

# Random Number API

This is a basic HTTP server built with Node.js that responds with a random number to any incoming request. It's a great starting point for learning about APIs and server-side programming.

## What is an API?

An API (Application Programming Interface) is a set of rules and protocols that allows different software applications to communicate with each other. In this case, our API is a simple web server that responds to HTTP requests.

## How this code works

1. **Import the http module:** We use Node.js's built-in `http` module to create and manage the server.
2. **Create the server:** The `http.createServer()` method creates a new HTTP server. It takes a callback function that handles each incoming request.
3. **Handle requests:** For every request, we set the response headers (status code 200 for success, content type as plain text) and send back a random number between 0 and 1.
4. **Start listening:** The server starts listening on port 3000. When it's ready, it logs a message to the console.

## Running the API

1. Make sure you have Node.js installed on your system.
2. Open a terminal in this project directory.
3. Running `npm install` is not required, as this project does not have any external dependencies.
4. Run `npm start` or directly `node server.js`.
5. Open your web browser and go to `http://localhost:3000`.
6. You should see a random number (between 0 and 1) displayed in your browser.

## Next steps

- Try modifying the random number generation (e.g., integers, ranges).
- Add different routes (e.g., `/about`, `/time`).
- Learn about Express.js for more advanced routing and middleware.
- Explore different HTTP methods (GET, POST, etc.).

This basic server demonstrates the fundamentals of how web servers work and can be expanded into more complex APIs.