Introduction to Scala

4-19-2010

Opening Discussion

- Your presentations!
  - Pick a topics
  - Pick a day

Language Basics

- Scala is a purely object-oriented, functional language
    - All values are objects
    - Functions are first-class values
- Main implementation compiles to the JVM and allows seamless calls to Java libraries. Also have .NET implementation.
- Compiler puts in primitives when possible for efficiency.

REPL Stuff

- If we run scala without arguments it drops us into the REPL.

- In this mode we can interact much the same way we did with Matlab.

- Let's play with this just a bit.
    - val, var, def

Syntactic Sugar

- Semicolon inference

- Local type inference

- Methods as operators

  - Optional dot

  - Optional parentheses

Scripting

- Run scala on a .scala file and it is run as a script.

- You can even put in the #! at the top.

Classes and Objects

- You can also code Scala the way you would Java writing classes in files.

- There are no static elements in Scala.

- However, you can declare Objects that serve that purpose and more.

Functional Aspects

- The recommended style in Scala is functional.
    - val
    - Function literals
    - Pattern matching

- Collections have normal functional methods on them.
    - Map, Filter, Reduce, Fold

- Control structures all expressions except while.

Regular Expressions

- Strings have a method called r that produces a regular expression.

- Triple quote strings make backslashes nicer.

So Much More

- Scala stands for scalable language.
  - Traits
  - Implicit conversions
  - Actor parallelism
  - Parsers
  - Partial functions
  - Pass-by-name
  - Lazy evaluation

Closing Remarks

- Next time we will hear from one of you.