LAB 06 HANDOUT

Create backend/ + frontend/ folders, build Node.js backend, and push to GitHub

Duration	2 Hours
Mode	Individual
Port	3000
Submission	GitHub repository link (submit repo URL only)

Learning Outcomes

- Create a repo with two folders: **backend/** and **frontend/** (required for upcoming labs).
- Build and run a Node.js + Express backend server with multiple routes.
- Initialize Git, commit, and push to GitHub.

Prerequisites

- Node.js LTS installed (v18+ recommended).
- Git installed and configured.
- GitHub account.

Verify installation (Terminal):

```
node -v
npm -v
git --version
```

Required Folder Structure (Strict)

```
lab06-node-fullstack-skeleton/
backend/
src/
server.js
package.json
frontend/
README.md
.gitignore
README.md
```

Step 1: Create Root + backend/ + frontend/

Commands (run in Terminal):

```
mkdir lab06-node-fullstack-skeleton
cd lab06-node-fullstack-skeleton
mkdir backend frontend
```

Create root **.gitignore**:

```
backend/node_modules
frontend/node_modules
.env
.DS_Store
```

Step 2: Build Backend (Node.js + Express)

Inside **backend/**:

```
cd backend
npm init -y
npm install express
mkdir src
```

Create **backend/src/server.js**:

```
const express = require("express");
const app = express();
const PORT = 3000;

app.get("/", (req, res) => res.send("Lab 06: Backend running and GitHub push
successful"));

app.get("/about", (req, res) => {
res.send("Name: YOUR_NAME | Enrollment: YOUR_ENROLLMENT | Section: YOUR_SECTION");
});

app.get("/health", (req, res) => res.json({ status: "ok" }));

app.listen(PORT, () => console.log(`Server running at http://localhost:${PORT}`));
```

Update **backend/package.json**:

```
"scripts": { "start": "node src/server.js" }
```

Run and test:

```
npm start
# test:
# http://localhost:3000/
# http://localhost:3000/about
# http://localhost:3000/health
```

Step 3: Frontend Placeholder (Required)

Create **frontend/README.md** (placeholder for upcoming labs):

```
# Frontend Placeholder (Lab 06)
This folder will be used in upcoming labs for React / Next.js UI.
```

Step 4: Root README.md (Required)

Create **README.md** at repository root:

```
# Lab 06 - Node Backend + GitHub Push (Fullstack Skeleton)

## Student Details
Name: YOUR_NAME
Enrollment: YOUR_ENROLLMENT
Section: YOUR_SECTION

## Run Backend
cd backend
npm install
npm start

## Routes
/ , /about , /health
```

Step 5: Git Init + Push to GitHub

From the repository root:

```
cd .. # if you are inside backend/
git init
git add .
git commit -m "Lab 06: add backend + frontend skeleton"

# Create GitHub repo: lab06-node-fullstack-skeleton
git branch -M main
git remote add origin <YOUR_GITHUB_REPO_URL>
git push -u origin main
```

Submission (Strict)

- Submit ONLY the GitHub repository link.

- Repo must contain backend/ and frontend/ folders.

- Do NOT push node_modules.

Rubric (10 Marks)

Folder structure (backend/ + frontend/ + root .gitignore)	2
Backend runs on port 3000; routes working	4
Meaningful Git commit message(s)	1
README completeness (student details + run steps + routes)	2
GitHub push done correctly (repo link opens, code present)	1

Quick Fixes

- **remote origin already exists**: git remote remove origin

- **branch mismatch**: git branch -M main