The future of languages includes logic programming

Conclusion for this course:

- That is all!
- My guess on where languages will be going: languages that combine:
  - Multiparadigm (functional, logical, imperative, scripting)
  - High-level data structures
  - With: speed, simplicity (dynamic weakly typed like Prolog, python, SML; input and output parameters)
  - JavaScript frameworks, node.js, Google Go, Swift, and what else?
  - More and more languages every day!!! What should we learn? All!
    - Youtube is implemented with Python,
    - IBM Watson uses Prolog,
    - Microsoft F# is a functional programming language, etc.
The future of languages

- **Scripting-style:**
  - **Speed:** Trade almost everything for developer productivity
  - **Economy of Expression**
  - **Lack of Declarations**
  - **Simple rules**
  - **Flexible dynamic typing**
  - **Access to the OS**
  - **Sophisticated string processing**
  - **High-level data structures:** Maps, Lists, Tuples, Sets.
  - **Batch and Interactive**
  - **Open and Portable**
  - **Single Canonical Implementation**
  - **Interpreted:** Fast to start
  - **Easily extended**
  - **Easily embedded**
Future is here
Future is here

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- Coroutines
- Java on GPUs (Sumatra)
- Meta-Object Protocol
- Multi-Tenancy
- Reification
- Self-Tuning JVM
- JNI 2.0
- Java 9 ... and beyond
- Modular Platform (Jigsaw)
- More and More Ports
- Tail Calls
- Memory-Efficient Data Structures

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The future of languages

• I'm hoping that this course prepared you for the change the future will bring in programming languages and logic

• Thank you!