Compilers

Formal Languages
**Def.** Let $\Sigma$ be a set of characters (an *alphabet*). A *language over* $\Sigma$ is a set of strings of characters drawn from $\Sigma$. 
Formal Languages

- Alphabet = English characters
- Language = English sentences

- Alphabet = ASCII
- Language = C programs
Meaning function $L$ maps syntax to semantics
Why use a meaning function?

- Makes clear what is syntax, what is semantics.

- Allows us to consider notation as a separate issue.

- Because expressions and meanings are not 1-1.
Formal Languages
• Meaning is many to one
  – Never one to many!