



CS 337

JSON

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Announcements

- PAs 8 and 9
- Final Project
- Exam 2
- Late Days

JSON

- JavaScript Object Notation
- Basically, a text representation of Js objects
/ arrays / key+value pairs
- Easily human-readable, easily
machine-readable
- A data format, useful for transferring data
to/from Js clients and servers
 - (as opposed to CSV, XML, etc)

An Example

people.csv

```
name,hgt,lbs  
Joe,75,200  
Jack,60,170  
John,70,175
```

people.json

```
{ "people": [  
  ["Joe", 75, 200],  
  ["Jack", 60, 170],  
  ["John", 70, 175]  
]}
```

An Example

people.csv

```
name, hgt, lbs  
Joe, 75, 200  
Jack, 60, 170  
John, 70, 175
```

people.json

```
{ "people": [  
  {"name": "Joe", "hgt": 75, "wgt": 200},  
  {"name": "Jack", "hgt": 60, "wgt": 170},  
  {"name": "John", "hgt": 70, "wgt": 175}  
]}
```

Represent a responsibilities item with JSON

```
{ "name": "complete PA 8",  
  "stat": "INPROGRESS",  
  "difficulty": 7,  
  "list": "school" }
```

Represent multiple lists item with JSON

```
{ "item": [  
  { "name": "complete PA 8",  
    "stat": "INPROGRESS",  
    "difficulty": 7,  
    "list": "school" },  
  { "name": "find final project group",  
    "stat": "INPROGRESS",  
    "difficulty": 5,  
    "list": "school" },  
  . . .  
]}
```

Represent multiple lists item with JSON

```
{
  "school": [
    { "name": "complete PA 8", "stat": "INPROGRESS",
      "difficulty": 7, "list": "school" },
    { "name": "find final project group", "stat": "INPROGRESS",
      "difficulty": 5, "list": "school" } ],
  "TA": [
    { "name": "grade PA 7", "stat": "INPROGRESS",
      "difficulty": 9, "list": "TA" },
    { "name": "grade exams", "stat": "TOBESTARTED",
      "difficulty": 9, "list": "TA" } ],
  . . . .
}
```


Write some JSON to represent this data

Alice is a **Software Engineer** at **IBM** with salary **100k**

Bob is an **Attorney** at **Google** with salary **200k**

Sandy is a **Doctor** at **Tucson Medical Center** with salary **250k**

Joe is a **Doctor** at **Tucson Medical Center** salary **250k**

Greg is a **Graphic Designer** at **Google** with salary **80k**

JSON

- **JSON.parse()** Converts a JSON string to a Javascript object
- **JSON.stringify()** Converts a Javascript object to a string
- Can call **stringify** before sending data, and **parse** after receiving data

POST Handling - Server Side - JSON

```
const express = require('express');
const parser = require('body-parser');

const app = express();
app.use(parser.json());

app.post('/some/route', (req, res) => {
  let a = req.body.alias;
  // ...
});
```

POST Handling - Client Side - JSON

```
let p = fetch(someURL, {  
  method: 'POST',  
  body: JSON.stringify(someObject),  
  headers: { 'Content-Type': 'application/json' }  
});
```

```
p.then((response) => {  
  return response.text();  
}).then((text) => {  
  console.log(text);  
}); // What about the errors?
```

Change the MemeDB application to
send/receive JSON