9. Starting with Express.js

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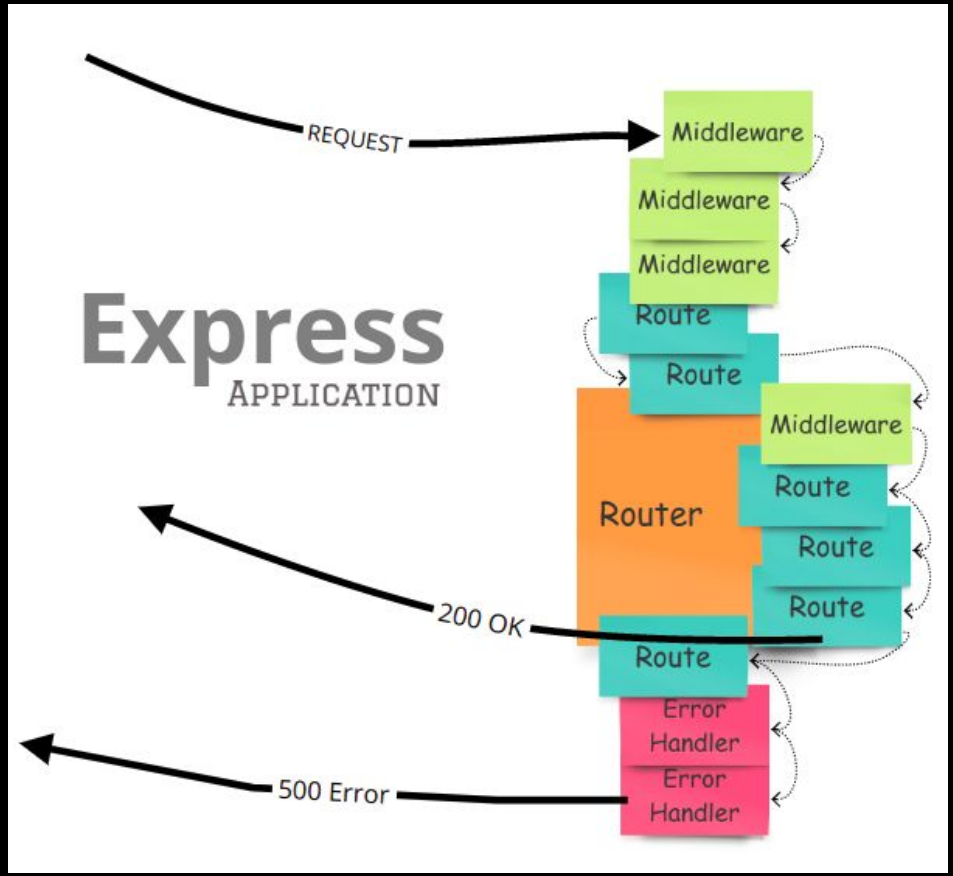
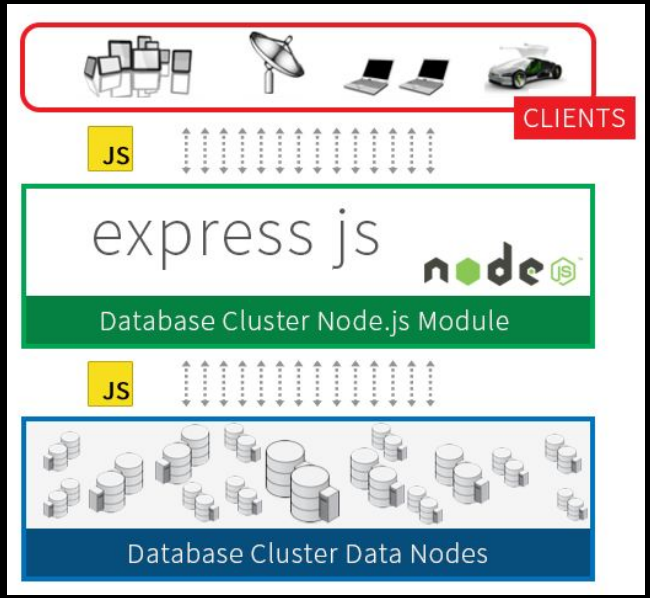
9.1 What is Express.js

1. Express.js is a minimal and flexible web application framework for Node.js.
2. It provides a robust set of features for building single-page, multi-page, and hybrid web applications.
3. Express.js simplifies server-side coding by providing a layer of fundamental web application features.



9.2 Need of Express.js

1. Express.js Simplifies Server Creation: Helps in quickly setting up and running a web server without the need for complex coding.
2. Routing Management: Provides a powerful routing mechanism to handle URLs and HTTP methods effectively.
3. Middleware Support: Allows the use of middleware to handle requests, responses, and any middle operations, making code modular and maintainable.
4. API Development: Facilitates easy and efficient creation of RESTful APIs.
5. Community and Plugins: Has a large ecosystem with numerous plugins and extensions, accelerating development time.



9.3 Installing Express.js

```
$ npm install express
```

To install Express temporarily and not add it to the dependencies list:

```
$ npm install express --no-save
```

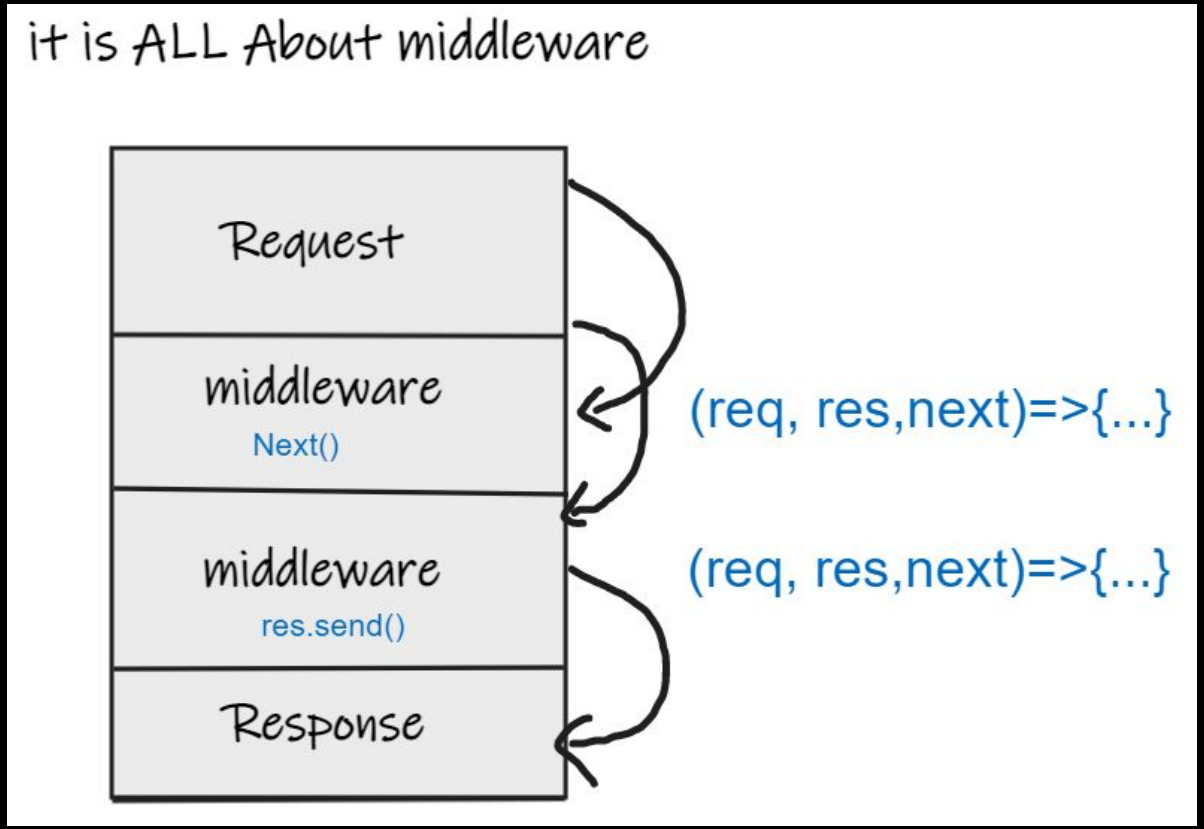
> By default with version npm 5.0+, `npm install` adds the module to the `dependencies` list in the `package.json` file; with earlier versions of npm, you must specify the `--save` option explicitly. Then, afterwards, running `npm install` in the app directory will automatically install modules in the dependencies list.

9.3 Installing Express.js

```
// Core Modules
const http = require('http');
// External Modules
const express = require('express');

const app = express();

const server = http.createServer(app);

const PORT = 3000;
server.listen(PORT, () => {
  console.log(`Server running at http://localhost:${PORT}/`);
});
```

```
prashantjain@Prashants-Mac-mini node % npm start

> node@1.0.0 start
> nodemon app.js

[nodemon] 3.1.7
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,cjs,json
[nodemon] starting `node app.js`
Server running at http://localhost:3000/
```

9.4 Adding Middleware



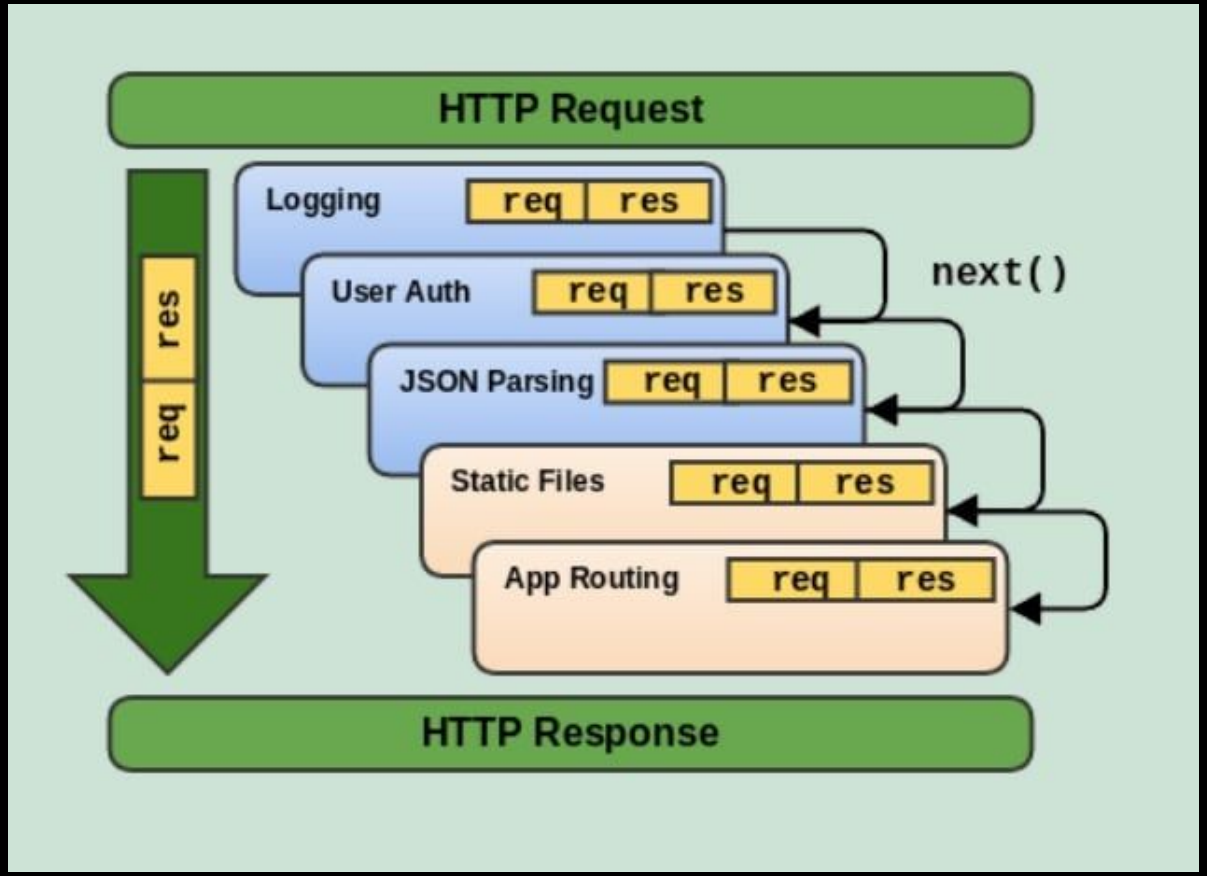
9.4 Adding Middleware

EXPRESS Js

```
// Adding Middleware
app.use((req, res, next) => {
  console.log("First Middleware", req.url, req.method);
  next();
});

app.use((req, res, next) => {
  console.log("Second Middleware", req.url, req.method);
});

const server = http.createServer(app);
```

```
[nodemon] restarting due to changes...
[nodemon] starting `node app.js`
Server running at http://localhost:3000/
First Middleware / GET
Second Middleware / GET
```

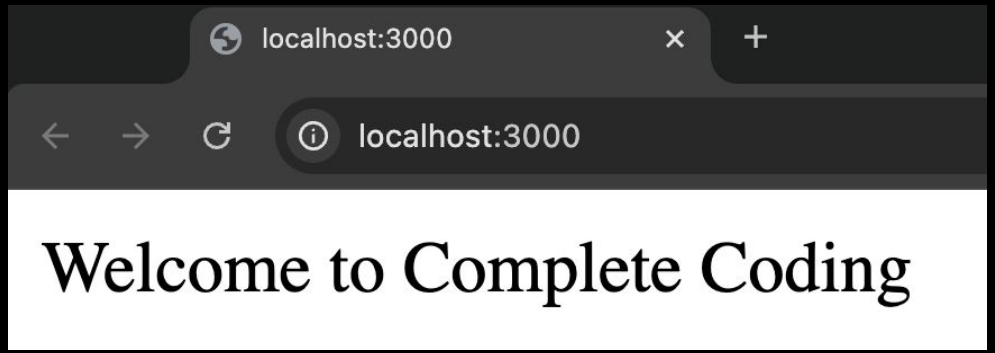
9.4 Adding Middleware

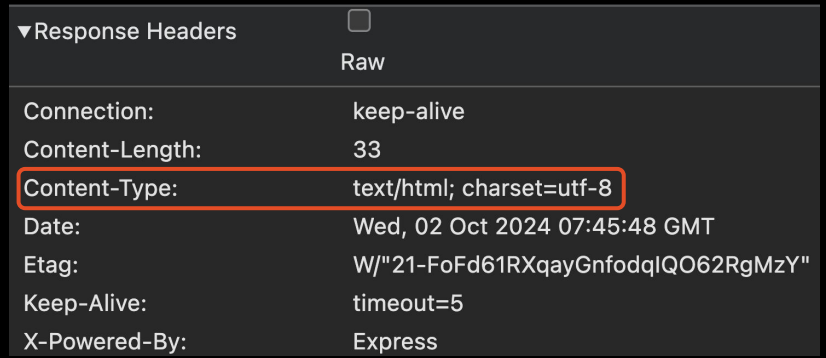


9.5 Sending Response

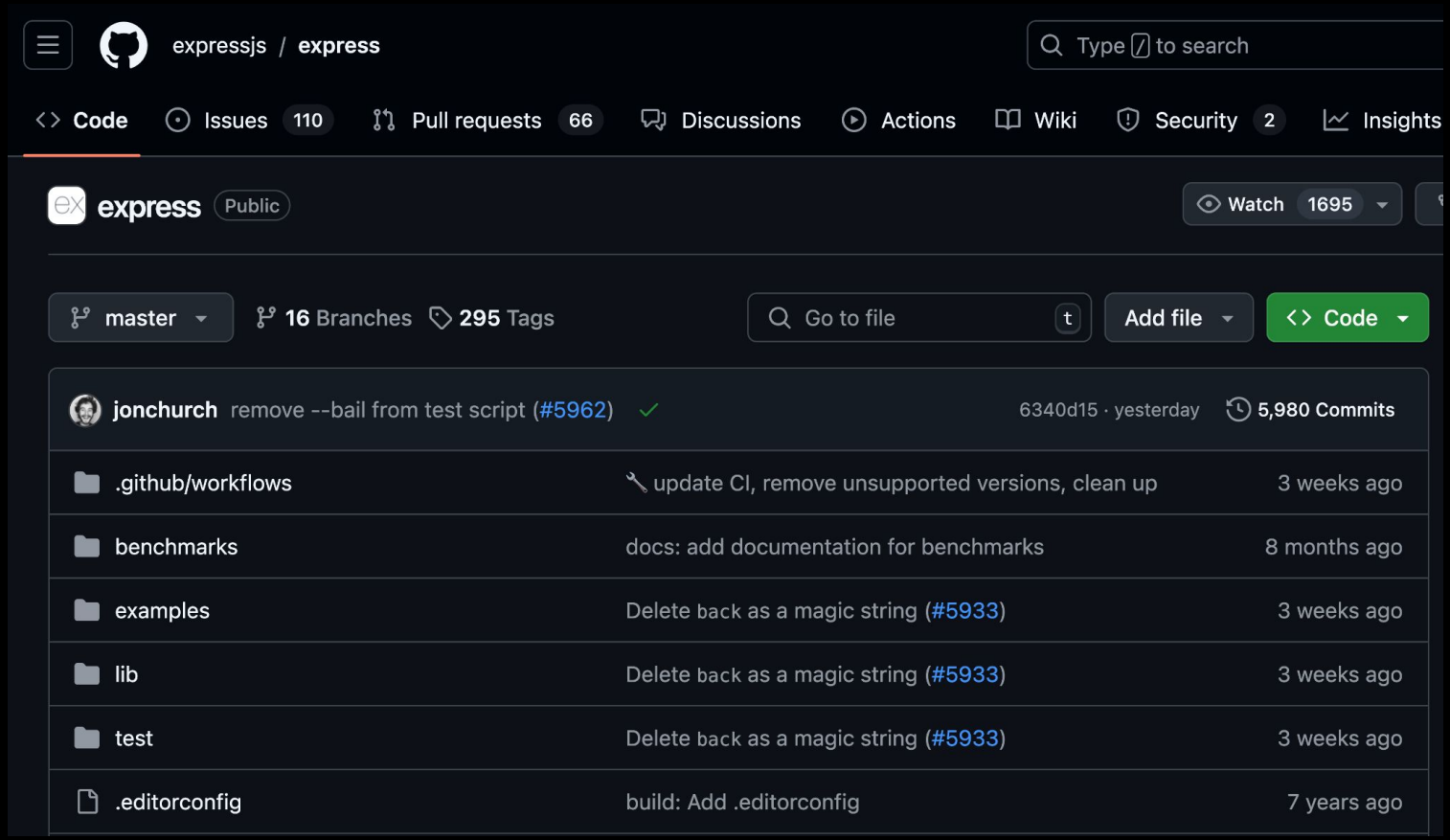
EXPRESS Js

```
app.use((req, res, next) => {
  console.log("Second Middleware", req.url, req.method);
  res.send('<p>Welcome to Complete Coding</p>');
});
```





9.6 Express DeepDive



9.6 Express DeepDive

```
101   /**
102    * Send a response.
103    *
104    * Examples:
105    *
106    *     res.send(Buffer.from('wahoo'));
107    *     res.send({ some: 'json' });
108    *     res.send('<p>some html</p>');
109    *
110    * @param {string|number|boolean|object|Buffer} body
111    * @public
112    */
113
114   res.send = function send(body) {
115     var chunk = body;
116     var encoding;
117     var req = this.req;
118     var type;
119
120     // settings
121     var app = this.app;
122
```

```
// string defaulting to html
case 'string':
  if (!this.get('Content-Type')) {
    this.type('html');
  }
  break;
case 'boolean':
```

9.6 Express DeepDive

```
// Core Modules
const http = require('http');
// External Modules
const express = require('express');

const app = express();

// Adding Middleware
app.use((req, res, next) => {
  console.log("First Middleware", req.url, req.method);
  next();
});

app.use((req, res, next) => {
  console.log("Second Middleware", req.url, req.method);
  res.send('<p>Welcome to Complete Coding</p>');
});

const PORT = 3000;
app.listen(PORT, () => {
  console.log(`Server running at http://localhost:${PORT}/`);
});
```

9.7 Handling Routes

app.use([path,] callback [, callback...])

Mounts the specified middleware function or functions at the specified path: the middleware function is executed when the base of the requested path matches `path`.

Arguments

Argument	Description	Default
`path`	The path for which the middleware function is invoked; can be any of: • A string representing a path. • A path pattern. • A regular expression pattern to match paths. • An array of combinations of any of the above. For examples, see Path examples.	'/' (root path)

9.7 Handling Routes

EXPRESS Js

```
const app = express();
app.use('/', (req, res, next) => {
  console.log("Hello World");
  //res.send('<p>Welcome to Submit Details Page</p>');
  next();
});

app.use('/submit-details', (req, res, next) => {
  console.log("Second Middleware", req.url, req.method);
  res.send('<p>Welcome to Submit Details Page</p>');
});

app.use('/', (req, res, next) => {
  console.log("Second Middleware", req.url, req.method);
  res.send('<p>Welcome to Complete Coding</p>');
});
```

1. Order matters
2. Can not call next() after send()
3. “/” matches everything
4. Calling res.send implicitly calls res.end()