Compilers

Formal Languages

Alex Aiken

Def. Let Σ be a set of characters (an *alphabet*).

A *language over* Σ is a set of strings of characters drawn from Σ

Alex Aiken

- Alphabet = English characters

- Language = English sentences

- Alphabet = ASCII

- Language = C programs

Meaning function *L* maps syntax to semantics

Formal Languages

Alex Aiken

- 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

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Formal Languages

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- Meaning is many to one
  - Never one to many!