

Node.js + Express Full Stack Starter Workbook

1. Installing Node.js and npm

1. Go to <https://nodejs.org/>
2. Download the LTS version and run the installer.
3. Open VS Code, then Terminal > New Terminal.
4. Check versions:

```
node -v
```

```
npm -v
```

2. Initialize a New Project in VS Code

1. In VS Code terminal:

```
cd Desktop
```

```
mkdir myapp
```

```
cd myapp
```
2. Initialize npm:

```
npm init -y
```

3. Install and Setup Express.js

1. Install Express:

```
npm install express
```
2. Create index.js:

```
const express = require('express');
```

```
const app = express();
```

```
app.get('/', (req, res) => res.send('Hello World!'));
```

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

4. Install and Use EJS

1. Install EJS:

```
npm install ejs
```
2. Set view engine in index.js:

```
app.set('view engine', 'ejs');
```
3. Create views/index.ejs with HTML content.

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5. Connect to MySQL

1. Install MySQL package:

```
npm install mysql2
```

2. Connect in index.js:

```
const db = mysql.createConnection({...});  
db.connect(...);
```

6. Fetch and Display Data with EJS

1. Create MySQL table `users`.

2. Insert data:

```
INSERT INTO users (name, email) VALUES (...);
```

3. Route:

```
app.get('/users', (req, res) => {  
  db.query('SELECT * FROM users', (err, results) => {  
    res.render('users', { users: results });  
  });  
});
```

4. Create views/users.ejs with a loop to display users.

7. Project Structure

myapp/

??? node_modules/

??? views/

? ??? index.ejs

? ??? users.ejs

??? package.json

??? index.js

8. Learning Outcomes

- Installed Node.js and npm
- Used Express.js to create a web server
- Rendered dynamic HTML with EJS

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- Connected and queried MySQL
- Built the foundation for a full-stack web app

9. What's Next?

- Form handling (POST)
- Auth (sessions, JWT)
- Validation & security
- Deployment (Render, Railway, etc.)
- Advanced routing & MVC structure