

Node.js – Learning Documentation (Beginner to Basic)

Front Page

Topic: Learning Node.js

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1. Introduction to Node.js

Node.js is a runtime environment that allows JavaScript to run outside the browser. It is mainly used to build backend servers and APIs.

In simple words, Node.js lets JavaScript work on the server.

2. Prerequisites

Before learning Node.js, you should know:

- Basic JavaScript
 - Basic HTML
 - How files and folders work
-

3. Installing Node.js

Download Node.js (LTS version).

To check installation:

```
node -v  
npm -v
```

If versions appear, Node.js is installed.

4. First Node.js Program

Create a file `app.js`

```
console.log("Hello Node.js");
```

Run using:

```
node app.js
```

5. How Node.js Works (Diagram Explanation in Words)

Diagram Explanation:

User → Browser / App → Node.js Server → Database → Node.js → User

Explanation:

The user sends a request. Node.js processes it, fetches data if needed, and sends a response back.

6. Core Concepts of Node.js

- JavaScript runtime
 - Event loop
 - Asynchronous execution
 - Single-threaded but fast
 - npm (Node Package Manager)
-

7. Creating a Simple Web Server

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

const server = http.createServer((req, res) => {
  res.write("Hello from Node.js Server");
  res.end();
});

server.listen(3000);
```

Open browser: <http://localhost:3000>

8. Introduction to Express.js

Express.js is a framework that simplifies Node.js development.

Install Express:

```
npm init -y
npm install express
```

Basic Express App:

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

app.get("/", (req, res) => {
  res.send("Hello from Express");
});
```

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

9. Simple API Example

```
app.get("/api/student", (req, res) => {  
  res.json({ name: "Abhijnan", class: 9 });  
});
```

This API sends data in JSON format.

10. What to Learn Next

- Express routing
 - Middleware
 - Database (MongoDB / Firebase)
 - Authentication
 - Building real projects
-

Conclusion

Node.js helps developers build fast and scalable backend applications using JavaScript.