

COMP335 Web Application Development

Node.js

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Node.js

- Server-side JavaScript
- High performance network applications framework, well optimized for high concurrent environments
- From the official site (nodejs.org):
 - Node's goal is to provide an easy way to build scalable network programs.
- It's a command line tool.

```
its-macbook-pro:~ seikyungjung$ node
> Math.sqrt(2)
1.4142135623730951
> var a = 12
undefined
> a
12
> console.log("Hello")
Hello
> .exit
its-macbook-pro:~ seikyungjung$
```

```
// "hello" first and waits for 3 seconds
// and then prints "world"
function callback() {
  console.log("world");
}
setTimeout(callback, 3000)
console.log("hello");

setTimeout(function(){
  console.log("world");
},
  3000
);
console.log("hello");
```

```
its-macbook-pro:Node seikyungjung$ node hello.js
hello
world
```

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When to use Node.js?

- Node.js is good for creating streaming based real-time services, web chat applications, etc.
- If you are great at writing JavaScript code, then you can use the same language at both the server-side and client-side
- Who is using Node.js?
 - <https://github.com/nodejs/node-v0.x-archive/wiki/Projects,-Applications,-and-Companies-Using-Node>

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http://localhost:3000

app.js

```
app.use(express.static(path.join(__dirname, 'public')));
app.use('/', routes);
vs.
app.use('/', routes);
app.use(express.static(path.join(__dirname, 'public')));
```

routes/index.js

```
router.get('/', function(req, res) {
  res.render('index', { title: 'Express' });
});
```

views/index.hbs

```
<h1>{{title}}</h1>
<p>Welcome to {{title}}</p>
```

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http://localhost:3000/hello

routes/index.js

```
router.get('/hello', function(req, res) {
  res.render('hello', { title: 'Hello World' });
});
```

views/hello.hbs

```
<h1>{{title}}</h1>
<hello>Welcome to {{title}}</hello>
```

stylesheets/style.css

```
hello {
  color: rgb(22, 128, 16);
}
```

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Cookies

- HTTP is a *stateless* protocol, what's that mean?
 - the server treats each request as completely separate from any other
- This, however, makes some applications difficult. For example?
 - A shopping cart is an object that must be maintained across numerous requests and responses
- So, cookies can be used to help maintain state by storing some information on the browser system
- A cookie is a key/value pair that is passed between a browser and a server in the HTTP header
- Systems that depend on cookies will fail if the browser refuses to store them

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Session Tracking

- A **session** is the time span during which a browser interacts with a particular server
- **Session vs. cookie**
 - Session uses cookie in order to store information.
 - https://en.wikipedia.org/wiki/Session_ID
 - A visitor accessing your web site is assigned a unique id, the so-called session id. This is either stored in a cookie on the user side or is propagated in the URL.
 - The reason to use session ID is that the client only has to handle the identifier, all session data is stored on the server

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routes/index.js

<http://localhost:3000/session>

```
var moment = require('moment');
router.get('/session', function(req, res) {
  // HTTP request has a session object
  var sess = req.session;
  // create a javascript variable views
  if (sess.views) {
    sess.views++;
  } else {
    // initialize the new variable to 1
    sess.views = 1;
  }
  var d = moment().format('MMMM Do YYYY, h:mm:ss a');
  res.render('session', {
    title: 'Counting session',
    views: sess.views,
    dates: d
  });
});
```

```
its-macbook-pro:project seikyungjung$ npm install express-session
its-macbook-pro:project seikyungjung$ npm install moment --save
```

routes/session.hbs

```
<h1>{{title}}</h1>
<p>Today is {{dates}}</p>
<p>You visited this page
  <strong> {{views}} </strong> times </p>
```

app.js

```
var session = require('express-session');

// Use the session middleware
app.use(session({
  secret: 'keyboard cat',
  resave: false,
  saveUninitialized: true
}));
```

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In-class exercise

Counting session

Today is March 21st 2016, 12:56:16 am
You visited this page for the first time

You will need to save the date to the session object to print last visited time.

http://handlebarsjs.com/builtin_helpers.html

Counting session

Today is March 21st 2016, 12:55:26 am
You visited this page 5 times
You last visited this page at March 21st 2016, 12:51:48 am

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