Welcome to the CoGrammar Lecture: Node.js

The session will start shortly...

Questions? Drop them in the chat. We'll have dedicated moderators answering questions.

Full Stack Web Development Session Housekeeping

- The use of disrespectful language is prohibited in the questions, this is a supportive, learning environment for all - please engage accordingly. **(Fundamental British Values: Mutual Respect and Tolerance)**
- No question is daft or silly - **ask them!**
- There are **Q&A sessions** midway and at the end of the session, should you wish to ask any follow-up questions. Moderators are going to be answering questions as the session progresses as well.
- If you have any questions outside of this lecture, or that are not answered during this lecture, please do submit these for upcoming Academic Sessions. You can submit these questions here: **Questions**

Full Stack Web Development Session Housekeeping cont.

- For all **non-academic questions**, please submit a query: **www.hyperiondev.com/support**
- Report a **safeguarding** incident: **www.hyperiondev.com/safeguardreporting**
- We would love your **feedback** on lectures: **Feedback on Lectures**

Skills Bootcamp
8-Week Progression Overview

Fulfil 4 Criteria to Graduation

✅ Criterion 1: Initial Requirements

Timeframe: First 2 Weeks
Guided Learning Hours (GLH): Minimum of 15 hours
Task Completion: First four tasks

Due Date: 24 March 2024

✅ Criterion 2: Mid-Course Progress

60 Guided Learning Hours

Data Science - **13 tasks**
Software Engineering - **13 tasks**
Web Development - **13 tasks**

Due Date: 28 April 2024

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Skills Bootcamp Progression Overview

✅ Criterion 3: Course Progress

Completion: All mandatory tasks, including Build Your Brand and resubmissions by study period end
Interview Invitation: Within 4 weeks post-course
Guided Learning Hours: Minimum of 112 hours by support end date (10.5 hours average, each week)

✅ Criterion 4: Demonstrating Employability

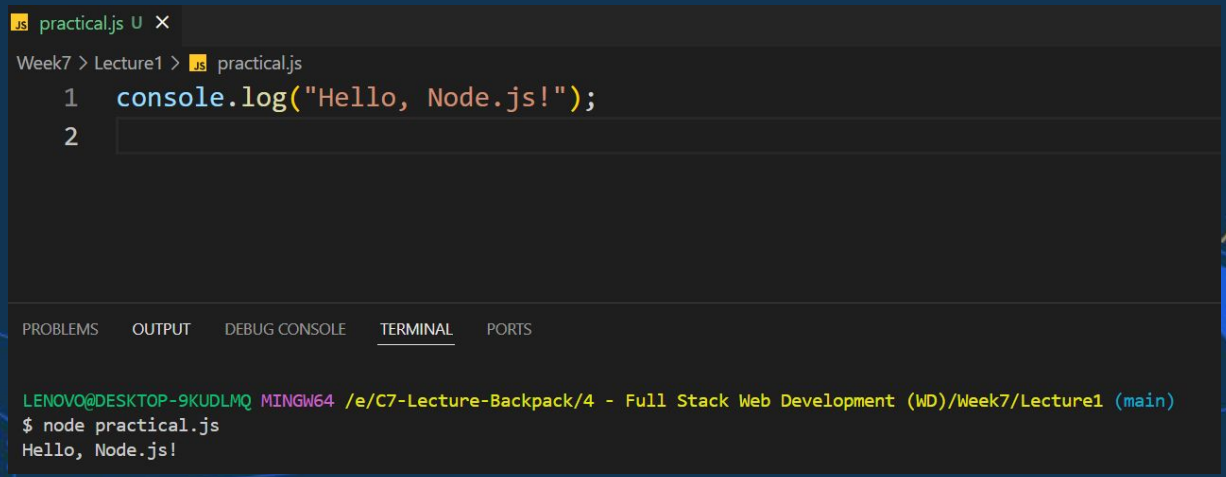
Final Job or Apprenticeship Outcome: Document within 12 weeks post-graduation
Relevance: Progression to employment or related opportunity

Learning Objectives

- Explore the concept of modules in Node.js and learn how to create, import, and use modules effectively.
- Gain familiarity with NPM (Node Package Manager) and its role in managing dependencies, versioning, and scripts.
- Develop proficiency in setting up a basic Node.js server using the built-in http module.

What is Node.js?

- Node.js is a runtime environment that allows you to run JavaScript code on the server-side.
- It uses an event-driven, non-blocking I/O model, making it efficient for handling asynchronous operations.



What are Modules?

- Modules in Node.js are encapsulated units of functionality that can be reused throughout your application.
- They promote code organization, maintainability, and reusability.
- Node.js implements the CommonJS module system, allowing modules to be defined using require() and exported using module.exports.

Creating and Using Modules

```
const greet = () => {
  console.log("Hello, world!");
};
module.exports = greet;
```

```
const greet = require("./greet");
greet();
```

Core Modules vs. User-defined Modules

- Node.js provides several core modules like http, fs, and path, which can be used without installation.
- User-defined modules are created by developers to encapsulate specific functionality.

NPM (Node Package Manager)

- NPM is the default package manager for Node.js, used for installing, managing, and sharing packages of JavaScript code.
- It provides access to a vast repository of open-source packages and tools for Node.js development.

Let’s Breathe!

Let’s take a small break before moving on to the next topic.

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Managing Dependencies with NPM

- Define project dependencies in the package.json file.
- Use npm install to install dependencies listed in package.json.

```
$ npm install express
```

Creating a package.json File

- Use **npm init** to generate a package.json file interactively or with default values.
- **package.json** serves as the manifest for your project, documenting project metadata, dependencies, and scripts.

Understanding package.json Structure

- **name:** The name of the project.
- **version:** The version of the project.
- **dependencies:** List of project dependencies and their version specifications.
- **scripts:** Custom scripts for tasks like testing, building, and deployment.

Understanding package.json Structure

Managing Scripts in package.json

- Use the **scripts** field in **package.json** to define custom scripts.
- Scripts can be executed using **npm run <script-name>**.

```
"scripts": {
  "start": "node index.js",
  "test": "mocha"
}
```

Setting Up a Node.js Server

- Use the built-in http module to create an HTTP server.
- Listen for incoming requests on a specified port and handle them accordingly.

```
const http = require("http");

const server = http.createServer((req, res) => {
  res.writeHead(200, { "Content-Type": "text/plain" });
  res.end("Hello, world!\n");
});

const PORT = process.env.PORT || 3000;
server.listen(PORT, () => {
  console.log(`Server is running on port ${PORT}`);
});
```

Questions and Answers

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Thank you for attending

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