

# REST APIs

---

Decoupling Frontend and Backend

# What's In This Module?

What are “REST APIs”?

Why use/ build REST APIs?

Core REST Concepts & Principles

First REST API!

## What & Why?

Not every Frontend (UI) requires HTML Pages!

**Mobile Apps**

(e.g. Twitter)

**Single Page Web Apps**

(e.g. Udemy Course Player)

**Service APIs**

(e.g. Google Maps API)

Frontend (UI) is decoupled from the Backend (Server)

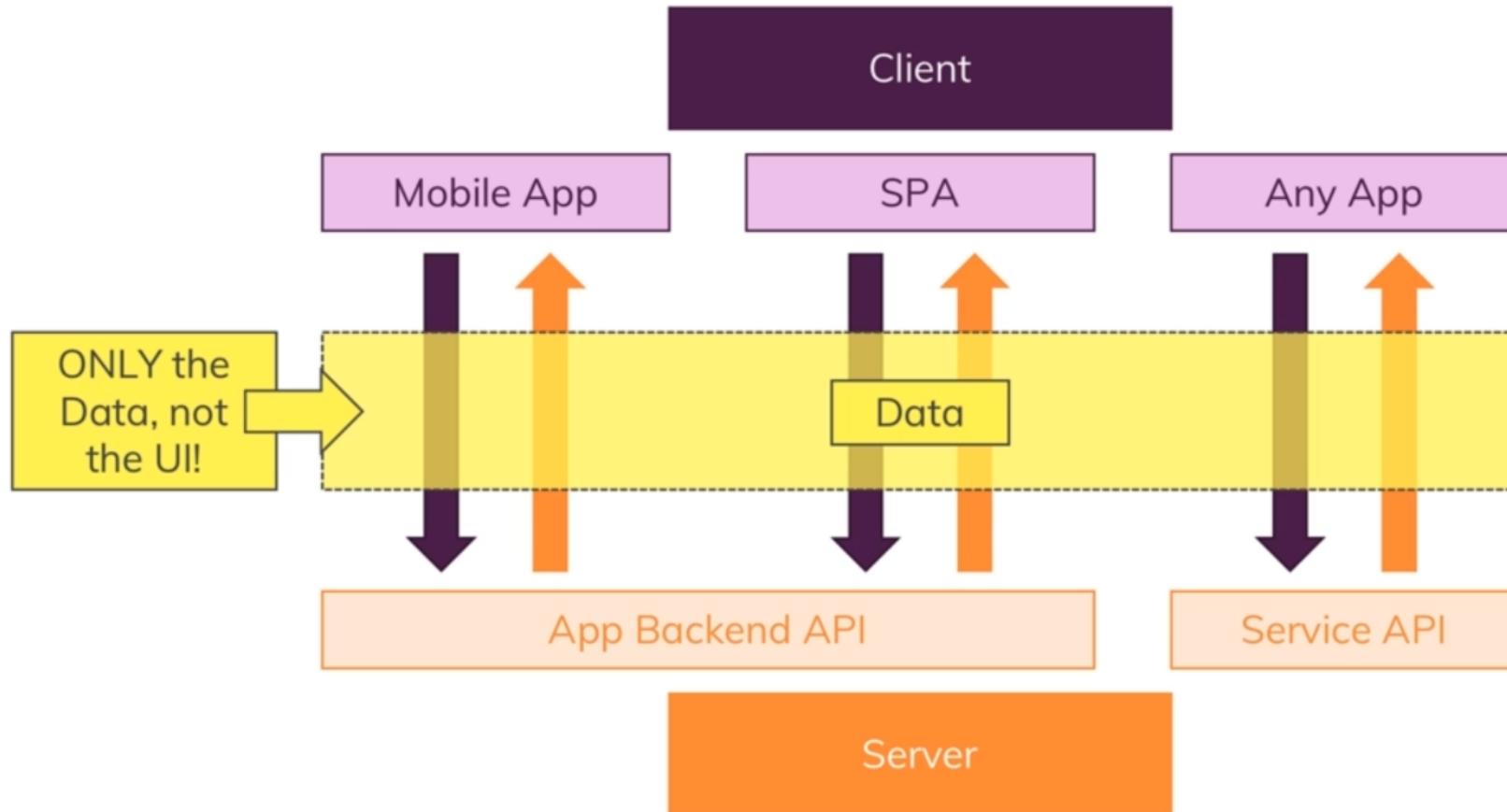
# A Different Kind of Response is Needed

Representational State Transfer

Transfer Data instead of User Interfaces

Important: Only the response (and the request data) changes, NOT the general server-side logic!

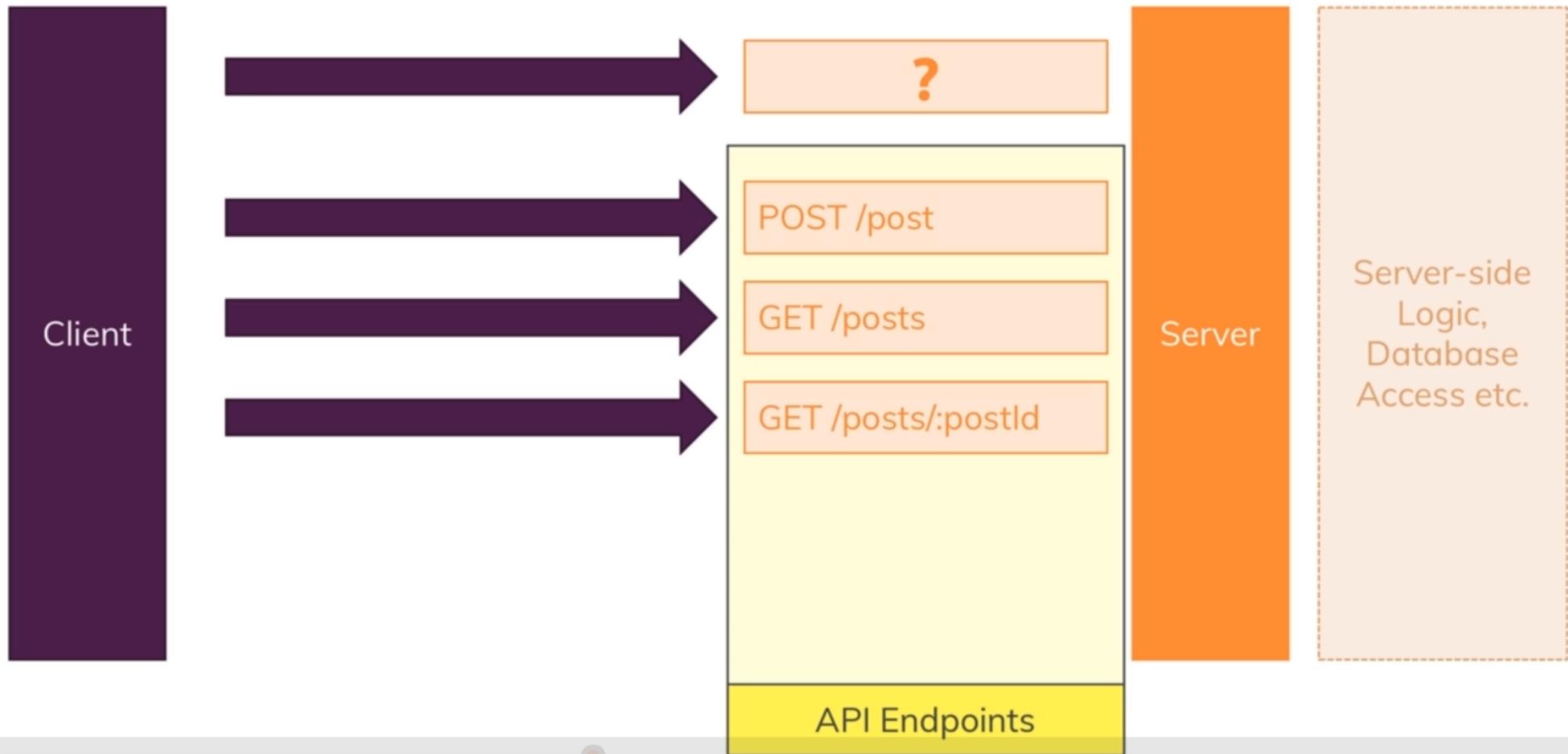
# REST API Big Picture



# Data Formats

HTML	Plain Text	XML	JSON
<p>Node.js</p>	Node.js	<name>Node.js</name>	{"title": "Node.js"}
Data + Structure	Data	Data	Data
Contains User Interface	No UI Assumptions	No UI Assumptions	No UI Assumptions
Unnecessarily difficult to parse if you just need the data	Unnecessarily difficult to parse, no clear data structure	Machine-readable but relatively verbose; XML-parser needed	Machine-readable and concise; Can easily be converted to JavaScript

# Routing



# Http Methods (Http Verbs)

More than just GET & POST

GET

Get a Resource from the Server

POST

Post a Resource to the Server (i.e. create or append Resource)

PUT

Put a Resource onto the Server (i.e. create or overwrite a Resource)

PATCH

Update parts of an existing Resource on the Server

DELETE

Delete a Resource on the Server

OPTIONS

Determine whether follow-up Request is allowed (sent automatically)

# REST Principles

## Uniform Interface

## Stateless Interactions

Clearly defined API endpoints with clearly defined request + response data structure

Server and client don't store any connection history, every request is handled separately

## Cacheable

## Client-Server

## Layered System

## Code on Demand

Servers may set caching headers to allow the client to cache responses

Server and client are separated, client is not concerned with persistent data storage

Server may forward requests to other APIs

Executable code may be transferred from server to client

## EXPLORER

## NODEJS-COMPLETE-GUIDE

- ▷ .vscode
- ▷ .gitignore
- ▷ package.json



PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: node



```
Maximilians-MBP:nodejs-complete-guide mschwarzmueller$ npm install --save express
Maximilians-MBP:nodejs-complete-guide mschwarzmueller$ npm install --save media-typer@0.3.0
(node:1234) :: fetchMetadata: sill resolveWithNewModule media-typer@0.3.0 checking installable st
```

0:01:12

0:05:29

OUTLINE

23-rest-intro



006 Creating our REST API Project &amp; Implementing the Rou



## EXPLORER

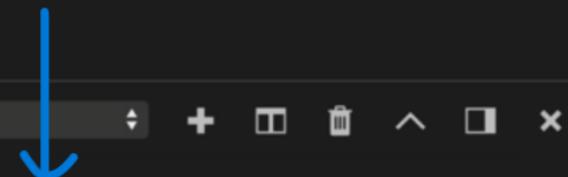
## NODEJS-COMPLETE-GUIDE

- ▷ .vscode
- ▷ node\_modules
- ▷ .gitignore
- ▷ package-lock.json U
- ▷ package.json M



PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: node



```
Maximilians-MBP:nodejs-complete-guide mschwarzmueller$ npm install --save-dev nodemon
Maximilians-MBP:nodejs-complete-guide mschwarzmueller$ npm install --save-dev nodemon
(⎈-console) :: fetchMetadata: sill resolveWithNewModule chokidar@2.0.4 checking installable status
```

## OUTLINE

0:05:23

EXPLORER

package.json



## NODEJS-COMPLETE-GUIDE

- ↳ .vscode
- ↳ node\_modules
- ↳ .gitignore
- ↳ package-lock.json
- ↳ package.json M

```
1  {
2    "name": "nodejs-complete-guide",
3    "version": "1.0.0",
4    "description": "",
5    "main": "index.js",
6    "scripts": {
7      "test": "echo \"Error: no test specified\" && exit 1",
8      "start": "nodemon app.js" ←
9    },
10   "repository": {
11     "type": "git",
12     "url": "https://git-codecommit.us-east-1.amazonaws.com/v1/repos/udemy-course-nodejs-com"
13   },
14   "author": "",
15   "license": "ISC",
16   "dependencies": {
17     "express": "^4.16.3"
18   },
19   "devDependencies": {
20     "nodemon": "^1.18.4"
21   }
22 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: bash



```
+ nodemon@1.18.4
added 295 packages from 152 contributors and audited 2371 packages in 10.226s
found 0 vulnerabilities
```

OUTLINE

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

0:05:08



EXPLORER

package.json

app.js

x



## NODEJS-COMPLETE-GUIDE

- › .vscode
- › node\_modules
- › .gitignore
- js app.js U
- js package-lock.json U
- js package.json M

```
1 const express = require('express');
2
3 const app = express();
4
5 app.listen(8080);
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: node



```
added 295 packages from 152 contributors and audited 2371 packages in 10.226s
found 0 vulnerabilities
```

```
Maximilians-MBP:nodejs-complete-guide mschwarzmueller$ npm install --save body-parser
((          )) : extract:body-parser: verb lock using /Users/mschwarzmueller/.npm/_locks/staging-104
```

OUTLINE

23-rest-intro\* ↗ ✘ 0 ▲ 0

Ln 5, Col 18 Spaces: 4 UTF-8 LF JavaScript Prettier



EXPLORER

package.json

app.js

feed.js controllers

feed.js routes



## NODEJS-COMPLETE-GUIDE

- .vscode
- controllers
  - feed.js
- node\_modules
- routes
  - feed.js
  - ←
  - U
- .gitignore
- JS app.js
- JS package-lock.json
- JS package.json M

```
1 const express = require('express');
2
3 const feedController = require('../controllers/feed');
4
5 const router = express.Router();
6
7 // GET /feed/posts
8 router.get('/posts', feedController.getPosts);
9
10 module.exports = router;
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: bash + □ ×

```
added 5 packages from 18 contributors, updated 3 packages, moved 3 packages and audited 2401 packages in 3
.034s
found 0 vulnerabilities
```

OUTLINE

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

0:00:04

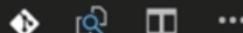
23-rest-intro\* ↻ ✘ 0 ▲ 0

Ln 10, Col 25 Spaces: 4 UTF-8 LF JavaScript Prettier



EXPLORER

package.json app.js feed.js controllers feed.js routes



## NODEJS-COMPLETE-GUIDE

- .vscode
- controllers
  - ↳ feed.js 
- node\_modules
- routes
  - ↳ feed.js
- ↳ .gitignore
- ↳ app.js
- ↳ package-lock.json
- ↳ package.json M

```
1 exports.getPosts = (req, res, next) => {
2
3 };
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: bash



```
added 5 packages from 18 contributors, updated 3 packages, moved 3 packages and audited 2401 packages in 3
.034s
found 0 vulnerabilities
```

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

EXPLORER

package.json

app.js

feed.js controllers

feed.js routes



NODEJS-COM...

- .vscode
- controllers   
feed.js
- node\_modules
- routes   
feed.js
- .gitignore
- app.js
- package-lock.json
- package.json M

```
1 const express = require('express');
2
3 const feedRoutes = require('./routes/feed');
4
5 const app = express();
6
7 app.use('/feed', feedRoutes);
8
9 app.listen(8080);
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: bash



```
added 5 packages from 18 contributors, updated 3 packages, moved 3 packages and audited 2401 packages in 3
.034s
found 0 vulnerabilities
```

OUTLINE

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EXPLORER

package.json

app.js

feed.js controllers

feed.js routes



## NODEJS-COMPLETE-GUIDE

.vscode

controllers

feed.js

node\_modules

routes

feed.js

.gitignore

app.js

package-lock.json

package.json

```
1 exports.getPosts = (req, res, next) => {
2   res.render();
3 };
```

will not use this as REST works  
with data not views.

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: bash



```
added 5 packages from 18 contributors, updated 3 packages, moved 3 packages and audited 2401 packages in 3
.034s
found 0 vulnerabilities
```

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

0:13:01

23-rest-intro\*

0 1 0

Ln 2, Col 5 (13 selected) Spaces: 4 UTF-8 LF JavaScript Prettier



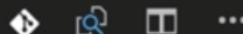
EXPLORER

package.json

app.js

feed.js controllers

feed.js routes



## NODEJS-COMPLETE-GUIDE

.vscode

controllers

feed.js

node\_modules

routes

feed.js

.gitignore

app.js

package-lock.json

package.json

```
1 exports.getPosts = (req, res, next) => {
2   res.status(200).json({
3     posts: [{ title: 'First Post', content: 'This is the first post!' }]
4   });
5 }
6 
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: bash



```
added 5 packages from 18 contributors, updated 3 packages, moved 3 packages and audited 2401 packages in 3
.034s
found 0 vulnerabilities
```

0:02:25

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

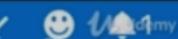
0:11:03

23-rest-intro\*

007 Sending Requests &amp; Responses and Working with Post



Ln 6, Col 1 Spaces: 4 UTF-8 LF JavaScript Prettier: ✓



localhost:8080/feed/posts

```
{"posts": [{"title": "First Post", "content": "This is the first post!"}]}
```

Elements Console Network > | : X

Filter Hide data URLs

All XHR JS CSS Img Media Font Doc WS Manifest Other

6 ms 152 ms 185 ms 319 ms 335 ms

Name	Headers	Preview	Response	Cookies	Timing
posts	General				
ng-vali...					
<b>Response Headers</b> view source					
Connection: keep-alive					
Content-Length: 70					
Content-Type: application/json; charset=utf-8					
Date: Tue, 09 Oct 2018 08:47:41 GMT					
ETag: W/"46-xiAzcXt9benFL7DbNn8fI64bu8Q"					
X-Powered-By: Express					
<b>Request Headers</b> view source					
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8					
Accept-Encoding: gzip, deflate, br					
Accept-Language: en-US,en;q=0.9,de-DE;q=0.8,de;q=0.7					
Cache-Control: no-cache					

2 requests l...

U Biscay

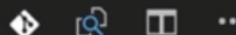
EXPLORER

package.json

app.js

feed.js controllers

feed.js routes



## NODEJS-COMPLETE-GUIDE

.vscode

controllers

feed.js

node\_modules

routes

feed.js

.gitignore

app.js

package-lock.json

package.json



```
1 const express = require('express');
2 const bodyParser = require('body-parser');
3
4 const feedRoutes = require('./routes/feed');
5
6 const app = express();
7
8 // app.use(bodyParser.urlencoded()); // x-www-form-urlencoded <form>
9 app.use(bodyParser.json()); // application/json
10
11 app.use('/feed', feedRoutes);
12
13 app.listen(8080);
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: node

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

OUTLINE

23-rest-intro\* 0 ▲ 0

Ln 8, Col 62 (21 selected) Spaces: 4 UTF-8 LF JavaScript Prettier: ✓

0:417

EXPLORER

package.json app.js feed.js controllers feed.js routes



NODEJS-COMPLETE-GUIDE

- .vscode
- controllers
  - feed.js
- node\_modules
- routes
  - feed.js
- .gitignore
- app.js
- package-lock.json
- package.json

```
1 exports.getPosts = (req, res, next) => {
2   res.status(200).json({
3     posts: [{ title: 'First Post', content: 'This is the first post!' }]
4   });
5 }
6
7 exports.createPost = (req, res, next) => {
8   const title = req.body.title; ←
9   const content = req.body.content; ←
10  // Create post in db
11  res.status(201).json({
12    message: 'Post created successfully!',
13    post: { id: new Date().toISOString(), title: title, content: content }
14  });
15 }
16
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: node

```
[nodemon] 1.18.4
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: ***!
[nodemon] starting `node app.js`
```

OUTLINE



0:04:28

23-rest-intro\* 0 ▲ 0

Ln 8, Col 24 (7 selected) Spaces: 4 UTF-8 LF JavaScript Prettier:✓ 1 my

NEW

Runner Import 

Builder

Team Library

 SYNC OFF

Sign In



Filter 

History  Collections 

http://localhost:8080/   

GET  http://localhost:8080/feed/post  Params  Send  Save 

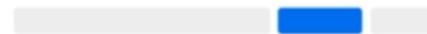
Code

Authorization Headers Body Pre-request Script Tests

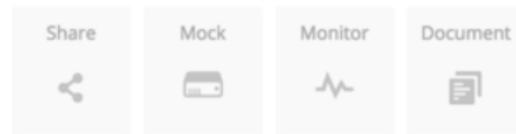
Key	Value	Description	***	Bulk Edit	Presets ▾
New key	Value	Description			

Response

Hit the Send button to get a response.



Do more with requests



EXPLORER

package.json

app.js

feed.js controllers

feed.js routes



NODEJS-COMPLETE-GUIDE

- .vscode
- controllers
  - JS feed.js
- node\_modules
- routes
  - JS feed.js
- .gitignore
- JS app.js
- JS package-lock.json
- JS package.json

```
1  const express = require('express');
2
3  const feedController = require('../controllers/feed');
4
5  const router = express.Router();
6
7  // GET /feed/posts
8  router.get('/posts', feedController.getPosts);
9
10 // POST /feed/post
11 router.post('/post', feedController.createPost);
12
13 module.exports = router;
```

0:11:07

OUTLINE

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: node ✖

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

0:02:21

NEW

Runner Import

Builder

Team Library

SYNC OFF

Sign In



Filter

http://localhost:8080/ ● + \*\*\*

POST http://localhost:8080/feed/post Params Send Save Code

Authorization Headers (1) Body Pre-request Script Tests

form-data x-www-form-urlencoded raw binary JSON (application/json)

```
1 - {  
2   "title": "My second Post!",  
3   "content": "This is the content of my second post."  
4 }
```

Body Cookies Headers (6) Test Results Status: 201 Created Time: 79 ms

Pretty Raw Preview JSON -

```
1 - {  
2   "message": "Post created successfully!",  
3   "post": [  
4     {"id": "2018-10-09T08:58:32.588Z",  
5     "title": "My second Post!",  
6     "content": "This is the content of my second post."  
7   }  
8 }
```



CodePen - Front End Development + https://codepen.io

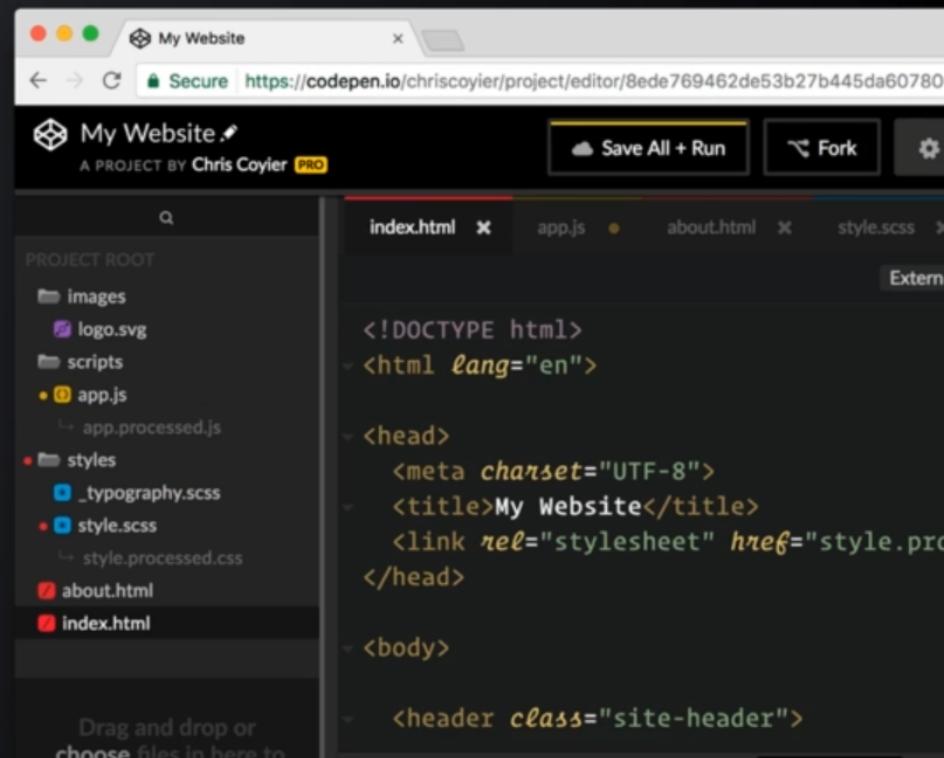
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This is **CodePen Projects!**



PROJECT ROOT

- images
- logo.svg
- scripts
- app.js
- app.processed.js
- styles
- \_typography.scss
- style.scss
- style.processed.css
- about.html
- index.html

Drag and drop or choose files in here to

index.html app.js about.html style.scss

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <title>My Website</title>
    <link rel="stylesheet" href="style.css" />
  </head>
  <body>
    <header class="site-header">
```

PREVIEW: about.html

CodePen for TEAMS CodePen for EDUCATION CodePen for PRIVACY CodePen for WRITING

0:00:28 0:10:05

008 REST APIs, Clients & CORS Errors

Create a New Pen +  
https://codepen.io/pens?editors=1010

Untitled  
A PEN BY CAPTAIN ANONYMOUS

Save Settings Change View Log In Sign Up

HTML

```
<button id="get">Get Posts</button>
<button id="post">Create a Post</button>
```

JS

```
const getButton = document.getElementById('get');
const postButton = document.getElementById('post');

getButton.addEventListener('click', () => {
  fetch('http://localhost:8080/feed/posts')
    .then(res => res.json())
    .then(resData => console.log(resData))
    .catch(err => console.log(err));
});
```



Get Posts Create a Post

Create a New Pen +

https://codepen.io/peny?editors=1010

Untitled  
A PEN BY CAPTAIN ANONYMOUS

Save Settings Change View

HTML

```
<button id="get">Get Posts</button>
<button id="post">Create a Post</button>
```

JS

```
const getButton = document.getElementById('get');
const postButton = document.getElementById('post');

getButton.addEventListener('click', () => {
  fetch('http://localhost:8080/feed/posts')
    .then(res => res.json())
    .then(resData => console.log(resData))
    .catch(err => console.log(err));
});
```

Get Posts Create a Post

Elements Console Network > ✘ 1 ⚠ 1 | :

top Filter Default levels Group

Failed to load http://localhost:8080/feed/pos\_index.html:1  
ts: No 'Access-Control-Allow-Origin' header is present on the requested resource. Origin 'https://s.codepen.io' is therefore not allowed access. If an opaque response serves your needs, set the request's mode to 'no-cors' to fetch the resource with CORS disabled.

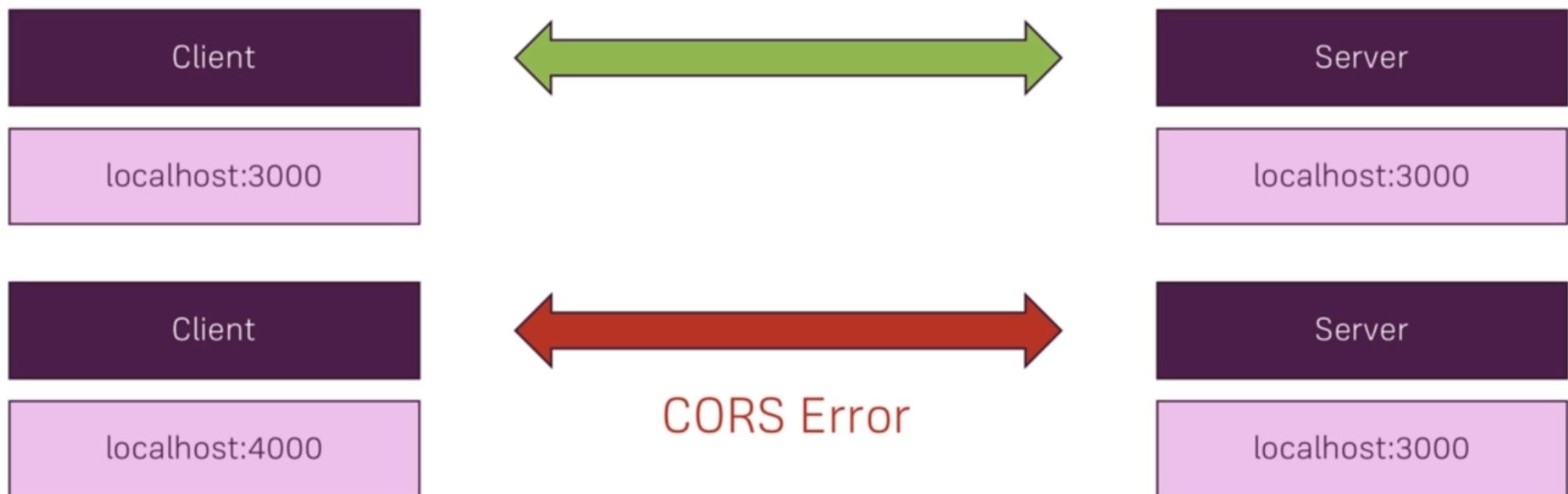
TypeError: Failed to fetch

Cross-Origin Read Blocking (CORB) blocked cross-origin response http://localhost:8080/feed/posts with MIME type application/json. See https://www.chromestatus.com/feature/5629709824032768 for more details.

can only be solved at server side

# CORS?

## Cross-Origin Resource Sharing



## NODEJS-COMPLETE-GUIDE

- ↳ .vscode
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  - ↳ feed.js
- ↳ node\_modules
- ↳ routes
  - ↳ feed.js
- ↳ .gitignore
- ↳ app.js
- ↳ package-lock.json
- ↳ package.json

```
1  const express = require('express');
2  const bodyParser = require('body-parser');
3
4  const feedRoutes = require('./routes/feed');
5
6  const app = express();
7
8  // app.use(bodyParser.urlencoded()); // x-www-form-urlencoded <form>
9  app.use(bodyParser.json()); // application/json
10
11 app.use((req, res, next) => {
12     res.setHeader('Access-Control-Allow-Origin', '*');
13     res.setHeader('Access-Control-Allow-Methods', 'GET, POST, PUT, PATCH, DELETE');
14     res.setHeader('Access-Control-Allow-Headers', 'Content-Type, Authorization');
15     next();
16 });
17
18 app.use('/feed', feedRoutes);
19
20 app.listen(8080);
```

for all sites/users

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: node

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

OUTLINE

Create a New Pen +  
https://codepen.io/pens?editors=1010

Untitled  
A PEN BY CAPTAIN ANONYMOUS

Save Settings Change View

HTML CSS JS

```
1 <button id="get">Get Posts</button>
2 <button id="post">Create a Post</button>
```

```
1 const getButton = document.getElementById('get');
2 const postButton = document.getElementById('post');
3
4 getButton.addEventListener('click', () => {
5   fetch('http://localhost:8080/feed/posts')
6     .then(res => res.json())
7     .then(resData => console.log(resData))
8     .catch(err => console.log(err));
9});
```

Get Posts Create a Post

Elements Console Network >

top Filter Default levels Group

console\_runner-ce303...a462c826d54a73.js:1

```
posts: Array(1)
  posts: Array(1)
    0:
      content: "This is the first post!"
      title: "First Post"
      __proto__: Object
    length: 1
    __proto__: Array(0)
  __proto__: Object
```

Console Assets %

Create a New Pen +

Untitled A PEN BY CAPTAIN ANONYMOUS

Save Settings Change View

Elements Console Network >

Filter Hide data URLs

All XHR JS CSS Img Media Font Doc WS Manifest Other

Hit ⌘ R to reload and capture filmstrip.

Get Posts Create a Post

JS

```
getButton.addEventListener('click', () => {
  fetch('http://localhost:8080/feed/posts')
    .then(res => res.json())
    .then(resData => console.log(resData))
    .catch(err => console.log(err));
});

postButton.addEventListener('click', () => {
  fetch('http://localhost:8080/feed/post', {
    method: 'POST',
    body: {
      title: 'A Codepen Post',
      content: 'Created via Codepen'
    }
});
}
```

Name Headers Preview Response Timing

Name	Headers	Preview	Response	Timing
index.html	▶ General			
console...	▶ Response Headers (9)			
css_live...	▼ Request Headers			
stopEx...	⚠ Provisional headers are shown			
boomer...	Content-Type: text/plain; charset=UTF-8			
index.htm...	Origin: https://s.codepen.io			
console...	User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X			
css_live...	10_13_6) AppleWebKit/537.36 (KHTML, like Gecko) C			
stopEx...	hrome/69.0.3497.100 Safari/537.36			
boomer...				
index.htm...				
console...				
css_live...				
stopEx...				
post				

Request Payload [object Object]

85 requests...

Console Assets ⌘

CodePen

Create a New Pen +

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Save Settings Change View

Elements Console Network >

Filter Hide data URLs

All XHR JS CSS Img Media Font Doc WS Manifest Other

Hit ⌘ R to reload and capture filmstrip.

Name Headers Preview Response Timing

post

General

Response Headers (9)

Request Headers

⚠ Provisional headers are shown

Content-Type: text/plain; charset=UTF-8

Origin: https://s.codepen.io

User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X AppleWebKit/537.36 (KHTML, like Gecko) Chrome/69.0.0 Safari/537.36

Request Payload view source

{title: "A Codepen Post", content: "Created via Codepen"}  
title: "A Codepen Post"

Console Assets ⌘

1 requests |...

CodePen

## NODEJS-COMPLETE-GUIDE

- .vscode
- controllers
  - JS feed.js
- node\_modules
- routes
  - JS feed.js
- ▷ .gitignore
- JS app.js M
- JS package-lock.json
- JS package.json

```
1  const express = require('express');
2  const bodyParser = require('body-parser');
3
4  const feedRoutes = require('./routes/feed');
5
6  const app = express();
7
8  // app.use(bodyParser.urlencoded()); // x-www-form-urlencoded <form>
9  app.use(bodyParser.json()); // application/json
10
11 app.use((req, res, next) => {
12     res.setHeader('Access-Control-Allow-Origin', '*');
13     res.setHeader('Access-Control-Allow-Methods', 'GET, POST, PUT, PATCH, DELETE');
14     res.setHeader('Access-Control-Allow-Headers', 'Content-Type, Authorization');
15     next();
16 });
17
18 app.use('/feed', feedRoutes);
19
20 app.listen(8080);
```



use in next slide

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: node

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

Create a New Pen + https://codepen.io/perry?editors=1010

Untitled A PEN BY CAPTAIN ANONYMOUS

Save Settings Change View

HTML JS CSS

```
1 <button id="get">Get Posts</button>
2 <button id="post">Create a Post</button>
3
4
5
6
7     .then(resData => console.log(resData))
8     .catch(err => console.log(err));
9 }
10
11 postButton.addEventListener('click', () => {
12   fetch('http://localhost:8080/feed/post', {
13     method: 'POST',
14     body: JSON.stringify({
15       title: 'A Codepen Post',
16       content: 'Created via Codepen'
17     }),
18     headers: {
19       'Content-Type': 'application/json'
20     }
21 })
```

Get Posts Create a Post

Elements Console Network >

top Filter Default levels Gro

VM1400 console runne...a462c826d54a73.js:1

▼ {message: "Post created successfully!", post: {...}}

    message: "Post created successfully!"

    post:

        id: "2018-10-09T09:14:46.264Z"

        ▶ \_\_proto\_\_: Object

        ▶ \_\_proto\_\_: Object

VM1400 console runne...a462c826d54a73.js:1

► {message: "Post created successfully!", post: {...}}

VM1454 console runne...a462c826d54a73.js:1

► {message: "Post created successfully!", post: {...}}

    console\_runner-ce303...a462c826d54a73.js:1

    ▼ {message: "Post created successfully!", post: {...}}

        message: "Post created successfully!"

        post:

            content: "Created via Codepen"

            id: "2018-10-09T09:16:34.760Z"

            title: "A Codepen Post"

            ▶ \_\_proto\_\_: Object

            ▶ \_\_proto\_\_: Object

Earlier

Console Assets %

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Untitled A PEN BY CAPTAIN ANONYMOUS

Save Settings Change View

HTML JS CSS

```
1 <button id="get">Get Posts</button>
2 <button id="post">Create a Post</button>
3
4
5
6 .then(res => res.json())
7 .then(resData => console.log(resData))
8 .catch(err => console.log(err));
9 }
10
11 postButton.addEventListener('click', () => {
12   fetch('http://localhost:8080/feed/post', {
13     method: 'POST',
14     body: JSON.stringify({
15       title: 'A Codepen Post',
16       content: 'Created via Codepen'
17     }),
18     headers: {
19       'Content-Type': 'application/json'
20     }
21 })
```

Get Posts Create a Post

Simple browser mechanism ensures next request must succeed if it is allowed.

Elements Console Network > X 1 : X

Filter Hide data URLs

All XHR JS CSS Img Media Font Doc WS Manifest Other

Hit ⌘ R to reload and capture filmstrip.

Name	Headers	Preview	Response	Timing
post				
post				

Request URL: http://localhost:8080/feed/post  
Request Method: OPTIONS  
Status Code: 200 OK  
Remote Address: [::1]:8080  
Referrer Policy: no-referrer when-downgrade

► Response Headers (10)

▼ Request Headers

- ⚠ Provisional headers are shown
- Access-Control-Request-Headers: content-type
- Access-Control-Request-Method: POST
- Origin: https://s.codepen.io
- User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10\_13\_6) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/69.0.3497.100 Safari/537.36

2 requests l... 0:06:12

Console Assets % 009 Sending POST Requests

check

# Module Summary

## REST Concepts & Ideas

- REST APIs are all about data, no UI logic is exchanged
- REST APIs are normal Node servers which expose different endpoints (Http method + path) for clients to send requests to
- JSON is the common data format that is used both for requests and responses
- REST APIs are decoupled from the clients that use them

## Requests & Responses

- Attach data in JSON format and let the other end know by setting the “Content-Type” header
- CORS errors occur when using an API that does not set CORS headers