Aim:

To develop a basic Node.js application that prints "Hello, World!" in response to an HTTP request.

Theory:

Node.js is a runtime environment that allows developers to run JavaScript code outside a web browser. It is built on the V8 JavaScript engine and follows an event-driven, non-blocking I/O model, making it efficient for building scalable applications.

A simple web server in Node.js can be created using the built-in `http` module. This module allows handling HTTP requests and responses, enabling the creation of lightweight web applications.

Requirements:

- Node.js installed on the system
- Code editor (e.g., VS Code)
- Terminal or command prompt

Steps to Build the Hello World App:

Step 1: Install Node.js

Download and install Node.js from https://nodejs.org. Verify the installation using:

```
node -v
```

Step 2: Create a New File

Create a new file named `server.js` in your project folder.

Step 3: Write the Node.js Code

Open `server.js` and add the following code:

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

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

server.listen(3000, () => {
    console.log('Server is running on http://localhost:3000');
});
```

Step 4: Run the Server

Navigate to the folder containing `server.js` and run the following command:

```
node server.js
```

Open a web browser and visit `http://localhost:3000`. You should see "Hello, World!" displayed on the screen.

Output:

When accessing `http://localhost:3000`, the message "Hello, World!" is displayed in the browser.

Conclusion:

In this practical, we successfully built a basic web server using Node.js that responds with "Hello, World!" to HTTP requests. This demonstrates the fundamentals of setting up a server using Node.js and handling client requests.