Programming Language Paradigms Lecture 2

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1 Reasons for Studying Concepts of Programming

- Increased capacity to express ideas
- Better understanding of implementation
- Increased ability to learn a new language
- Better use of languages that are already known
- Advancement of computing power

Programming Domains

- Scientific Applications
- Business Applications
- Artificial Intelligence
- Web Software

Language Evaluation Criteria

- Readability
- Writability
- Reliability
- Cost
- Simplicity
- **Feature Multiplicity:** more than one way to utilize a Feature
- **Operator Overload:** operators can have more than one meaning

Orthogonality

- set of primitive constructs
- a number of ways to combine them
- every combination is legal or meaningful
- lack of orthoginality means exceptions
- related to simplicity
- mix and match operators and variables to produce an output. being highly orthogonal means complexity, while keeping everything legal and meaningful

Data Types

- are the types of data in the language adequate for the language's use case?

- are the types of data useful to the programmer?

Syntax Design

- is the language writable? does it suck in the syntax department?

- does it suck to write?