CS644: Big Data

Week 2

Principles of Functional Programming with Scala

Announcements

- **Homework 1** is available on Gradescope.
  Deadline: 19 Sep 11:59pm

- **Project 0** (will be posted soon!)

Functional Programming: Recap

The following are features of FP that distinguish it from the imperative or "procedural" programming style.

- **Pure Functions** (No unpredictable side effects!)
- **Immutability** (Persistent, predictable values!)
- **Referential transparency** (What a function does is predictable!)
- **Functions as first-class entities** (We have function types!)
- **Higher order functions** (We have functions of functions!)
- **Disciplined handling of state**

Functional Programming: more details

https://www.guru99.com/functional-programming-tutorial.html

Scala: a brief introduction

Heather Miller (former grad student of Odersky, creator of Scala) gives a nice, brief overview of Scala, its history and features.

Let us learn from (a descendant of) the father of Scala.

https://heather.miller.am/teaching/cs4240/spring2018/scala-tutorial/slides.html

Using Scala

Now that we know a bit more about the language and its central features and benefits, we are hopefully motivated enough to dive in and try it ourselves!

https://docs.scala-lang.org/tour/tour-of-scala.html