CSC 347 - Concepts of Programming Languages

Scala Pragmatics

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Learning Objectives

- Set up a Scala development environment

Java and Scala

- Unzip the Scala homework workspace hw-scala-3.4.1.zip

- Follow the instructions in README.html

- If you have Java installed, check Scala JDK Compatibility

- Install Java LTS (long term support) v8, v11, v17, or v21 or OpenJDK/AdoptOpenJDK (e.g., via homebrew) v8, v11, v17, or v21

- Install SBT using the windows installer or homebrew

Using Scala

- For real programs and homeworks, use `sbt` to run tests

- File may only contain object and class declarations

```scala
object o { val x = ... }
class c { ... }
```

- You can use `console` to get a REPL within sbt, use `:quit` to exit the REPL

- In the sbt REPL, you can use `import` objects

```scala
import o.*
// use x
```

Using Scala

- For tiny examples, type directly into the REPL

```scala
val x = ...
// use x
```

- For larger examples, type in a file and `:load` into the REPL

```scala
:load x.sc
// use x
```

- File contains declarations just as you would type them in the REPL

- If there are expressions, then the last one is printed out as a value in the REPL

- Do not put snippet files ending in `.scala` in the SBT directory; SBT expects `object` and `class` declarations and will report a compile error

Homework Assignments

- **Make sure you are in the right directory**: run `dir` (Windows) or `ls` (Linux, MacOS) and check that the file `build.sbt` is listed

- Compile the homework assignments: inside SBT `compile` or from command line `sbt compile`

- Run all unit tests: inside SBT `test` or from command line `sbt test`

- Run the tests of a single homework assignment: inside SBT `testOnly fp1tests` or from command line `sbt "testOnly fp1tests"`

- Run the homework assignment tests whenever a file changes: inside SBT `~testOnly fp1tests`

- Run a single test of a single homework assignment: inside SBT `testOnly fp1tests -- -n fp1ex05`