Web-based Data Exchange Formats

- HTML
- XHTML
- XML
- JSON
XML vs JSON

- XML is like a Ferrari
- JSON is like a good bicycle
  - A Ferrari will get you to Las Vegas faster
  - A bicycle can go off-road

- XML is beautiful and powerful
- XML is well-engineered and well-researched

- JSON is much lighter weight
- JSON is easier to just get going fast
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JSON is like XML

- They are both human-readable text
- They are both hierarchical/tree-structured
- Both can be parsed and used in many languages
- Both can be passed in AJAX requests
  - (despite the X in AJAX)
- Both have matching opening and closing symbols
• JSON is **different** than XML
  • JSON does not have tags
  • JSON is less verbose
    • quicker to write
    • quicker to read
    • quicker to transport
  • JSON can be parsed trivially using the `eval()` procedure in Javascript
• JSON has arrays, XML does not
• XML is extensible JSON usually isn’t
  • new versions can coexist with legacy versions
Using either works like this:

- get the JSON/XML string
- convert it to a data structure
  - JSON -> eval()
  - XML -> some parse function (lib dependent)
- use the data

Do not process either type of data by “hand”.

- input: Use a library to parse the data
- output:
  - Create the data in native data structures
  - Use a program or method to output the data structure in JSON/XML
Example

- Represent this as
  - XML
  - JSON
- There is not an absolutely correct answer to how to interpret this tree in the respective languages.
- There are multiple ways to interpret what this tree means.
Example

<?xml version="1.0"?>
<class>
  <INF_221>
    <program>
      search engine
    </program>
  </INF_221>
  <INF_133>
    <quiz>
      crossword puzzle
    </quiz>
    <Assignment>
      XML
    </Assignment>
  </INF_133>
</class>