

let expression
is equivalent to
calling a function

let expression

can be translated into

calling a function

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preprocess

new idea

preprocessing a feature away

before and after

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new idea

preprocessing a feature away

- users get the **convenience** of using the feature

new idea

preprocessing a feature away

- users get the **convenience** of using the feature
- compilers and other tools **don't need to know about it**

syntactic abstractions

- many conditional forms
- procedures that take more than one argument
- local variables
- local functions
- logical connectives

syntactic abstractions

- many conditional forms
- procedures that take more than one argument
- local variables
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- logical connectives
- **variable names** ??!

The **region** of
a variable declaration is:

*the part of a program where
that variable declaration is seen*

The term **scope** is used as a synonym,
though it is different.

a language has
static scope

if every variable's region can be
determined by examining the code
(*statically*)

block structured

block structured

hole

block structured

hole

shadow

**Even variable names
are syntactic sugar.**

```
multiplyAndScale: t1 and: t2
  "multiplies the given numbers
  and returns the result times 4"

  | t3 |
  t3 := t1 * t2.
  ^t3 * 4
```