

Module 6

Express JS

Outline

- Understanding express js framework
- Scaffolding project with express-generator
- Understanding routing and middleware

Express - Official site says

Express 4.14.0

Fast, unopinionated,
minimalist web
framework for Node.js

Express - What can be developed

- Web Applications
- API

Express - Setup

```
npm install express --save
```

HelloWorld Express

```
var express = require('express')
```

```
var app = express()
```

```
app.get('/', function (req, res) {  
  res.send('Hello World!')  
})
```

```
app.listen(3000, function () {  
  console.log('Example app  
listening on port 3000!')  
})
```

Express Generator - Setup & Usage

```
$ npm install express-generator -g
```

```
$ express -h
```

```
Usage: express [options] [dir]
```

Options:

-h, --help	output usage information
--version	output the version number
-e, --ejs	add ejs engine support
--hbs	add handlebars engine support
--pug	add pug engine support
-H, --hogan	add hogan.js engine support
-v, --view <engine>	add view <engine> support (ejs hbs hjs jade pug twig vash) (defaults to jade)
-c, --css <engine>	add stylesheet <engine> support (less stylus compass sass) (defaults to plain css)
--git	add .gitignore
-f, --force	force on non-empty directory

Express Generator - Create new app

```
express --view=jade myapp
```


Express Generator - Introspect Project

Review the folder structure

Express Generator - Run the app

```
npm start
```

Routing

- Routing refers to the definition of application end points (URIs) and how they respond to client requests.
- Simply put unique address for a resource on a server



Routing - How to use

`app.METHOD(PATH, HANDLER)`

- `app` is an instance of express.
- `METHOD` is an HTTP request method, in lowercase.
- `PATH` is a path on the server.
- `HANDLER` is the function executed when the route is matched.



Routing - Example routes

```
app.get('/products', HANDLER)
```

```
app.post('/products', HANDLER)
```

```
app.put('/products/:id', HANDLER)
```

```
app.delete('/products/:id', HANDLER)
```

```
app.all('/products/status', HANDLER)
```

Middleware

- Functions that have access to the **request object (req)**, the **response object (res)**, and the **next** function in the **application's request-response cycle**.
- The **next** function is a function in the Express router which, when invoked, executes the middleware **succeeding** the current middleware.

What Middleware can do

- Execute any code.
- Make changes to the request and the response objects.
- End the request-response cycle.
- Call the next middleware in the stack.

Anatomy of Middleware

```
var express = require('express');  
var app = express();
```

HTTP method for which the middleware function applies.

Path (route) for which the middleware function applies.

The middleware function.

```
app.get('/', function(req, res, next) {  
  next();  
})
```

Callback argument to the middleware function, called "next" by convention.

```
app.listen(3000);
```

HTTP **response** argument to the middleware function, called "res" by convention

HTTP **request** argument to the middleware function, called "req" by convention.

Request Object

- Represents the **HTTP request** and has properties for the request **query string, parameters, body, HTTP headers**, and so on
- Some most used properties

req.baseUrl	req.cookies	req.query
req.hostname	req.method	req.params
req.path		

Response Object

- Represents the **HTTP response** and has properties for cookies, sending responses, headers etc.,
- Some most used methods

res.attachment	res.cookie	res.download
res.end	res.json	res.redirect
res.render	res.send	res.sendFile
res.sendStatus	res.set	res.status

Check your knowledge - 1

- Name 2 types of applications that can be developed with express js?
- Middleware functions do not have access to req and res, true or false?
- app.GET is used to serve http get requests, true or false?
- Which concept refers to “definition of application end points”
- Name methods to end request-response cycle

Check your knowledge - 2

- Which request property is used to read query params?
- Is it possible to find the current request http method?
- Which method is used to send json response to client?
- How to set header on response?
- How to set cookie on response?
- `res.end` vs `res.send`?