


**Lecture 5
Examples**

**Client/Server Programming
for Internet Applications**

TCSS460
Summer 2020



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JSON

• JavaScript Object Notation (JSON)

- is not part of core JavaScript language
- **lightweight data-interchange format**
- completely language independent
- supported by nearly all languages today (C, C++, C#, Java, JavaScript, Perl, Python, among many others)
- most common format for data exchange for web services

• *web services? microservices? REST APIs?*

- (**cloud**) application typically contains many services
- exchange data using
 - XML
 - JSON
 - plain text



JSON (cont'd)

- data is expressed as sequence of attribute/value pairs
 - colon separates attribute and its value
 - syntax: `parameter : value`
 - entire JSON sequence is enclosed in curly braces forming a **JSON object**
- because JSON is lightweight, it has become natural solution for using it for data feeds consumed by front-end applications
 - use JavaScript to parse data
- JSON is part of JavaScript
 - no need for additional libraries or interpreters

```
{
  "first": "Jane",
  "last": "Doe",
  "email": "some_email_address",
  "tel": "123-456-789 "
}
```

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XMLHttpRequest

- **XMLHttpRequest (XHR)** is a interface that allows you to interact with servers
 - execute HTTP requests
 - create headers
 - generate request message
 - handle HTTP responses
- making web pages interactive and responsive
 - can use it to update parts of a page without refreshing
- for full-duplex communication, you can use WebSockets

<https://developer.mozilla.org/en-US/docs/Web/API/XMLHttpRequest>

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Examples

- Two files are required for completing the example
 - lect5-c.css
 - data.json
- both files are in the lect5c-examples.zip that can be found on
 - [Canvas | Modules | Module 2 | Lecture 5](#)