

# What's In This Module?

What is Express.js?

Using Middleware

Working with Requests & Responses  
(Elegantly!)

Routing

Returning HTML Pages (Files)

# What and Why?

Server Logic is Complex!

You want to focus on your Business Logic, not  
on the nitty-gritty Details!

**Framework:** Helper functions,  
tools & rules that help you build  
your application!

Use a Framework for the Heavy Lifting!

express

# Alternatives to Express.js

Vanilla Node.js

Adonis.js

Koa

Sails.js

...

Media Player

EXPLORER

NODEJS-COMPLETE-GUIDE

- .vscode
- node\_modules
- .gitignore
- app.js
- message.txt
- package-lock.json
- package.json

app.js

```
1 const http = require('http');
2
3
4 console.log(routes.someText);
5
6 const server = http.createServer();
7
8 server.listen(3000);
9
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console

```
Maximilians-MBP:nodejs-complete-guide mschwarzmueller$ npm install --save express
(.....) :: loadDep:mime-types: sill resolveWithNewModule setprototypeof@1.0.3 checking installabl
```

0:01:09 0:02:38

003 Installing Express.js

04-expressjs\* 0 0 Launch Program (nodejs-complete-guide)

Ln 6, Col 34 Spaces: 4 UTF-8 LF JavaScript Prettier

81°F Cloudy 10:48 AM 7/30/2023

Windows Taskbar icons: File Explorer, Search, Task View, Chat, File, Microsoft Edge, Google Chrome, Outlook, Mail, Calendar, Photos.

Media Player

EXPLORER app.js package.json

NODEJS-COMPLETE-GUIDE

- .vscode
- node\_modules
- .gitignore
- app.js
- message.txt
- package-lock.json
- package.json

```
1  {
2    "name": "nodejs-complete-guide",
3    "version": "1.0.0",
4    "description": "Complete Node.js Guide",
5    "main": "app.js",
6    "scripts": {
7      "test": "echo \\\"Error: no test specified\\\" && exit 1",
8      "start": "nodemon app.js",
9      "start-server": "node app.js"
10    },
11    "author": "Maximilian Schwarzmüller",
12    "license": "ISC",
13    "devDependencies": {
14      "nodemon": "^1.18.3"
15    },
16    "dependencies": {
17      "express": "^4.16.3"
18    }
19  }
20  I
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console

```
Maximilians-MBP:nodejs-complete-guide mschwarzmueller$ npm install --save express
npm WARN nodejs-complete-guide@1.0.0 No repository field.

+ express@4.16.3
added 51 packages from 47 contributors and audited 1474 packages in 4.812s
found 0 vulnerabilities
```

003 Installing Express.js

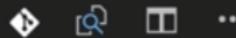
04-expressjs\* 0 0 Launch Program (nodejs-complete-guide)

81°F Afternoon rain

10:49 AM 7/30/2023

EXPLORER

app.js



NODEJS-COMPLETE-GUIDE

- .vscode
- node\_modules
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- package-lock.json
- package.json

```
1 const http = require('http');
2
3 const express = require('express');
4
5 const app = express();
6
7 const server = http.createServer(app);
8
9 server.listen(3000);
10
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console



```
> nodejs-complete-guide@1.0.0 start /Users/mschwarzmueller/development/teaching/udemy/nodejs-complete-guide
> nodemon app.js
```

```
[nodemon] 1.18.3
```

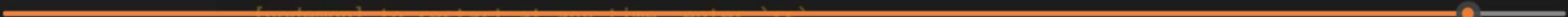
```
[nodemon] to restart at any time, enter `rs`
```

```
[nodemon] watching: **
```

```
[nodemon] starting `node app.js`
```

0:03:34

0:00:13



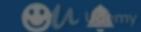
A horizontal timeline slider with a red progress bar indicating the execution time from 0:03:34 to 0:00:13. A circular play/pause button is positioned near the end of the bar.

003 Installing Express.js

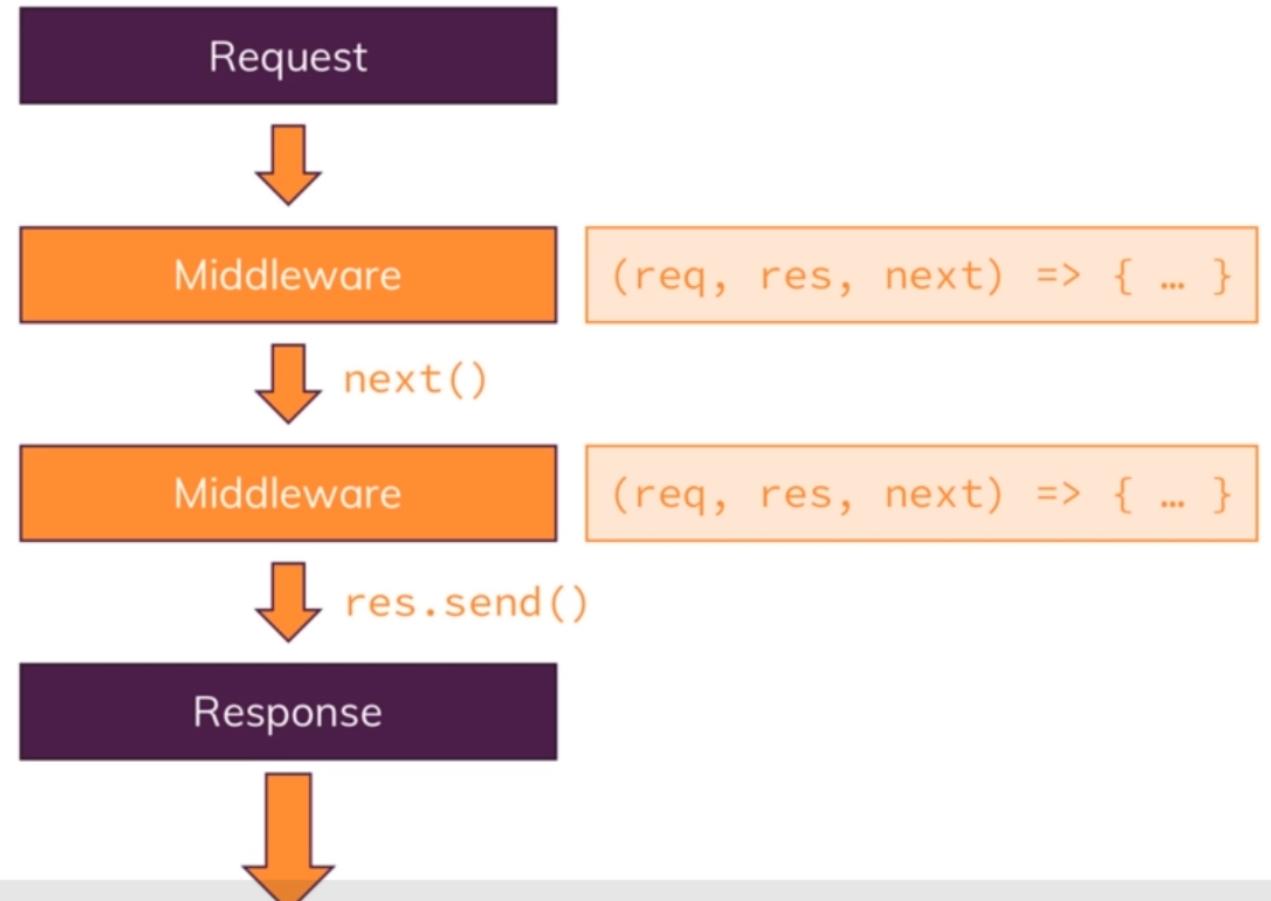


04-expressjs\* □ 0 ▲ 0 ► Launch Program (nodejs-complete-guide)

Ln 5, Col 10 (3 selected) Spaces: 4 UTF-8 LF JavaScript Prettier



# It's all about Middleware



```
1 const http = require('http');
2
3 const express = require('express');
4
5 const (property) Application.use: (...handlers: RequestHandler[]) => Express (+4 overloads)
6
7 app.use();
8
9 const server = http.createServer(app);
10
11 server.listen(3000);
12
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console



```
> nodejs-complete-guide@1.0.0 start /Users/mschwarzmueller/development/teaching/udemy/nodejs-complete-guide
> nodemon app.js
```

```
[nodemon] 1.18.3
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: ***!
[nodemon] starting `node app.js`
```

- NODEJS-COMPLETE-GUIDE
- .vscode
- node\_modules
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- app.js
- message.txt
- package-lock.json
- package.json

```
1 const http = require('http');
2
3 const express = require('express');
4
5 const app = express();
6
7 app.use((req, res, next) => {
8   console.log('In the middleware!');
9 });
10
11 app.use((req, res, next) => {
12   console.log('In another middleware!');
13 });
14
15 const server = http.createServer(app);
16
17 server.listen(3000);
18
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console



```
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
In the middleware!
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
In the middleware!
In the middleware!
```

EXPLORER

app.js



NODEJS-COMPLETE-GUIDE

- .vscode
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- package-lock.json
- package.json

```
1 const http = require('http');
2
3 const express = require('express');
4
5 const app = express();
6
7 app.use((req, res, next) => {
8     console.log('In the middleware!');
9     next(); // Allows the request to continue to the next middleware in line
10 });
11
12 app.use((req, res, next) => {
13     console.log('In another middleware!');
14     // ...
15 });
16
17 const server = http.createServer(app);
18
19 server.listen(3000);
20
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console



```
[nodemon] starting `node app.js`
In the middleware!
In the middleware!
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
In the middleware!
```

```
In another middleware!
```

0:04:47

0:00:26

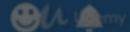


004 Adding Middleware

OUTLINE

04-expressjs\* □ 0 ▲ 0 ► Launch Program (nodejs-complete-guide)

Ln 10, Col 4 (109 selected) Spaces: 4 UTF-8 LF JavaScript Prettier



EXPLORER

app.js



```
1 const http = require('http');
2
3 const express = require('express');
4
5 const app = express();
6
7 app.use((req, res, next) => {
8     console.log('In the middleware!');
9     next(); // Allows the request to continue to the next middleware in line
10});
11
12 app.use((req, res, next) => {
13     console.log('In another middleware!');
14     res.send('<h1>Hello from Express!</h1>');
15});
16
17 const server = http.createServer(app);
18
19 server.listen(3000);
20
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console



```
[nodemon] starting `node app.js`
In the middleware!
In another middleware!
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
In the middleware!
In another middleware!
```

0:02:08

0:00:50



005 How Middleware Works

OUTLINE

04-expressjs\* □ 0 ▲ 0 ► Launch Program (nodejs-complete-guide)

Ln 14, Col 46 (42 selected) Spaces: 4 UTF-8 LF JavaScript Prettier



# Hello from Express!

10 ms    241 ms    1.19 s

Name	Headers	Preview	Response	Cookies	Timing
local...	Content-Type: text/html; charset=utf-8 Content-Length: 28 Date: Tue, 28 Aug 2018 11:57:26 GMT ETag: W/"1c-qnCbMPaOn0lwSkTIJiVpk0+F5WY" X-Powered-By: Express				
ng-v...					

▼ Response Headers [view source](#)

Content-Type: text/html; charset=utf-8  
Content-Length: 28  
Date: Tue, 28 Aug 2018 11:57:26 GMT  
ETag: W/"1c-qnCbMPaOn0lwSkTIJiVpk0+F5WY"  
X-Powered-By: Express

2 requests

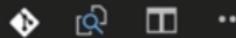
Request Headers [view source](#)

Console What's New X

Highlights from the Chrome 68 update

EXPLORER

app.js



```
7  app.use((req, res, next) => {
8    console.log('In the middleware!');
9    next(); // Allows the request to continue to the next middleware in line
10   });
11
12  app.use((req, res, next) => {
13    console.log('In another middleware!');
14    res.send('<h1>Hello from Express!</h1>');
15  });
16  ^
17  const server = http.createServer(app);
18
19  server.listen(3000);
```

→ replace with  
app.listen(3000)

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console



[nodemon] starting `node app.js`

In the middleware!

In another middleware!

[nodemon] restarting due to changes...

[nodemon] starting `node app.js`

In the middleware!

In another middleware!

0:02:12

0:01:30

006 Express.js - Looking Behind the Scenes

middlewar



EXPLORER

app.js

- NODEJS-COMPLETE-GUIDE
  - ▷ .vscode
  - ▷ node\_modules
  - ▷ .gitignore
  - JS app.js M
  - 📄 message.txt
  - 📦 package-lock.json
  - 📦 package.json

```
1 | const express = require('express');
2 |
3 | const app = express();
4 |
5 | app.use((req, res, next) => {
6 |   console.log('In the middleware!');
7 |   next(); // Allows the request to continue to the next middleware in line
8 | });
9 |
10| app.use((req, res, next) => {
11|   console.log('In another middleware!');
12|   res.send('<h1>Hello from Express!</h1>');
13| });
14|
15| app.listen(3000);
16|
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console

```
[nodemon] starting `node app.js`
In the middleware!
In another middleware!
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
In the middleware!
In another middleware!
```

▶ OUTLINE

弼 04-expressjs\*

✖ 0

⚠ 0

▶ Launch Program (nodejs-complete-guide)

Ln 1, Col 1

Spaces: 4

UTF-8

LF

JavaScript

Prettier: ✓



NODEJS-COMPLETE-GUIDE

- .vscode
- node\_modules
- .gitignore
- app.js M
- message.txt
- package-lock.json
- package.json

```
1 const express = require('express');
2
3 const app = express();
4
5 app.use('/', (req, res, next) => {
6   console.log('This always runs!');
7   next();
8 });
9
10 app.use('/add-product', (req, res, next) => {
11   console.log('In another middleware!');
12   res.send('<h1>The "Add Product" Page</h1>');
13 });
14
15 app.use('/', (req, res, next) => {
16   console.log('In another middleware!');
17   res.send('<h1>Hello from Express!</h1>');
18 });
19
20 app.listen(3000);
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console



```
at Object.Module._extensions..js (internal/modules/cjs/loader.js:700:10)
at Module.load (internal/modules/cjs/loader.js:599:32)
at tryModuleLoad (internal/modules/cjs/loader.js:538:12)
at Function.Module._load (internal/modules/cjs/loader.js:530:3)
at Function.Module.runMain (internal/modules/cjs/loader.js:742:12)
at startup (internal/bootstrap/node.js:266:19)
```

[nodemon] app crashed - waiting for file changes before starting...



Media Player EXPLORER

NODEJS-COMPLETE-GUIDE

- .vscode
- node\_modules
- .gitignore
- app.js M
- message.txt
- package-lock.json
- package.json

package.json app.js

```
1 const express = require('express');
2
3 const app = express();
4
5 app.use();
6
7 app.use('/add-product', (req, res, next) => {
8   res.send('<form action="/product" method="POST"><input type="text" name="title"><button type="submit" value="Add Product"></button></form>');
9 });
10
11 app.use('/product', (req, res, next) => {
12   console.log(req.body);
13   res.redirect('/');
14 });
15
16 app.use('/', (req, res, next) => {
17   res.send('<h1>Hello from Express!</h1>');
18 });
19
20 app.listen(3000);
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console

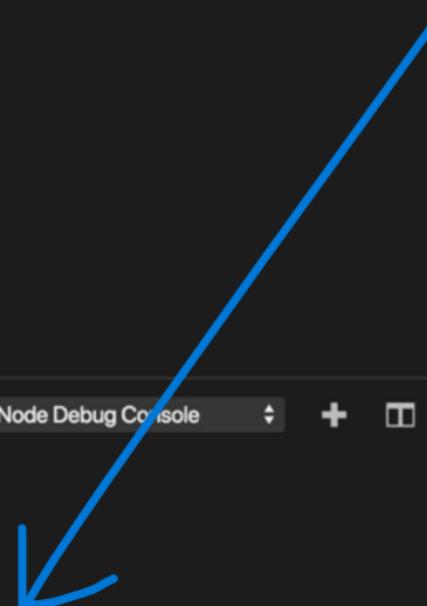
In another middleware!  
This always runs!  
undefined  
This always runs!  
In another middleware!  
^C

Maximilians-MBP:nodejs-complete-guide mschwarzmueller\$ npm install --save body-parser  
(( )) :: rollbackFailedOptional: verb npm-session 65e9ac3fb72f9b43

04-expressjs\* 0 0 Launch Program (nodejs-complete-guide)

84°F Mostly cloudy

12:49 PM 7/30/2023



EXPLORER

package.json

app.js



◀ NODEJS-COMPLETE-GUIDE

- ▶ .vscode
- ▶ node\_modules
- ▶ .gitignore
- ▶ app.js M
- ▶ message.txt
- ▶ package-lock.json M
- ▶ package.json M

```
1  const express = require('express');
2  const bodyParser = require('body-parser'); ←
3
4  const app = express();
5  ?
6  app.use(bodyParser.urlencoded()); ←
7
8  app.use('/add-product', (req, res, next) => {
9    res.send('<form action="/product" method="POST"><input type="text" name="title"><button type="submit" value="Add Product">Add Product</button></form>');
10 });
11
12 app.use('/product', (req, res, next) => {
13   console.log(req.body);
14   res.redirect('/');
15 });
16
17 app.use('/', (req, res, next) => {
18   res.send('<h1>Hello from Express!</h1>');
19 });
20
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console

npm WARN nodejs-complete-guide@1.0.0 No repository field.

```
+ body-parser@1.18.3
added 13 packages from 22 contributors, removed 1 package, updated 5 packages, moved 3 packages and audited 15
04 packages in 3.602s
found 0 vulnerabilities
```

▶ OUTLINE

Maximilians-MBP:nodejs-complete-guide mschwarzmueller\$

04-expressjs\* 0 0 ▲ 0

▶ Launch Program (nodejs-complete-guide)

Ln 6, Col 9 (23 selected)

Spaces: 4

UTF-8

LF

JavaScript Prettier: ✓



Media Player EXPLORER

NODEJS-COMPLETE-GUIDE

- .vscode
- node\_modules
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- app.js M
- message.txt
- package-lock.json M
- package.json M

package.json app.js

```
4  const app = express();
5
6  app.use(bodyParser.urlencoded({extended: false}));
7
8  app.use('/add-product', (req, res, next) => {
9    res.send('<form action="/product" method="POST"><input type="text" name="title"><button type="submit" value="Add Product"></button></form>');
10 });
11
12 app.use('/product', (req, res, next) => {
13   console.log(req.body);
14   res.redirect('/');
15 });
16
17 app.use('/', (req, res, next) => {
18   res.send('<h1>Hello from Express!</h1>');
19 });
20
21 app.listen(3000);
22
```

Here it works for both post & get req.

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console

```
[nodemon] starting `node app.js`
body-parser deprecated undefined extended: provide extended option app.js:6:20
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
{ title: 'Book' }
```

OUTLINE

04-expressjs\* 0 0 ▶ Launch Program (nodejs-complete-guide)

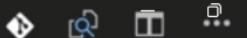
Ln 13, Col 5 (22 selected) Spaces: 4 UTF-8 LF JavaScript Prettier: ✓

86°F Mostly cloudy 12:52 PM 7/30/2023

EXPLORER

package.json

app.js



NODEJS-COMPLETE-GUIDE

- .vscode
- node\_modules
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- package.json M

```
4  const app = express();
5
6  app.use(bodyParser.urlencoded({extended: false}));
7
8  app.use('/add-product', (req, res, next) => {
9    res.send('<form action="/product" method="POST"><input type="text" name="title"><button type="submit" value="Add Product"></button></form>');
10 });
11
12 app.post('/product', (req, res, next) => {
13   console.log(req.body);
14   res.redirect('/');
15 });
16
17 app.use('/', (req, res, next) => {
18   res.send('<h1>Hello from Express!</h1>');
19 });
20
21 app.listen(3000);
22
```

Only fire for incoming post request

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console

```
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
{ title: 'Book' }
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
{ title: 'Book 2' }
```

OUTLINE

04-expressjs\*

0 ▲ 0

Launch Program (nodejs-complete-guide)

Ln 12, Col 1 (97 selected)

Spaces: 4

UTF-8

LF

JavaScript

Prettier: ✓



## NODEJS-COMPLETE-GUIDE

- .vscode
- node\_modules

## routes

- admin.js
- shop.js

- .gitignore

- app.js

- message.txt

- package-lock.json

- package.json

```
1  const express = require('express');
2
3  const router = express.Router(); ← Express Router
4
5  router.get('/add-product', (req, res, next) => {
6    res.send(
7      '<form action="/product" method="POST"><input type="text" name="title"><button type="submit'
8    );
9  });
10
11 router.post('/product', (req, res, next) => {
12   console.log(req.body);
13   res.redirect('/');
14 });
15
16 module.exports = router;
17
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console



```
{ title: 'Book 2' }
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```

## OUTLINE



0:03:20

EXPLORER

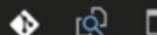
package.json

app.js

message.txt

admin.js

shop.js



NODEJS-COMPLETE-GUIDE

- .vscode
- node\_modules
- routes
  - admin.js
  - shop.js
- .gitignore
- app.js
- message.txt
- package-lock.json
- package.json

```
4  const app = express();
5
6  const adminRoutes = require('./routes/admin'); ←
7
8  app.use(bodyParser.urlencoded({extended: false}));
9
10 app.use(adminRoutes); ←
11
12 app.use('/', (req, res, next) => {
13   res.send('<h1>Hello from Express!</h1>');
14 });
15
16 app.listen(3000);
17
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console



```
{ title: 'Book 2' }
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```

OUTLINE



0:02:48

04-expressjs\* 0 0 ▶ Launch Program (nodejs-complete-guide)

Ln 10, Col 1 (21 selected)

Spaces: 4

UTF-8

LF

JavaScript Prettier: ✓



◀ NODEJS-COMPLETE-GUIDE

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- ▶ node\_modules
- ▶ routes
  - JS admin.js U
  - JS shop.js U
- ▶ .gitignore
- JS app.js M
- ▶ message.txt
- JS package-lock.json
- JS package.json

```
1  const express = require('express');
2
3  const router = express.Router();
4
5  router.get('/', (req, res, next) => {
6    res.send('<h1>Hello from Express!</h1>');
7  });
8
9  module.exports = router;
10
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console

[+]

```
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```

▶ OUTLINE



## NODEJS-COMPLETE-GUIDE

- ▶ .vscode
- ▶ node\_modules
- ▶ routes
  - JS admin.js U
  - JS shop.js U
- ▶ .gitignore
- JS app.js M
- ▶ message.txt
- JS package-lock.json
- JS package.json

```
1 const express = require('express');
2 const bodyParser = require('body-parser');
3
4 const app = express();
5
6 const adminRoutes = require('./routes/admin');
7 const shopRoutes = require('./routes/shop');
8
9 app.use(bodyParser.urlencoded({extended: false}));
10
11 app.use(adminRoutes);
12 app.use(shopRoutes);
13
14 app.listen(3000);
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console



```
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```

## OUTLINE

NODEJS-COMPLETE-GUIDE

- .vscode
- node\_modules
- routes
  - admin.js
  - shop.js
- .gitignore
- app.js
- message.txt
- package-lock.json
- package.json

```
1  const express = require('express');
2  const bodyParser = require('body-parser');
3
4  const app = express();
5
6  const adminRoutes = require('./routes/admin');
7  const shopRoutes = require('./routes/shop');
8
9  app.use(bodyParser.urlencoded({extended: false}));
10
11 app.use(adminRoutes);
12 app.use(shopRoutes);
13
14 app.use((req, res, next) => {
15   res.status[404].send('<h1>Page not found</h1>');
16 });
17
18 app.listen(3000);
19
```

← 404 Error Page

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console

+

✖

↑

✖

```
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```

OUTLINE

...

0:02:26

## NODEJS-COMPLETE-GUIDE

- .vscode
- node\_modules

## routes

- admin.js M
- shop.js M
- .gitignore
- app.js M
- message.txt
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- package.json

```
1  const express = require('express');
2
3  const router = express.Router();
4
5  // /admin/add-product => GET
6  router.get('/add-product', (req, res, next) => {
7    res.send(
8      '<form action="/admin/add-product" method="POST"><input type="text" name="title"><button ty
9    );
10 });
11
12 // /admin/add-product => POST
13 router.post('/add-product', (req, res, next) => {
14   console.log(req.body);
15   res.redirect('/');
16 });
17
18 module.exports = router;
19
```

# Filtering paths

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console



```
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```

{ title: 'Book' }



NODEJS...

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```
1  const express = require('express');
2  const bodyParser = require('body-parser');
3
4  const app = express();
5
6  const adminRoutes = require('./routes/admin');
7  const shopRoutes = require('./routes/shop');
8
9  app.use(bodyParser.urlencoded({extended: false}));
10
11 | app.use('/admin', adminRoutes); → Explicitly manipulating paths
12 | app.use(shopRoutes);
13
14 | app.use((req, res, next) => {
15 |   res.status(404).send('<h1>Page not found</h1>');
16 | });
17
18 app.listen(3000);
19
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console

```
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```

```
{ title: 'Book' }
```

NODEJS-COMPLETE-GUIDE

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  - add-product.html
  - shop.html
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- package.json

```
1 const path = require('path');
2
3 const express = require('express');
4
5 const router = express.Router();
6
7 router.get('/', (req, res, next) => {
8   res.sendFile(path.join(__dirname, '../', 'views', 'shop.html'));
9 });
10
11 module.exports = router;
12
```



PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console + ✖

```
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```

Media Player EXPLORER

app.js message.txt shop.html add-product.html admin.js shop.js

NODEJS-COMPLETE-GUIDE

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- package.json

```
const path = require('path');
const express = require('express');
const router = express.Router();

// /admin/add-product => GET
router.get('/add-product', (req, res, next) => {
  res.send(
    '<form action="/admin/add-product" method="POST"><input type="text" name="title"><button type="submit" value="Add Product"></button></form>'
  );
});

// /admin/add-product => POST
router.post('/add-product', (req, res, next) => {
  console.log(req.body);
  res.redirect('/');
});

module.exports = router;
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console

```
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```

OUTLINE

04-expressjs\* 0 0 ▶ Launch Program (nodejs-complete-guide)

Ln 11, Col 5 (146 selected) Spaces: 4 UTF-8 LF JavaScript Prettier: ✓

79°F Rain

123 PM 8/2/2023

EXPLORER

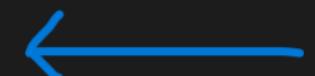
app.js message.txt shop.html add-product.html admin.js shop.js



NODEJS-COMPLETE-GUIDE

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```
1 const path = require('path');
2
3 const express = require('express');
4
5 const router = express.Router();
6
7 // /admin/add-product => GET
8 router.get('/add-product', (req, res, next) => {
9   res.sendFile(path.join(__dirname, '../', 'views', 'add-product.html'));
10 });
11
12 // /admin/add-product => POST
13 router.post('/add-product', (req, res, next) => {
14   console.log(req.body);
15   res.redirect('/');
16 });
17
18 module.exports = router;
19
```



PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console

```
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```

OUTLINE



0:01:16



- [Shop](#)
- [Add Product](#)

Add Product

Elements Console Network Performance > | : X

● ⌛ 🔍 View: Group by frame Preserve log Disa

Filter Hide data URLs

All XHR JS CSS Img Media Font Doc WS Manifest Other

Hit ⌘ R to reload and capture filmstrip.

Name	x Headers Preview Response Cookies Timing
add-...	<b>Response Headers</b> view source
ng-v...	<b>Accept-Ranges:</b> bytes <b>Cache-Control:</b> public, max-age=0 <b>Connection:</b> keep-alive <b>Content-Length:</b> 656 <b>Content-Type:</b> text/html; charset=UTF-8 <b>Date:</b> Tue, 28 Aug 2018 13:52:27 GMT <b>ETag:</b> W/"290-16580c4dc6f" <b>Last-Modified:</b> Tue, 28 Aug 2018 13:41:49 GMT
2 request...	

⋮ Console What's New X

Highlights from the Chrome 68 update

Chrome

EXPLORER

app.js message.txt path.js shop.html 404.html add-product.html



- NODEJS...
- .vscode
- node\_modules
- routes
  - admin.js M
  - shop.js M
- util
  - path.js U
- views
  - 404.html
  - add-product.html
  - shop.html
- .gitignore
- app.js
- message.txt
- package-lock.json
- package.json

```
1 const path = require('path');
2
3 module.exports = path.dirname(process.mainModule.filename);
```



Helper func  
for Navigation

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console

```
[nodemon] restarting due to changes...
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```

OUTLINE



0:01:12

EXPLORER

message.txt path.js shop.html 404.html add-product.html admin.js

NODEJS-COMPLETE-GUIDE

- .vscode
- node\_modules
- routes
  - admin.js M
  - shop.js M
- util
  - path.js U
- views
  - 404.html
  - add-product.html
  - shop.html
- .gitignore
- app.js
- message.txt
- package-lock.json
- package.json

```
1 const path = require('path');
2
3 const express = require('express');
4
5 const rootDir = require('../util/path'); ←
6
7 const router = express.Router();
8
9 // /admin/add-product => GET
10 router.get('/add-product', (req, res, next) => {
11   res.sendFile(path.join(rootDir, 'views', 'add-product.html'));
12 });
  ↗ rootDir
13
14 // /admin/add-product => POST
15 router.post('/add-product', (req, res, next) => {
16   console.log(req.body);
17   res.redirect('/');
18 });
19
20 module.exports = router;
```

const rootDir: string

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console

```
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```

OUTLINE

04-expressjs\* 0 ▲ 0 Launch Program (nodejs-complete-guide)

Ln 11, Col 33 Spaces: 4 UTF-8 LF JavaScript Prettier: ✓



◀ NODEJS-COMPLETE-GUIDE

- ▶ .vscode
- ▶ node\_modules
- ◀ routes
  - JS admin.js M
  - JS shop.js M
- ◀ util
  - JS path.js U
- ◀ views
  - TS 404.html
  - TS add-product.html
  - TS shop.html
- ◀ .gitignore
- JS app.js
- HTML message.txt
- JS package-lock.json
- JS package.json

```
1  const path = require('path');
2
3  const express = require('express');
4
5  const rootDir = require('../util/path'); ←
6
7  const router = express.Router();
8
9  router.get('/', (req, res, next) => {
10    res.sendFile(path.join(rootDir, 'views', 'shop.html'));
11  });
12
13 module.exports = router;
14
```



PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console



```
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```

EXPLORER

app.js

path.js

.gitignore

shop.html

main.css

404.html

add-p

?

...

## NODEJS-COMPLETE-GUIDE

.vscode

node\_modules

public

css

main.css

routes

admin.js

shop.js

util

path.js

views

404.html

add-product.html

shop.html

M

.gitignore

app.js

message.txt

package-lock.json

package.json

```
3 <head>
4     <meta charset="UTF-8">
5     <meta name="viewport" content="width=device-width, initial-scale=1.0">
6     <meta http-equiv="X-UA-Compatible" content="ie=edge">
7     <title>Add Product</title>
8     <link rel="stylesheet" href="/public/css/main.css">
9 </head>
10
11
12 <body>
13     <header class="main-header">
14         <nav class="main-header__nav">
15             <ul class="main-header__item-list">
16                 <li class="main-header__item"><a class="active" href="/">Shop</a></li>
17                 <li class="main-header__item"><a href="/admin/add-product">Add Product</a></li>
18             </ul>
19         </nav>
20     </header>
21
22     <main>
```



Will not work

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

2: Node Debug Console



```
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```

{ title: 'Book' }



0:05:09



NODEJS-COMPLETE-GUIDE

- .vscode
- node\_modules
- public ←
- css
- main.css
- routes
  - admin.js
  - shop.js
- util
  - path.js
- views
  - 404.html
  - add-product.html
  - shop.html M
  - .gitignore
- app.js
- message.txt
- package-lock.json
- package.json

```
1 const path = require('path');
2
3 const express = require('express');
4 const bodyParser = require('body-parser');
5
6 const app = express();
7
8 const adminRoutes = require('./routes/admin');
9 const shopRoutes = require('./routes/shop');
10
11 app.use(bodyParser.urlencoded({extended: false}));
12 app.use(express.static(path.join(__dirname, 'public'))); ← IMP
13
14 app.use('/admin', adminRoutes);
15 app.use(shopRoutes);
16
17 app.use((req, res, next) => {
18   res.status(404).sendFile(path.join(__dirname, 'views', '404.html'));
19 });
20
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console



```
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`{ title: 'Book' }
```



EXPLORER

app.js

path.js

.gitignore

shop.html

main.css

404.html

add-p

?

!

...

## NODEJS-COMPLETE-GUIDE

- .vscode
- node\_modules
- public
  - css
    - main.css

- routes
  - admin.js
  - shop.js

- util
  - path.js

- views
  - 404.html
  - add-product.html
  - shop.html M

- .gitignore
- app.js M
- message.txt
- package-lock.json
- package.json

0:04:34

018 Serving Files Statically

OUTLINE

04-expressjs\* 0 0 ▶ Launch Program (nodejs-complete-guide)

Ln 9, Col 35 (6 selected) Spaces: 4 UTF-8 LF Django Template

0 0 my

```
3
4 <head>
5     <meta charset="UTF-8">
6     <meta name="viewport" content="width=device-width, initial-scale=1.0">
7     <meta http-equiv="X-UA-Compatible" content="ie=edge">
8     <title>Add Product</title>
9     <link rel="stylesheet" href="/public/css/main.css">
10    </head>
11
12    <body>
13        <header class="main-header">
14            <nav class="main-header__nav">
15                <ul class="main-header__item-list">
16                    <li class="main-header__item"><a class="active" href="/">Shop</a></li>
17                    <li class="main-header__item"><a href="/admin/add-product">Add Product</a></li>
18                </ul>
19            </nav>
20        </header>
21
22        <main>
```



Dmit this to make it work.

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console



```
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```

```
{ title: 'Book' }
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```



0:03:15

## NODEJS-COMPLETE-GUIDE

- ↳ .vscode
- ↳ node\_modules
- ↳ public
  - ↳ css
  - ↳ main.css

- ↳ routes
  - ↳ admin.js
  - ↳ shop.js

- ↳ util
  - ↳ path.js

- ↳ views
  - ↳ 404.html
  - ↳ add-product.html
  - ↳ shop.html

- ↳ .gitignore
- ↳ app.js
- ↳ message.txt
- ↳ package-lock.json
- ↳ package.json

```
3
4 <head>
5     <meta charset="UTF-8">
6     <meta name="viewport" content="width=device-width, initial-scale=1.0">
7     <meta http-equiv="X-UA-Compatible" content="ie=edge">
8     <title>Add Product</title>
9     <link rel="stylesheet" href="/css/main.css"> ← IT WORKS!
10    </head>
11
12    <body>
13        <header class="main-header">
14            <nav class="main-header__nav">
15                <ul class="main-header__item-list">
16                    <li class="main-header__item"><a class="active" href="/">Shop</a></li>
17                    <li class="main-header__item"><a href="/admin/add-product">Add Product</a></li>
18                </ul>
19            </nav>
20        </header>
21
22        <main>
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Node Debug Console

```
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
{ title: 'Book' }
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
```

OUTLINE

□

0:02:40



# Module Summary

## What is Express.js?

- Express.js is Node.js framework – a package that adds a bunch of utility functions and tools and a clear set of rules on how the app should be built (middleware!)
- It's highly extensible and other packages can be plugged into it (middleware!)

## Middleware, next() and res()

- Express.js relies heavily on middleware functions – you can easily add them by calling use()
- Middleware functions handle a request and should call next() to forward the request to the next function in line or send a response

## Routing

- You can filter requests by path and method
- If you filter by method, paths are matched exactly, otherwise, the first segment of a URL is matched
- You can use the express.Router to split your routes across files elegantly

## Serve Files

- You're not limited to serving dummy text as a response
- You can sendFile()s to your users – e.g. HTML files
- If a request is directly made for a file (e.g. a .css file is requested), you can enable static serving for such files via express.static()