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Shri Vile Parle Kelavani Mandal's DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING

(Autonomous College Affiliated to the University of Mumbai) NAAC Accredited with "A" Grade (CGPA: 3.18)

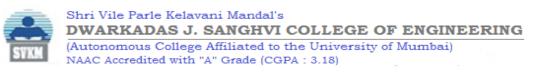


SAP ID: 60017230110

Department of Artificial Intelligence and Machine Learning B.Tech. Sem: V Subject: Full Stack Development Laboratory (DJS22AML504)

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	dim - Deploy above developed application on any hosting platform of your choice
	Theory: Deploy Frontend on Nell Try Step 1:
	- Prepare the Read App for Production - Run build command in Read Project or upon run build
	Step 2. Deploy va Gritheb
	- Push your project to Grillhub repositions of its not abready. - log in to Neltity & click " New site from Git" - Choose Gifthub as source, authornize Neltity to accuse your repositions, and select the repositions for your Read App. - Net like will automatically delect the Read build settings (ppm rum build), & it will deploy the sike to unique URL (ey. https://your-app-name.net/ihy-app).
	Step 3: Manual Perloyement - Drag & Prop contents of build to lder mb Neltily dashboard for manual deployement
	Star Conchusion: By deploying on Neltity, we deployed our application
Qui	FOR EDUCATIONAL USE





Aim	Deploy the above developed application on any hosting platform of your
C - C	choice
Software Pre-	VS Code Active internet connection
requisite	Active internet connection
Theory	Steps to Deploy a React App on Netlify using GitHub
Theory	Step 1: Create a React Application
	At the very first, you need a react application. To create a react application,
	there are some prerequisites for your local system. There must
	be Node.js and npm installed in your system. If Node.js is not installed in
	your system, you can download it and install it from this link. Also, to
	install npm, you can run the following command on your terminal –
	npm install npm@latest -g
	Now open your <u>VS Code</u> or some other IDE, Open the terminal, and run the
	following command to create a React App-
	npx create-react-app My-Project
	Navigate to your project directory, using the following command –
	cd My-Project
	And, start the React application by using the following command – npm start
	Step 2: Install the Required Dependencies
	First of all, open your code in Visual Studio Code or in any other IDE.
	Run the following command, in order to install the Netlify CLI package as
	a development dependency in your React project.
	npm install netlify-cli -g
	This allows users to deploy the react app directly from the terminal. (This is
	not a required step)
	Step 3: Create a Build directory
	Using the following command, we will now create a build for our
	production.
	npm run build This creates the main directory as 'build'. This Build folder contains all the
	required files that we need to deploy our application. Now, we are ready to
	push this code into our GitHub repository.
	Step 4: Create a GitHub repository
	Now, You have a react app on your local system. Open your GitHub
	account and create a new repository for your project. Name the repository
	anything you want, for example, My project. Push the code to the
	repository using Git Bash. For this, you need to have a good understanding
	of version controls.
	Our project is uploaded on Github, We'll now move forward towards
	deploying our project: There are various development platforms like
	Heruku, Vercel, Netlify, Github pages, Digital Ocean, etc. But one of the
	most popular and easy-to-use platforms is Netlify. We'll be using Netlify to
	deploy our project in this article. Step 5: Setting up Netlify
	Such 2. Security and Meaning

Create a <u>Netlify</u> account (if you have not any). Now, connect your GitHub account with Netlify. Authorize Netlify to use GitHub to access your repositories.

Follow these steps further:

- 1. Go to the 'Sites' section from the header of the Netlify website's dashboard.
- 2. Now, click on 'Add new site'.
- 3. Select 'import an existing project', This will redirect you to a page where it will ask you to connect a Git provider.
- 4. Select your Git provider, if our things are the same so far, choose **GitHub**.
- 5. This will take you to a page, where all your GitHub repositories are listed
- 6. Choose your project repository.
- 7. Now, there will be some settings,
 - a) Do not change the pre-filled details.
 - b) Leave the Base Directory empty.
 - c) In the Build Command, type "npm run build".
 - d) In the Publish Directory, type "build".
- 8. And, finally, click on the Deploy site.
- 9. It'll redirect you to the deployment page, you can check the logs here, and see how things are working step by step.
- 10. If the deployment fails for some reason, you'll get the error message. Remove the error and try deploying it again.

By the time, The react app is deployed. Once the deployment gets completed, you get a public URL for your project with the domain 'netlify.com'.

Step 6: Other ways to deploy

Using the GitHub repository is not the only way to deploy a React App on Netlify, this can also be done by –

- Drag and Drop method
- Using Netlify CLI (Command Line Interface)

Drag and Drop method is the easiest way to deploy your react app. All you need to do is, after **step 3**, Once you have to create a build directory, drag this 'build' folder, and drop it to the dashboard of Netlify. And start deploying.

The other way is to use **Netlify CLI.** After performing **Step 2**, Navigate to your working directory and run the following command to deploy the application.

netlify deploy

These were all the ways, a React application can be deployed on Netlify.

Steps To Deploy MERN Full-Stack To Render

Deploying a MERN full-stack application to Render can be a straightforward process when following these steps. Aspiring professionals are suggested to join the MERN Stack Course with Placement for the best

guidance. Render provides a simple and efficient platform for hosting various types of applications, including MERN stacks.

1. Set Up Your MERN Application Locally

To begin with, make sure your MERN application is fully developed and tested locally before proceeding with deployment. Ensure that your application is structured properly with separate backend (Node.js/Express) and frontend (React.js) directories.

2. Create a Render Account

For the next step, if you haven't already, sign up for a Render account at render.com, or use you GitHub account. Render offers a generous free tier for hosting your applications.

3. Prepare Your Application for Deployment

This step involves preparing your MERN application for deployment. For this, prepare the backend of the application first before proceeding to the frontend.

Backend (Node.js/Express):

- Ensure that your backend code is configured to use environment variables for sensitive data such as database credentials.
- Next, create a "server.js" file that initializes your Express server.
- Update your "package.json" file to include a start script for running your server.

Frontend (React.js):

- Now, build your React application for production. Run "npm run build" in your frontend directory to generate a production-ready build.
- Make sure your frontend is configured to fetch data from your backend server using the appropriate endpoints.

4. Set Up Your Database

Moving forward, if your MERN application relies on MongoDB, you can use MongoDB Atlas for cloud-hosted databases. Set up a MongoDB Atlas cluster and configure access credentials.

5. Configure Environment Variables on Render

Next, in your Render dashboard, navigate to your MERN service and configure environment variables for your application. Add the variables for MongoDB connection strings, API keys, and any other sensitive data your application requires.

6. Deploy Your Backend

Create a New Web Service:

- · Click on "New" in the Render dashboard and select "Web Service."
- Then choose a name for your service and specify the GitHub repository where your backend code is hosted.

• Configure Build and Start Command:

Next, in the settings for your web service, specify the build command (e.g., "npm install") and start command (e.g., "npm start") for your backend.

Add Environment Variables:

· Add environment variables for your backend configuration, including MongoDB connection strings.

• Deploy Your Backend:

· Next, click on "Deploy" to deploy your backend to Render.

7. Deploy Your Frontend

• Create a New Static Site:

- Now, click on "New" in the Render dashboard and select "Static Site."
- · Choose a name for your static site and specify the GitHub repository where your frontend code is hosted.

• Configure Build Command:

• Going ahead, in the settings for your static site, specify the build command (e.g., "*npm run build*") for your React frontend.



• Deploy Your Frontend:

Next, click on "Deploy" to deploy your frontend to Render.

8. Access Your Application

Once both your backend and frontend are deployed, Render will provide you with URLs for accessing your services. You can access your MERN application through the provided URLs.

Deploying a MERN full-stack application to Render involves configuring backend and frontend services, setting up environment variables, and deploying each component separately. By following these steps, you can efficiently host your MERN application on Render's platform, ensuring scalability, reliability, and ease of management.

Code Frontend

```
SignIn.jsx
import { BottomWarning } from "../components/BottomWarning";
import { Button } from "../components/Button";
import { Heading } from "../components/Heading";
import { InputBox } from "../components/InputBox";
import { SubHeading } from "../components/SubHeading";
import { useState } from 'react';
import axios from "axios";
import { jwtDecode } from "jwt-decode";
import { useNavigate } from 'react-router-dom'; // To redirect after sign-in
export const Signin = () => {
  const [email, setEmail] = useState("");
  const [password, setPassword] = useState("");
  const [error, setError] = useState(""); // State for error messages
  const navigate = useNavigate(); // Hook for navigation
  const handleSignIn = async () => {
     try {
       const response = await
axios.post("http://localhost:3000/api/v1/user/signin", {
          username: email, // Assuming 'username' is the same as 'email'
          password
       });
       // Save the token (if needed) and redirect
       localStorage.setItem("token", response.data.token);
       localStorage.setItem("userId",jwtDecode(response.data.token).userId
)
       navigate("/dashboard"); // Redirect to the dashboard or wherever
```



```
} catch (err) {
       const errorMessage = err.response?.data?.message || "Sign in failed.
Please try again.";
       setError(errorMessage); // Set the error message to display
  };
  return (
    <div className="bg-slate-300 h-screen flex justify-center">
       <div className="flex flex-col justify-center">
         <div className="rounded-lg bg-white w-80 text-center p-2 h-</pre>
max px-4">
            <Heading label={"Sign in"} />
            <SubHeading label={"Enter your credentials to access your</p>
account" \ />
            <InputBox
              placeholder="azlan@gmail.com"
              label={"Email"}
              onChange={(e) => setEmail(e.target.value)}
            />
            <InputBox
              placeholder="123456"
              label={"Password"}
              type="password"
              onChange={(e) => setPassword(e.target.value)}
            {error && <div className="text-red-500">{error}</div>} {/*
Display error message */}
            <div className="pt-4">
              <Button label={"Sign in"} onClick={handleSignIn} />
            </div>
            <BottomWarning label={"Don't have an account?"}
buttonText={"Sign up"} to={"/signup"} />
         </div>
       </div>
    </div>
  );
SignUp.jsx
import { useState } from "react"
import { BottomWarning } from "../components/BottomWarning"
import { Button } from "../components/Button"
import { Heading } from "../components/Heading"
import { InputBox } from "../components/InputBox"
import { SubHeading } from "../components/SubHeading"
import axios from "axios";
import { useNavigate } from "react-router-dom"
```



```
import { jwtDecode } from "jwt-decode";
export const Signup = () => {
 const [firstName, setFirstName] = useState("");
 const [lastName, setLastName] = useState("");
 const [username, setUsername] = useState("");
 const [password, setPassword] = useState("");
 const navigate = useNavigate();
 return <div className="bg-slate-300 h-screen flex justify-center">
  <div className="flex flex-col justify-center">
   <div className="rounded-lg bg-white w-80 text-center p-2 h-max px-</pre>
4">
    <Heading label={"Sign up"} />
     <SubHeading label={"Enter your infromation to create an account"} />
    <InputBox onChange={e => {
      setFirstName(e.target.value);
     }} placeholder="John" label={"First Name"} />
     <InputBox onChange=\{(e) => \{
      setLastName(e.target.value);
     }} placeholder="Doe" label={"Last Name"} />
     <InputBox onChange={e => {
      setUsername(e.target.value);
     }} placeholder="azlan@gmail.com" label={"Email"} />
     <InputBox onChange=\{(e) => \{
      setPassword(e.target.value)
     }} placeholder="123456" label={"Password"} />
    <div className="pt-4">
      <Button onClick={async () => {
       const response = await
axios.post("http://localhost:3000/api/v1/user/signup", {
        username,
        firstName,
        lastName,
        password
       });
       localStorage.setItem("token", response.data.token)
       localStorage.setItem("userId", jwtDecode(response.data.token))
       navigate("/dashboard")
      }} label={"Sign up"} />
     <BottomWarning label={"Already have an account?"}
buttonText={"Sign in"} to={"/signin"} />
   </div>
  </div>
 </div>
```



```
Transactions.jsx
import { useState, useEffect} from "react"
import { Navigate } from "react-router-dom"
import axios from "axios"
import { TransactionCard } from "../components/TransactionCard"
export const Transactions = ()=>{
  const token = localStorage.getItem("token")
  const [transactions, setTransactions] = useState([]);
  const [loading, setLoading] = useState(true); // Loading state
  if(!token){
     return(<Navigate to = '/signin'/>)
  useEffect(() => {
     const fetchTransactions = async () => {
       try {
          const response = await
axios.get('http://localhost:3000/api/v1/account/history', {
            headers: {
               Authorization: "Bearer " + token,
          });
          setTransactions(response.data); // Store the transaction data
          setLoading(false);
       } catch (error) {
          console.error("Error fetching transactions", error);
          setLoading(false);
     };
     fetchTransactions();
  }, []); // Empty dependency array ensures this runs once on component
mount
  if (loading) {
     return <div>Loading transactions...</div>; // Show loading message
while data is being fetched
  return(
     <div className="m-8">
       <h2 className="text-2xl font-bold mb-4">Transaction
History</h2>
       <div className="space-y-4">
          {transactions.length > 0 ? transactions.map((transaction) => (
```



```
<TransactionCard key={transaction._id}</pre>
transaction={transaction} />
          )) : <div>No transactions found.</div>}
       </div>
     </div>
UpdateInfo.jsx
import axios from 'axios'
import { useState, Navigate} from 'react'
import { useNavigate } from "react-router-dom"
export const UpdateInfo = () => {
  const [message,setMessage] = useState(")
  const [firstName, setFirstName] = useState(")
  const [lastName, setLastname] = useState(")
  const [password, setPassword] = useState(")
  const navigate = useNavigate();
  const handleSubmit = async(event)=>{
     setMessage(")
     event.preventDefault();
       const response = axios.put('http://localhost:3000/api/v1/user', {
          password: password,
          firstName: firstName,
          lastName: lastName
       }, {
          headers: {
            Authorization: "Bearer " + localStorage.getItem("token"),
       })
       setMessage('Successfull!')
     catch(err){
       throw(e)
       setMessage('Error occured!')
  }
  return (
     <div className='flex justify-center h-screen bg-gray-100'>
       <div className="h-full w-full max-w-5xl flex flex-col justify-center"</pre>
p-10">
          <form className="border rounded-lg border-zinc-400 w-full"</pre>
max-w-4xl p-12 bg-white">
```



```
<h2 className="text-3xl font-bold text-center mb-10">Update
Information</h2>
            <div className="flex flex-wrap -mx-3 mb-6">
              <div className="w-full md:w-1/2 px-3 mb-6 md:mb-0">
                 <label className="block uppercase tracking-wide text-</pre>
gray-700 text-lg font-bold mb-2" htmlFor="grid-first-name">
                   First Name
                 </label>
                <input
                   className="appearance-none block w-full bg-gray-200
text-gray-700 border rounded py-4 px-5 mb-3 leading-tight focus:outline-
none focus:bg-white text-base"
                   id="grid-first-name"
                   type="text"
                   placeholder="Jane"
                   value={firstName}
                   onChange={(e)=>{setFirstName(e.target.value)}}
              </div>
              <div className="w-full md:w-1/2 px-3">
                <label className="block uppercase tracking-wide text-</pre>
gray-700 text-lg font-bold mb-2" htmlFor="grid-last-name">
                   Last Name
                </label>
                <input
                   className="appearance-none block w-full bg-gray-200
text-gray-700 border border-gray-200 rounded py-4 px-5 leading-tight
focus:outline-none focus:bg-white text-base"
                   id="grid-last-name"
                   type="text"
                   placeholder="Doe"
                   value={lastName}
                   onChange={(e)=>{setLastname(e.target.value)}}
                />
              </div>
            </div>
            <div className="flex flex-wrap -mx-3 mb-6">
              <div className="w-full px-3">
                 <label className="block uppercase tracking-wide text-</pre>
gray-700 text-lg font-bold mb-2" htmlFor="grid-password">
                   Password
                </label>
                <input
                   className="appearance-none block w-full bg-gray-200"
text-gray-700 border border-gray-200 rounded py-4 px-5 mb-3 leading-tight
focus:outline-none focus:bg-white text-base"
                   id="grid-password"
```



```
type="password"
                  placeholder="*************
                  value={password}
                  onChange={(e)=>{setPassword(e.target.value)}}
                Make it as
long and as crazy as you'd like
              </div>
           </div>
           <div className="flex justify-around">
              <but
                type="submit"
                onClick = {handleSubmit}
                className="bg-blue-500 text-white font-bold py-2 px-6"
rounded hover:bg-blue-600">
                Submit
              </button>
              <button onClick={()=>{navigate("/dashboard")}}
className="bg-blue-500 text-white font-bold py-2 px-6 rounded hover:bg-
blue-600">Dashboard</button>
           </div>
           <div className='flex justify-center text-lg font-semibold'>
              <h2 className=' text-red selection:font-bold py-2 px-6
rounded'>{message}</h2>
           </div>
         </form>
       </div>
    </div>
Backend
// backend/routes/account.js
const express = require('express');
const { authMiddleware } = require('../middleware');
const { Account, Transaction } = require('../db');
const { default: mongoose } = require('mongoose');
const router = express.Router();
router.get("/balance", authMiddleware, async (req, res) => {
  const account = await Account.findOne({
    userId: req.userId
  });
  res.json({
    balance: account.balance
```



```
})
});
router.post("/transfer", authMiddleware, async (req, res) => {
  const session = await mongoose.startSession();
  session.startTransaction();
  const { amount, to } = req.body;
  const from = req.userId
  // Fetch the accounts within the transaction
  const fromAccount = await Account.findOne({ userId: req.userId
}).session(session);
  const toAccount = await Account.findOne({ userId: to
}).session(session);
  if (!fromAccount || fromAccount.balance < amount) {
     await session.abortTransaction();
     return res.status(400).json({
       message: "Insufficient balance"
     });
  }
  if (!toAccount) {
     await session.abortTransaction();
     return res.status(400).json({
       message: "Invalid account"
     });
  // Perform the transfer
  await Account.updateOne({ userId: req.userId }, { $inc: { balance: -
amount } }).session(session);
  await Account.updateOne({ userId: to }, { $inc: { balance: amount }
}).session(session);
  // Log the transaction in the Transaction collection
  const trans = new Transaction({
     from: from,
     to: to,
     amount: amount,
     type: 'outgoing'
  });
  //console.log('transaction:', outgoingTransaction)
  // Save the transactions
  await trans.save({ session });
```



```
// Commit the transaction
  await session.commitTransaction();
  res.json({
     message: "Transfer successful"
  });
});
router.get('/history',authMiddleware, async(req,res)=>{
     const userId = req.userId
     const transactions = await Transaction.find({
       $or: [{from:userId}, {to:userId}] //This is an array of two conditions.
MongoDB will return documents where either condition is true.
     }).sort({date:-1});
     res.json(transactions)
  }catch(error){
     res.status(500).json({msg:"Failed"})
})
module.exports = router;
// backend/user/index.js
const express = require('express');
const userRouter = require("./user");
const accountRouter = require("./account");
const router = express.Router();
router.use("/user", userRouter);
router.use("/account", accountRouter);
module.exports = router;
user.js
// backend/routes/user.js
const express = require('express');
const router = express.Router();
const zod = require("zod");
const { User, Account } = require("../db");
const jwt = require("jsonwebtoken");
const { JWT_SECRET } = require("../config");
const { authMiddleware } = require("../middleware");
const signupBody = zod.object({
  username: zod.string().email()
```



```
firstName: zod.string(),
  lastName: zod.string(),
  password: zod.string()
})
router.post("/signup", async (req, res) => {
  const { success } = signupBody.safeParse(req.body)
  if (!success) {
     return res.status(411).json({
       message: "Email already taken / Incorrect inputs"
     })
  const existingUser = await User.findOne({
     username: req.body.username
  })
  if (existingUser) {
     return res.status(411).json({
       message: "Email already taken/Incorrect inputs"
     })
  }
  const user = await User.create({
     username: req.body.username,
     password: req.body.password,
     firstName: req.body.firstName,
     lastName: req.body.lastName,
  })
  const userId = user._id;
  await Account.create({
     userId,
     balance: 10000
  })
  const token = jwt.sign({
     userId
  }, JWT_SECRET);
  res.json({
     message: "User created successfully",
     token: token
  })
})
const signinBody = zod.object({
  username: zod.string().email(),
```



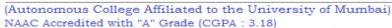
```
password: zod.string()
})
router.post("/signin", async (req, res) => {
  const { success } = signinBody.safeParse(req.body)
  if (!success) {
     return res.status(411).json({
       message: "Email already taken / Incorrect inputs"
     })
  }
  const user = await User.findOne({
     username: req.body.username,
     password: req.body.password
  });
  if (user) {
     const token = jwt.sign({
       userId: user._id
     }, JWT_SECRET);
     res.json({
       token: token
     })
     return;
  }
  res.status(411).json({
     message: "Error while logging in"
  })
})
const updateBody = zod.object({
  password: zod.string().optional(),
  firstName: zod.string().optional(),
  lastName: zod.string().optional(),
})
router.put("/", authMiddleware, async (req, res) => {
  const { success } = updateBody.safeParse(req.body)
  if (!success) {
     return res.status(411).json({
       message: "Unsuccessfull zod parse"
     })
```



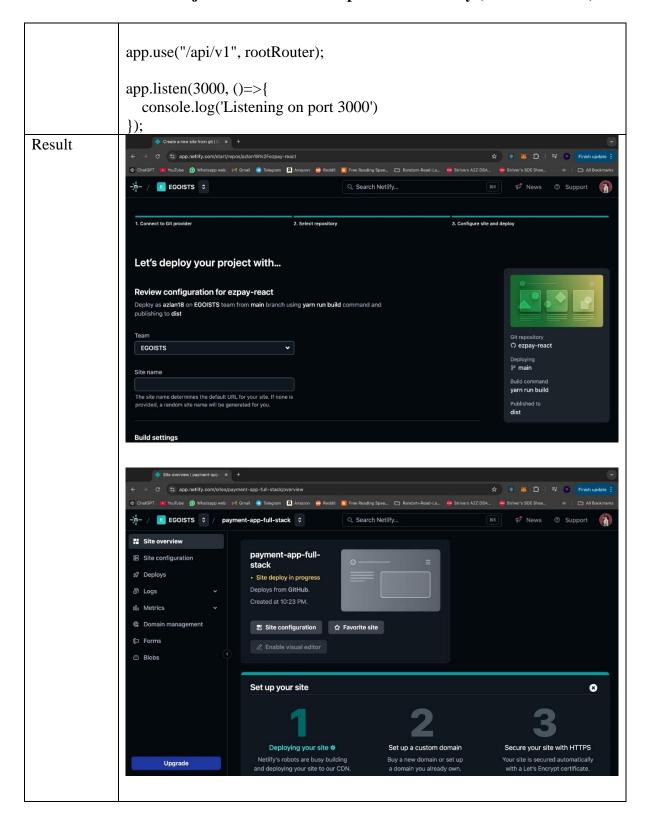
```
await User.updateOne(
     {_id: req.userId},
     req.body
  res.json({
     msg: "Updated successfully"
  })
})
router.get("/bulk", async (req, res) => {
  const filter = req.query.filter || "";
  const users = await User.find({
     $or: [{
       firstName: {
          "$regex": filter
     }, {
       lastName: {
          "$regex": filter
     }]
  })
  res.json({
     user: users.map(user => ({
       username: user.username,
       firstName: user.firstName,
       lastName: user.lastName,
       _id: user._id
     }))
  })
})
module.exports = router;
index.js
// backend/index.js
const express = require('express');
const cors = require("cors");
const rootRouter = require("./routes/index");
const app = express();
app.use(cors());
app.use(express.json());
```



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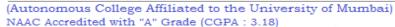




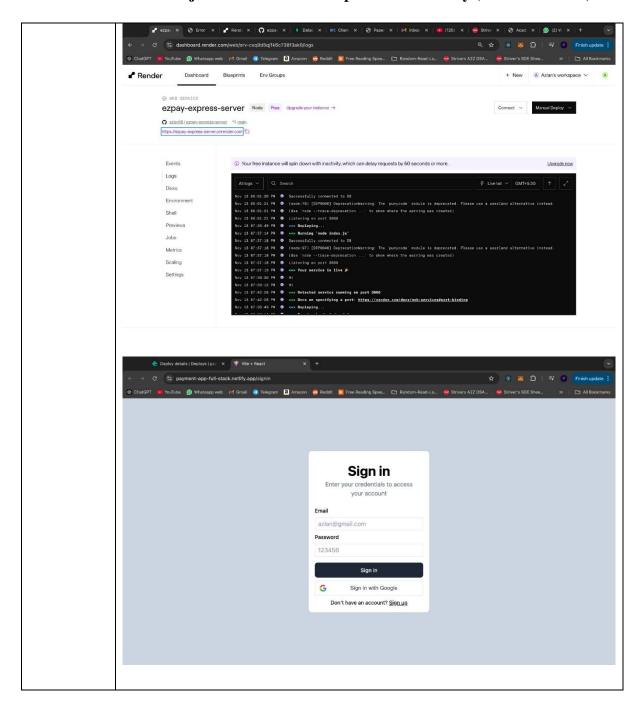




Shri Vile Parle Kelavani Mandal's **DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING**









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