.02 setlinewidth

1 1 12

{ 12 div setgray

gsave

wedge

gsave fill grestore

0 setgray stroke

grestore

30 rotate

} for

grestore

showpage

Save the above program as .ps file and run e.g. ‘gv’ on it

* [result of converting to pdf](http://lara.epfl.ch/w/_media/compilation:repeatedshapes.pdf?id=cc09%3Alanguages_using_prefix_or_postfix_only&cache=cache)

Other examples: [Program 11](http://www.science.uva.nl/%7Erobbert/ps/bluebook/program_11.html) [Program 14](http://www.science.uva.nl/%7Erobbert/ps/bluebook/program_14.html)