Review of Topics so far

Carl Friedrich Bolz, David Schneider

Dynamische Programmiersprachen

Heinrich-Heine-Universität Düsseldorf

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What is a Dynamic Language?

What is a Dynamic Language?

- dynamic typing
- reflection
- "late-bound everything"

also it is often:

What is a Dynamic Language? (2)

also it is often:

- interactive
- GC
- object oriented

What is an Object?

What is an Object?

State + Behaviour

Principles of Class-Based OO

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1. Everything is an Object
2. Every Object has a type

How do Message Sends Work?

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- *consist of two steps, lookup and call*
- *implementation of a message is called "method"*

What are Possible Lookup Strategies?

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two (independent) distinctions:

- *class vs. prototype-based*
- *single vs. multiple inheritance*

What are Attribute-Based Programming Languages?

What are Attribute-Based Programming Languages?

- ▶ the steps lookup and call exist separately in the language
- ▶ the lookup of data attributes must be done as part of lookup

What are Special Methods?

What are Special Methods?

- special methods are used to customize the behaviour of objects
- are needed in a language of non-uniform syntax

What are Generators?

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- provide a convenient way to implement an iterator
- break normal stack-discipline

Implementation of Dynamic Languages

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- *Compiler vs. Interpreter*

Implementation of Dynamic Languages

- ▶ *Compiler vs. Interpreter*
- ▶ *Compiling Dynamic Languages?*

Implementation of Dynamic Languages

- ▶ *Compiler vs. Interpreter*
- ▶ *Compiling Dynamic Languages?*
- ▶ *JIT Compilers*

Implementation of Dynamic Languages

- *Compiler vs. Interpreter*
- *Compiling Dynamic Languages?*
- *JIT Compilers*
- *AST vs. Bytecode Interpreters*
- *Object model*