

Corporate Training Program / Front-End Class
Fundamental Learning Assignment - Part 4

Assignment 0: Treehouse courses

1. [Node.js Basics](#)
2. [npm Basics](#)
3. [Express Basics](#)

Total length: 8 hours

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Assignment 1: Your First Web Server

To build your first web server for development, follow the steps below:

1. Install Node.js
2. Create a Node.js project by npm
3. Install Express module in your Node.js project by npm
4. Write a simple web server program and start it
5. Show an HTML page when you enter <http://localhost:3000/> in a browser's address bar (For example: a simple page including "Hello, My Server!" is an acceptable result.)

You may refer to this [document](#) in Express official website to complete this assignment.

Reminders:

1. You have to learn how to use the command line interface in your computer.
2. Set up your GitHub repository to ignore folder *node_modules*, which includes all the modules installed in your Node.js project. Refer to this [document](#).
3. All the assignments in this part should continue with the same Node.js project built in this assignment.

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Assignment 2: Build Backend API for Front-End

Even if you are heading to be a front-end engineer, it's much better to have some basic experience in the backend field. Now, try to modify your code executed on the server side to build a simple API. Your server should fulfill following client requests:

1. When a user enters <http://localhost:3000/getData> in a browser's address bar, show the "Lack of Parameter" message in the page.
2. When a user enters <http://localhost:3000/getData?number=xyz> in a browser's address bar, show the "Wrong Parameter" message in the page.
3. When a user enters <http://localhost:3000/getData?number=5>, they should get the result of $1+2+...+5$ in the page.
4. Generally speaking, when a user enters <http://localhost:3000/getData?number=正整數>, they can get result of $1+2+...+正整數$ in the page.

Hint: handle HTTP GET method and parameters with Express on the server side.

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Assignment 3: Connect to Backend API by AJAX

You have built your first API in the backend, then let's get back to the front-end. Follow the steps below to send an HTTP request to your backend API by AJAX.

1. Update your Express project to serve static files. You can refer to [this document](#).
2. Serve a static HTML file named *sum.html*. It means you can enter <http://localhost:3000/sum.html> in a browser's address bar to get this HTML page.
3. Write some JavaScript code in *sum.html* to make an HTTP request by AJAX to <http://localhost:3000/getData?number=10>, and get the result 55 from the server.
4. Write a simple user interface to let users enter a number and get a result from the server. (For a simple example, a text input and a button.)

Hint: refer to [W3Schools](#) or [MDN](#) for learning more about AJAX.