✅ Node.js  
✅ MySQL  
✅ PM2  
✅ Git clone  
✅ .env  
✅ SQL import  
✅ Auto-start on reboot

🧠 Each command includes:

* ❓ **Why it's used**
* 📍 **Where it's used**

**✅ One-Page Setup: Node.js + MySQL + PM2 + Git + .env (With Comments)**

# === [1] Update package list and install essential tools ===

# ❓ Why: Ensures latest package versions; installs curl, git, nano editors

# 📍 Used once at the beginning

sudo apt update && sudo apt install curl git nano -y

# === [2] Install Node.js LTS (v18) ===

# ❓ Why: Node.js is required to run the Node.js app

# 📍 Used once on new Ubuntu system

curl -fsSL https://deb.nodesource.com/setup\_18.x | sudo -E bash -

sudo apt install nodejs -y

# === [3] Install PM2 process manager ===

# ❓ Why: PM2 keeps your Node app running in the background (forever)

# 📍 Used globally once

sudo npm install -g pm2

# === [4] Install MySQL Server ===

# ❓ Why: Needed to run the MySQL database backend

# 📍 Used once if not already installed

sudo apt install mysql-server -y

# === [5] Start and enable MySQL service ===

# ❓ Why: Starts MySQL now and ensures it auto-starts on reboot

# 📍 Used after installing MySQL

sudo systemctl start mysql

sudo systemctl enable mysql

# === [6] Set MySQL root password ===

# ❓ Why: Secures MySQL root account for future usage

# 📍 Used only if root password is not set

sudo mysql <<EOF

ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql\_native\_password BY 'RootPassword@123';

FLUSH PRIVILEGES;

EXIT;

EOF

# === [7] Clone Node.js app from GitHub ===

# ❓ Why: Brings your Node.js project from remote GitHub repo

# 📍 Used whenever you want to deploy a project from git

cd /home/$USER/

git clone https://github.com/yourusername/your-nodejs-app.git

cd your-nodejs-app

# === [8] Create .env file with DB/app config ===

# ❓ Why: Stores config values (port, DB credentials) securely

# 📍 Used inside your project directory

cat <<EOF > .env

PORT=3000

DB\_HOST=localhost

DB\_USER=myuser

DB\_PASSWORD=mypassword

DB\_NAME=myapp

EOF

# === [9] Install project dependencies ===

# ❓ Why: Installs all required Node.js libraries (from package.json)

# 📍 Used inside your project folder

npm install

# ❓ Why: Ensure dotenv (for .env) and mysql2 (for MySQL) are available

npm install dotenv mysql2

# === [10] Import SQL data into existing database ===

# ❓ Why: Sets up initial schema and/or data (tables, rows, etc.)

# 📍 Used only once unless you're resetting DB

mysql -u myuser -p myapp < init.sql

# === [11] Ensure app uses .env by adding at top of app.js ===

# ❓ Why: Loads environment variables from `.env` into `process.env`

# 📍 Adds automatically if not already present

if ! grep -q "require('dotenv').config()" app.js; then

sed -i "1i require('dotenv').config();" app.js

fi

# === [12] Start the Node.js app using PM2 ===

# ❓ Why: Launches app in the background; keeps it running

# 📍 Used every time you deploy or update your app

pm2 start app.js --name my-node-app

# === [13] Save PM2 process list ===

# ❓ Why: Ensures app restarts after system reboots

# 📍 Used once after setting up PM2

pm2 save

# === [14] Enable PM2 auto-start on system boot ===

# ❓ Why: Sets up systemd service to auto-run app at boot

# 📍 Used once after PM2 setup

pm2 startup | tail -n 1 | xargs sudo

# === [15] Show PM2 status and helpful info ===

# ❓ Why: Confirms app is running and shows next steps

# 📍 Final confirmation step

pm2 list

echo "✅ App is running with PM2."

echo "ℹ️ Use 'pm2 logs my-node-app' to view logs."

**📦 Final Project Folder Structure**

/home/youruser/your-nodejs-app/

├── app.js # Main entry point

├── db.js # DB connection (uses dotenv)

├── .env # App config (port, DB creds)

├── init.sql # SQL file to import

├── package.json # Dependencies

└── node\_modules/ # Installed packages

**📌 PM2 Commands Summary**

| **Purpose** | **Command** |
| --- | --- |
| Show all apps | pm2 list |
| View logs | pm2 logs my-node-app |
| Restart app | pm2 restart my-node-app |
| Stop app | pm2 stop my-node-app |
| Delete app | pm2 delete my-node-app |
| Save app state | pm2 save |
| Enable on boot | pm2 startup |

**✅ You’re Now Fully Set Up!**

Your system now has:

* Node.js (LTS)
* PM2 (background process manager)
* MySQL (with root password secured)
* Git-cloned Node app
* .env for config
* SQL imported into existing DB
* PM2 managing the app with reboot support

Let me know if you want:

* A **bash script** version of this
* A **sample project** ready to clone
* Auto **database/user creation**
* Add **firewall or SSH hardening** for production

All done ✅