# XML

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# Opening Discussion

- Minute essay comments:
  - Why didn't we learn this earlier?
  - XML for GUIs?
  - Too many attributes?
  - XML is slower.
  - Empty elements.
  - When to not use attributes.
  - Benefits of XML.
  - Why XML instead of HTML?
  - Final review session?

# More

- Is XML used more than flat text?
- Moving 1321?
- Courses that use coding for specific topic.
- Streaming? More safety or insecurity?

# XML in Scala

- The Scala language supports XML at the language level.
- Go to the REPL and enter some XML.
- There is a scala.xml package that contains the libraries for XML.
  - The NodeSeq, Node, and Elem types are particularly useful. I'll typically just use the word Node to describe something from the XML.
  - So is the XML object.

# The XML Object

- The loadFile method can be passed a file name and it will read in the file and return a NodeSeq that allows you to get to the contents.
- There is also  a save method that takes a file name and an XML node and writes it to file.

# Using \ and \\

- Use the \ operation on a node to search for the occurrences of something at the top level.
- The second argument is a string.
  - Normal string searches for tags with that label.
  - If the string starts with @ it searches for attributes.
- Use \\ to search deeply.

# Writing XML

- We saw you can put XML directly into Scala code.
- If you put in curly braces, you can next Scala code in the XML.
  - <student name={name}>
  - {grades.map(g => <grade value={g.toString}/>)}
  - </student>
  - Properties much be strings.
- XML.save(filename:String, node:Node)

# Code

- Let's keep working with the code for storing student data in XML.

# Minute Essay

- When would you not want to use XML?