

Training Day 16 Report

Date: 17 July 2025

S.T.E.P – Science & Technology Entrepreneurs' Park, GNDEC, Ludhiana

Topic Covered: Setup and Introduction of Node.js, MongoDB, and Express.js

Introduction

On Day 16 of our MERN Stack training, we began our journey into backend development by exploring Node.js, MongoDB, and Express.js. These technologies are essential components of the MERN stack and allow us to build scalable, efficient server-side applications.

Node.js

What is Node.js?

- Node.js is a runtime environment that allows JavaScript to run outside the browser.
- Built on Chrome's V8 JavaScript engine.
- Designed for building scalable network applications.
- Uses event-driven, non-blocking I/O.

Installation:

- Download and install from <https://nodejs.org>
- Verify installation:
- `node -v`
- `npm -v`

Key Features:

- Fast execution
- Single-threaded but highly scalable
- Uses npm (Node Package Manager)
- Ideal for APIs and microservices

Express.js

What is Express?

- A minimal and flexible web application framework for Node.js.
- Helps in building RESTful APIs easily.
- Provides middleware to handle requests and responses.

Installation:

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

Sample Express App:

- `const express = require('express');`
- `const app = express();`
- `app.get('/', (req, res) => {`
- `res.send('Hello from Express!');`
- `});`
- `app.listen(3000, () => {`
- `console.log('Server running on http://localhost:3000');`
- `});`

MongoDB

What is MongoDB?

- A NoSQL database that stores data in BSON (Binary JSON) format.
- Highly scalable and flexible.
- Ideal for JSON-like document storage.

Setup:

- Install from <https://www.mongodb.com/try/download/community>

Start MongoDB server:

- Mongod

Use Mongo shell:

- Mongo

Using MongoDB with Node.js:

- Install MongoDB Node.js driver:
 - npm install mongodb

OR use Mongoose (an ODM):

- npm install mongoose

Activities Performed

- Installed Node.js and verified with CLI
- Created a simple Express server
- Installed and ran MongoDB
- Connected MongoDB to Node.js using Mongoose

Task of the Day

- Create a basic Node.js project
- Setup an Express server with a simple /about and /contact route
- Connect to MongoDB and insert sample data into a collection