

Formal Languages and Linguistics

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Previously on “Formal Languages”

Mathematical concepts:

- Alphabet

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- Words
concatenation

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- Intensionally
 - Outcome of a series of set operations

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 - Outcome of a series of set operations regular expressions

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 - By means of a formal grammar

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 - Outcome of a series of set operations regular expressions
 - By means of a formal grammar
 - By means of a (Turing) machine
 - ...

Formal grammars

- rewriting systems
- rule:

$$\alpha\beta\gamma \longrightarrow \alpha\beta'\gamma$$

iff

the production rule $\beta \rightarrow \beta'$ is in the grammar

where $\alpha, \beta, \gamma, \beta'$ are arbitrary sequences of terminal and non terminal letters.

- engendered language : set of all (terminal) words derived from the axiom

$$\mathcal{G} : E \rightarrow E + E ; E \rightarrow 1 \mid 2 \mid 3$$

$$L_{\mathcal{G}} = \{1; 2; 3; 1 + 1; 1 + 2; 1 + 1 + 1; \dots\}$$