

# **“Internship at Elecon Engineering Co. Ltd.”**

**A Project Report**

**Submitted By**

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**Computer Engineering Department**

**Birla Vishvakarma Mahavidyalaya Vallabh**

**Vidyanagar**

# Acknowledgement

I, Chirag Rathod, had the privilege of completing my internship at Tech Elecon Pvt. Ltd. under the valuable guidance of Mr. Satyam Raval. This internship provided me with a meaningful and enriching experience that significantly enhanced my practical skills in frontend development using React JS.

For an engineering student, an internship plays a significant role in strengthening practical knowledge and gaining exposure to industry standards and work environments.

I would like to express my deepest gratitude to all those who gave me the opportunity to complete this internship and supported me throughout the journey. I sincerely thank Mr. Satyam Raval for his consistent support, insightful feedback, and mentorship. His guidance helped me understand key frontend development concepts, effectively apply React, and follow best practices in component design, state management, and responsive UI development.

I also extend my gratitude to the entire team at Tech Elecon for their cooperation, technical support, and for fostering a collaborative work environment. Their professional approach and willingness to share knowledge helped me grow both technically and personally.

I look forward to applying the knowledge and skills gained during this internship to my future endeavors.

## To whom it may concern

This is to certify that Chirag Rathod, a student of Bachelor of Technology in Computer Engineering at Birla Vishvakarma Mahavidyalaya, has successfully completed his internship in the field of Frontend Development using React JS from 26/05/2025 to 26/06/2025 under the guidance of Mr. Satyam Raval, Deputy General Manager at Tech Elecon Pvt. Ltd.

His internship activities included the successful completion of the assigned project within the given timeframe, while adhering to the company's rules and regulations.

During the period of his internship program with us, he was exposed to various frontend development processes and was found to be diligent, hardworking, and eager to learn.

For Tech Elecon Pvt. Ltd.

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## Introduction

In the current era of web development, responsive and dynamic user interfaces have become essential to delivering seamless user experiences. With the increasing demand for interactive web applications, React JS has emerged as one of the most powerful libraries for building modern frontend interfaces. During my internship at Tech Elecon Pvt. Ltd., I focused on enhancing my skills in React JS through structured learning, hands-on practice, and real-world project development.

The internship began with foundational training, covering core concepts such as JSX, components, props, state, hooks, routing, and context API. I applied this knowledge through the development of multiple mini-projects, which included a background color changer, password generator, currency converter, and theme switcher. These projects helped me internalize the React workflow and component-based architecture.

As I progressed, I designed and developed a fully functional and visually appealing Personal Portfolio Website using React JS and Tailwind CSS. This project allowed me to explore responsive design patterns, custom UI components, and frontend deployment strategies. I also deployed the final portfolio at: <https://chiragrathod.tech>.

In addition, I worked on a Udemy Clone (Frontend Only), replicating the structure and features of modern e-learning platforms. This involved building routes for home, course listings, course details, user authentication pages, and dashboards — entirely through React and local state management.

The primary objective of this internship was to gain proficiency in frontend development using React JS and build production-level applications that follow industry-standard design principles. The experience not only improved my technical knowledge but also gave me valuable exposure to real-world UI/UX practices and collaborative development workflows.

# Implementation Details

During my internship at **Tech Elecon Pvt. Ltd.**, I worked on multiple React JS-based implementations following a modular and component-driven architecture. The goal was to strengthen my understanding of frontend development workflows by building real-world projects with scalable UI components, reusable logic, and responsive designs. Below are the core implementation details across the major projects:

## 1. Personal Portfolio Website

Tech Stack:

- **Frontend:** React JS, Tailwind CSS
- **Deployment:** Vercel, Custom Domain

Key Features:

- Built fully responsive UI using Tailwind CSS utility classes
- Designed modular components for sections like About, Skills, Projects, and Contact
- Implemented theme switching (Dark/Light Mode) using Context API
- Hosted live site with custom domain: <https://chiragrathod.tech>

Implementation Highlights:

- Component-based structure: Header, Footer, HeroSection, ProjectCard, Contact, Buy me a Coffee
- Used React Router for seamless navigation
- Integrated SEO-friendly titles, responsive breakpoints, and keyboard accessibility

## 2. Udemy Clone – Frontend Project

Tech Stack:

- React JS, Tailwind CSS, React Router
- Dummy data (local state only, no backend)

Key Features:

- Home Page – Showcases featured courses and categories
- Course Listing Page – Grid display of available courses
- Course Detail Page – Detailed view with modules, ratings, and author info
- Authentication Pages – Static Login and Signup screens
- Cart and Dashboard – Basic layout for purchased/enrolled courses
- Video player page
- Instructor profile page
- User Course completion dashboard

Implementation Highlights:

- React Router DOM was used to manage navigation and route-level views
- Applied responsive grid layouts and cards using Tailwind
- Handled reusable course data through props and local component state
- UI optimized for both desktop and mobile devices

### 3. Mini Projects and Learning Exercises

To solidify my React fundamentals, I developed various mini-projects:

- Prop Drilling Mini App: Demonstrated how props flow across nested components
- Password Generator: Included logic to generate strong passwords with character options
- Currency Converter: Integrated an open API to fetch real-time currency exchange rates
- Background Color Changer: Simple app to toggle page colors using state
- Theme Switcher: Used Context API to switch light/dark themes dynamically

Hooks and Patterns Used:

- useState, useEffect, useContext, useRef, useCallback, etc
- Folder structure followed separation of concerns: components, assets, pages, routes, etc

### Summery

Each project was implemented using a modular and reusable approach, emphasizing code readability, UI consistency, and best practices in modern frontend development. I actively followed design inspirations from popular platforms and UI repositories like Mobbin to maintain a professional look and feel.

This internship allowed me to build production-ready frontend projects and significantly improve my understanding of React JS, component design, state management, and deployment workflows.

## Overview of the company

- Tech Elecon is the IT division of the Elecon group of companies and has an experience of more than 25 years in the field of hardware, software and networking solutions. Situated in the heart of Vitthal Udyognagar an Industrial Estate and in the proximity of the educational town of Vallabh Vidyanagar, Tech Elecon is all set to reach new heights in the field of IT solutions.
- Tech Elecon ready with all sorts of solutions and we deliver any application that is web based and further our solutions are designed to adapt your business rather than your business adapting the software. Tech Elecon solutions are 100% fruitful and empower you to take control of your business online and in real time!
- Tech Elecon provides OEM level products, packaged products, and ready to install systems for wireless Data and Voice for industrial, and military, and government clients.
- TEPL is one of the competent solution providers in the field of Information Technology. Our technical expertise make us accomplished to provide perfect and amicable solutions to all our clients IT related requirements.
- The expert analysts and consultants at TEPL work to provide with a comprehensive look of the entire IT landscape and also detailed perspective on client's key areas of concern. These can be in the form of feasibility studies, evaluations, implementation, and maintenance of various IT solutions.



# Tools and technologies

## 1. HTML / JSX (JavaScript XML)

- In React, **JSX** is used to create HTML-like structures directly within JavaScript. This approach allows for the creation of modular, reusable components that render dynamic UIs. JSX helps maintain a clear and declarative structure of UI elements while enabling embedding of logic and interactivity directly within the component layout.

## 2. Tailwind CSS

- Tailwind CSS was used extensively for styling and layout purposes. Its utility-first classes allowed for rapid prototyping and responsive design implementation. From buttons and cards to full-page sections and themes, Tailwind CSS provided full control over spacing, colors, typography, and interactivity without writing custom CSS.
  - Created consistent and mobile-friendly UI layouts
  - Designed dark/light themes using utility classes
  - Implemented hover effects, transitions, and grid/flex layouts

## 3. React.js

React.js served as the core library for building the application's frontend:

- Component-Based Architecture: Developed reusable components like Navbar, Card, CourseList, PortfolioSection, etc.
- State Management: Used `useState`, `useEffect`, and `useContext` to manage application state across components
- Event Handling: Implemented dynamic behavior for UI elements (e.g., button clicks, form inputs, theme toggles)
- Routing: Used React Router DOM to handle client-side routing and navigation between pages
- Dynamic Rendering: Leveraged React's virtual DOM to efficiently render only updated components, improving performance

## 4. Git & GitHub

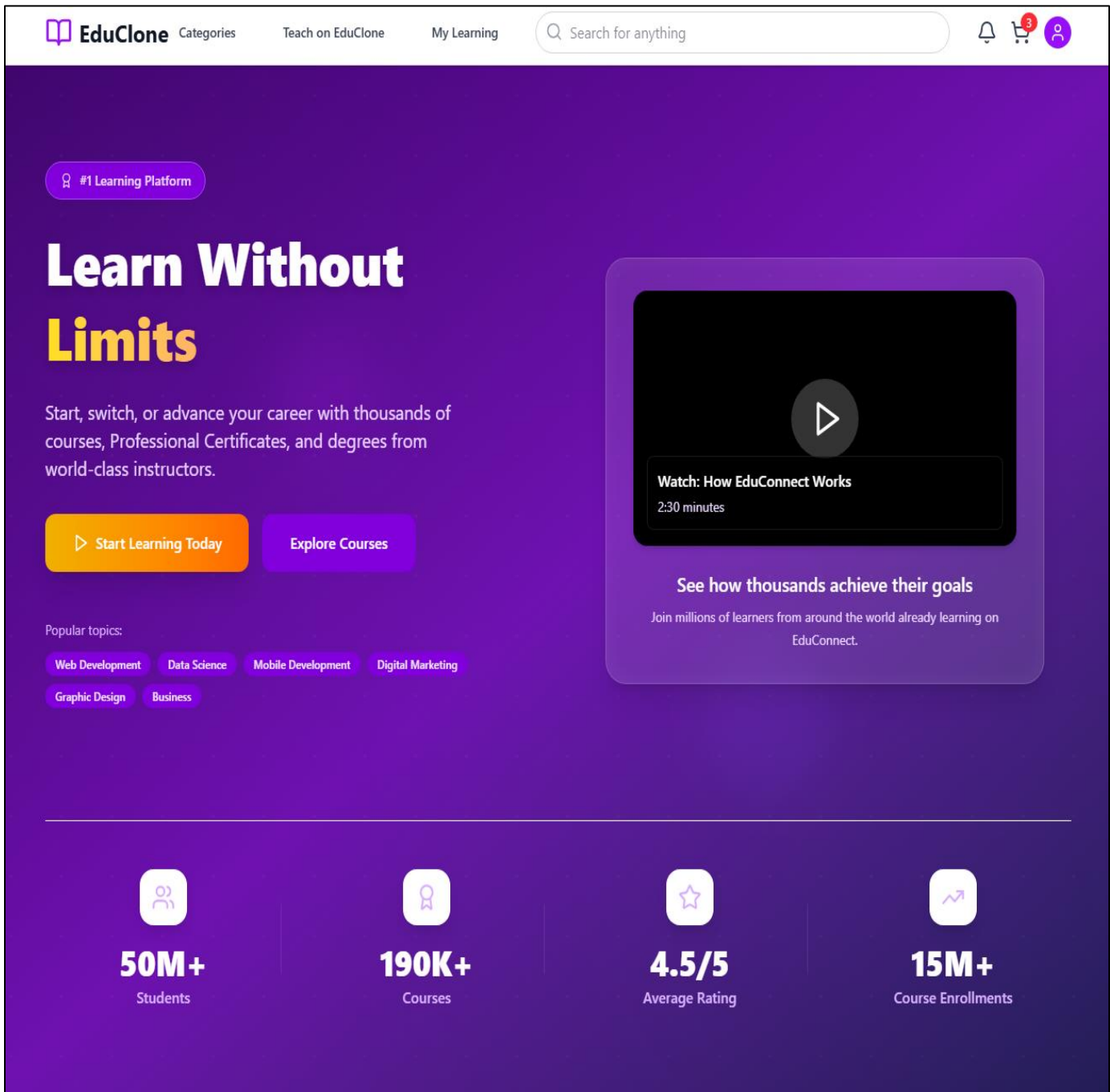
- Used Git for version control and GitHub for hosting repositories and collaborating:
- Tracked daily progress and maintained project history
- Used feature branches to experiment with changes without affecting the main codebase
- Integrated GitHub Pages for deploying the portfolio website

## 5. Deployment Tools

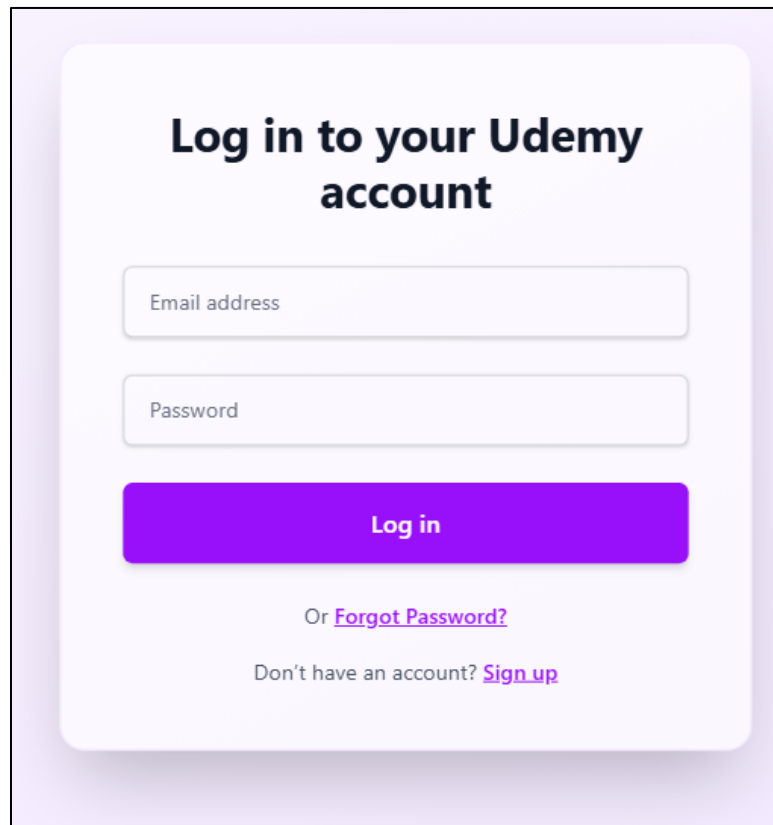
- Vercel was used to deploy the personal portfolio website with a custom domain ([chiragrathod.tech](https://chiragrathod.tech))
- Learned about other hosting services (e.g., Vercel, Netlify) during deployment research
- Applied concepts of static site hosting, DNS configuration, and build pipelines.

# Implementation

- Header and Hero section (Udemy clone project)

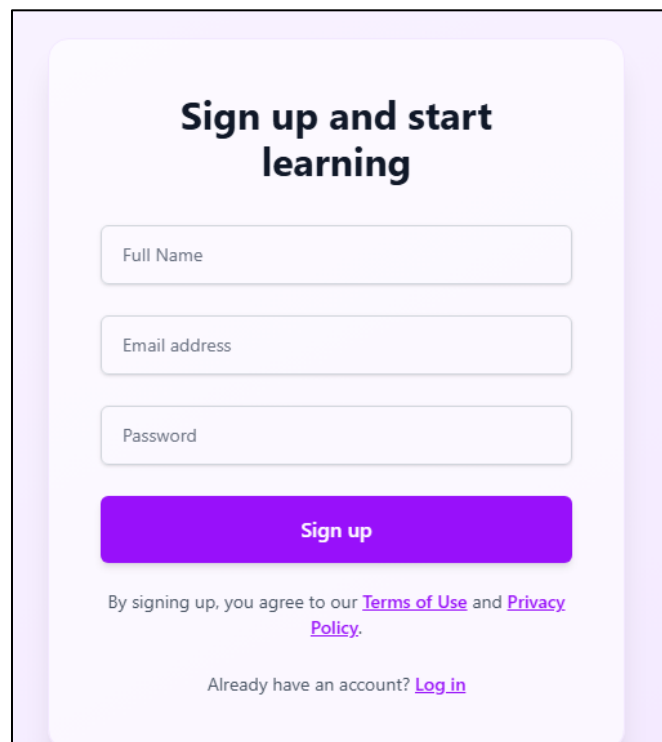


- Login Component (Udemy clone project)



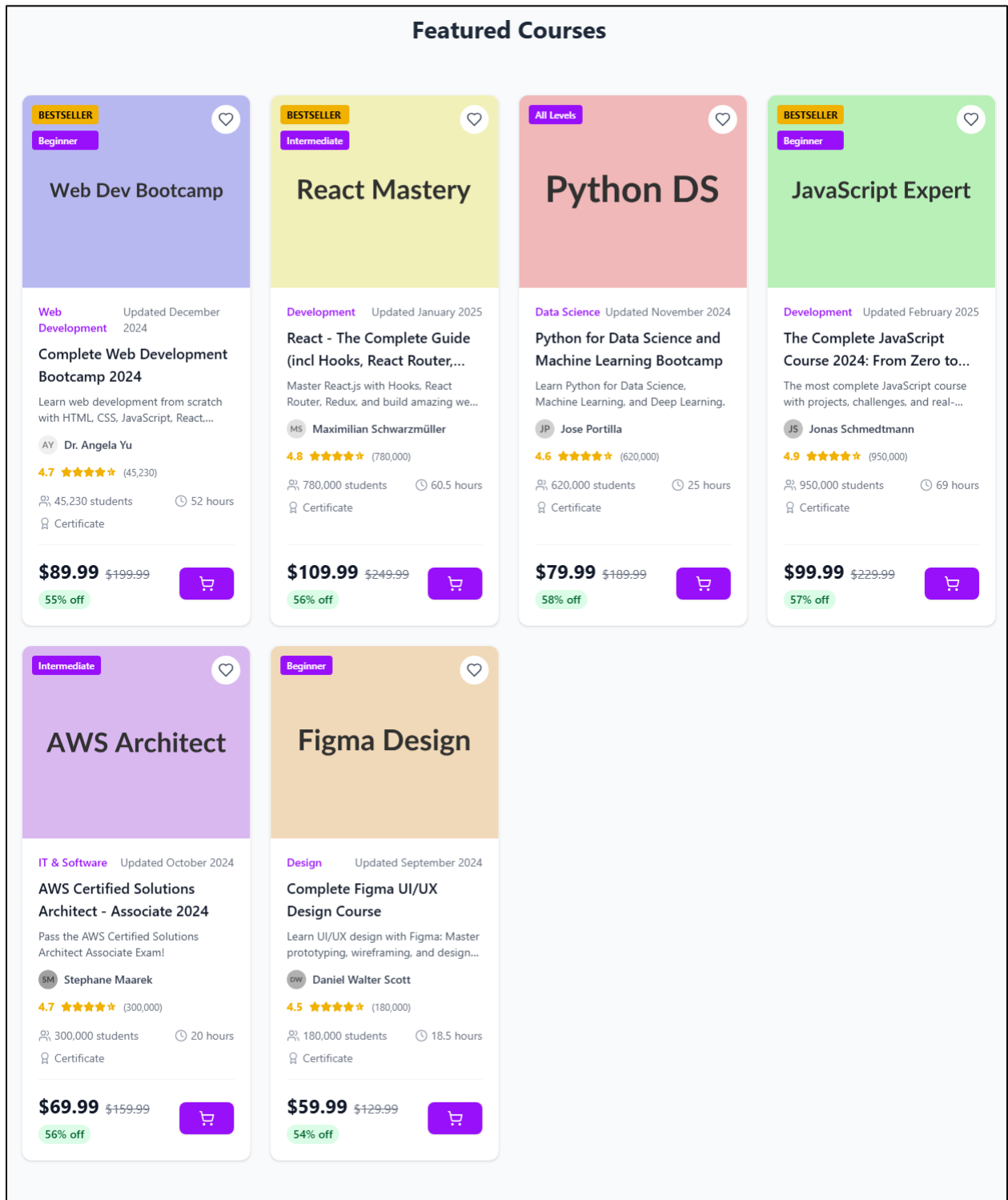
The login component features a light purple background with a white rounded rectangle in the center. At the top, the text "Log in to your Udemy account" is displayed in bold black font. Below this, there are two input fields: "Email address" and "Password", both with light gray borders and placeholder text. A prominent blue button with the text "Log in" is positioned below the input fields. At the bottom, there are two links: "Or [Forgot Password?](#)" and "Don't have an account? [Sign up](#)".

- Registration Component (Udemy clone project)



The registration component features a light purple background with a white rounded rectangle in the center. At the top, the text "Sign up and start learning" is displayed in bold black font. Below this, there are three input fields: "Full Name", "Email address", and "Password", all with light gray borders and placeholder text. A prominent blue button with the text "Sign up" is positioned below the input fields. At the bottom, there is a line of text: "By signing up, you agree to our [Terms of Use](#) and [Privacy Policy](#)." followed by the link "Already have an account? [Log in](#)".

- Course Cards (Udemy clone project)



- Course Details (Udemy clone project)

Web Development / Beginner

## Complete Web Development Bootcamp 2024

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- Understand RESTful APIs and how to integrate them

### Course content

- Introduction to Web Development (2 hours)
- HTML Essentials (4 hours)
- CSS Fundamentals (6 hours)
- JavaScript Basics (8 hours)
- React.js Mastery (12 hours)
- Node.js & Express (10 hours)
- MongoDB Database (6 hours)
- Deployment & Best Practices (4 hours)

### Requirements

- No prior programming experience required
- A computer with internet access
- Motivation to learn and build amazing things!

### Instructor

AY

**Dr. Angela Yu**  
Lead Instructor at Web Development Academy

Dr. Angela Yu is a passionate educator with over 10 years of experience in web development. She loves helping students achieve their goals and build amazing projects. Her teaching style is highly practical, focusing on hands-on coding and real-world scenarios.

### Student feedback

4.7 ★★★★★ Course Rating

Alice C. ★★★★★ 2 months ago

Absolutely brilliant! Angela explains complex topics in a clear, easy-to-understand way. Highly recommend!

Bob T. ★★★★★ 1 month ago


Great content, but some parts felt a bit rushed. Overall, an excellent course for beginners.

Charlie S. ★★★★★ 3 weeks ago

I learned so much! This bootcamp gave me the confidence to start building my own projects.

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- Instructor Profile Page (Udemy clone project)



Top Instructor
Bestselling Author
Expert Level

## Dr. Sundar Pichai

Senior Full Stack Developer & Tech Educator

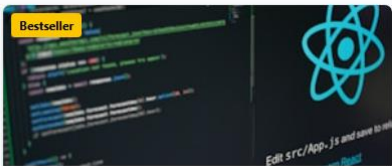
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★ 4.8 (12,453) 40.5 hours 156 lectures All Levels

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By Sarah Johnson

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Bestseller



**Python for Data Science and Machine Learning Bootcamp**

By Dr. Michael Chen

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**Total ₹149.97**

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- User dashboard (Udemy clone project)

Courses in Progress

4

+2 this month

Hours Learned

127

+15 this week

Certificates Earned

5

+1 this month

Learning Streak

15

days in a row

Learning Progress

75%

Overall Progress

67%

This Month

90%

This Week

15 day streak

My Courses

All Courses

Web Development

4.8

Complete React Developer Course 2024

by John Smith

Progress 75%

21/28 lessons 45 hours

Continue

Programming

4.9

Advanced JavaScript Concepts

by Emma Wilson

Progress 100%

15/15 lessons 22 hours

Continue

Design

4.7

UI/UX Design Fundamentals

by Michael Chen

Progress 45%

9/20 lessons 30 hours

Continue

Data Science

4.6

Python for Data Science

by Dr. Lisa Park

Progress 20%

7/35 lessons 50 hours

Continue

Recent Activity

Completed "Advanced Array Methods" lesson

Advanced JavaScript Concepts

2 hours ago

Started "State Management with Redux"

Complete React Developer Course 2024

1 day ago

Earned JavaScript Fundamentals Certificate

Advanced JavaScript Concepts

2 days ago

Achieved 15-day learning streak!

3 days ago

Achievements

First Course Completed

Week Warrior

Knowledge Seeker

Speed Learner

Master Student

Community Helper

15



- Course player (Udemy clone Project)

Complete React Developer Course 2024

4.8

(2,341 reviews)

Progress: 65%

Content

Notes

Resources

Course Content

Introduction to React

12:30

What is React?

5:20

Setting up Environment

7:10

JSX and Components

18:45

Understanding JSX

8:30

Creating Components

10:15

State and Props

22:15

Managing State

12:00

Managing State in React Components

Learn how to effectively manage component state using React hooks and best practices for state management in modern React applications.

22 minutes

98% liked this lesson

45 questions

- Project Cards (Portfolio website project)

Projects

MoneyMonk - Personal Expense Tracker

A personal expense tracker app that allows users to track their expenses, set budgets, and generate reports.

React

Node.js

Express

MongoDB

Code

Live

SmartDiet Recommendation

A Machine Learning project that recommends diet plans based on the user's input meals. Built with Flask and scikit-learn.

Flask

scikit-learn

Python

Code

Live

Youtube Backend

Scalable backend for a YouTube-like platform. Implements RESTful APIs, JWT authentication, and media handling using Multer and Cloudinary.

Node.js

Express

MongoDB

JWT

Multer

Cloudinary

Code







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- Contact Form (Portfolio website project)

## Let's Connect

Whether you have an idea, a project, or just want to say hello — feel free to reach out!

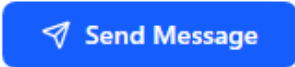


Your Name

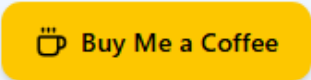
Your Email

Your Message

Let's build something awesome together!



Prefer direct email? Reach out at [chiragrathod.dev@gmail.com](mailto:chiragrathod.dev@gmail.com)



## Reference

- Hitesh Choudhary – Chai aur Code YouTube Series:  
<https://www.youtube.com/@HiteshChoudhary>
- React Official Documentation  
<https://reactjs.org>
- Tailwind CSS Documentation  
<https://tailwindcss.com/docs>
- React Router Documentation  
<https://reactrouter.com>
- Git & GitHub Official Documentation  
<https://docs.github.com>
- FreeCodeCamp Articles & Tutorials  
<https://www.freecodecamp.org>
- W3Schools – React & JavaScript Tutorials  
<https://www.w3schools.com>
- Mobbin – UI Inspiration for Web Design  
<https://mobbin.com>
- JavaScript Info – Deep Dive into JS Concepts  
<https://javascript.info>
- Stack Overflow – Community Solutions and Debugging  
<https://stackoverflow.com>
- GitHub Pages – Free Hosting for Static Sites  
<https://pages.github.com>

## Conclusion

My internship at Tech Elecon Pvt. Ltd. provided a practical and immersive experience in frontend web development using React JS. Throughout the internship, I was able to strengthen my theoretical understanding of React and apply it to real-world projects and interfaces. The hands-on learning approach helped me become proficient in component-based development, responsive design, state management, and frontend deployment workflows.

### Key Takeaways

- Modern Frontend Development with React JS
  - React's component-based architecture enabled the development of modular, reusable, and interactive UI components. I implemented various features such as dark/light theme toggles, routing systems, form handling, and data rendering in projects like my personal portfolio and Udemy clone.
- Responsive and Scalable Styling with Tailwind CSS
  - Using Tailwind CSS, I was able to build highly responsive layouts and customize design elements efficiently. It provided full control over spacing, colors, and responsiveness, reducing the need for custom CSS and accelerating development time.
- Project Deployment and Version Control
  - I deployed my portfolio website using GitHub Pages and configured a custom domain, gaining practical exposure to deployment processes. Additionally, using Git & GitHub helped in tracking versions, backing up code, and managing project milestones professionally.
- Continuous Learning and Mini Projects
  - Throughout the internship, I engaged in continuous learning via online resources like Chai aur Code by Hitesh Choudhary and applied those learnings in projects.

### Final Thoughts

This internship served as a critical stepping stone in my journey as a frontend developer. I not only learned how to write clean and efficient React code but also understood the importance of UI/UX, responsive design, and code maintainability. Working in a semi-professional environment introduced me to real-world project structures, design systems, and development best practices.

The successful implementation of multiple projects during the internship has prepared me to take on more advanced frontend challenges in future roles. It has laid a solid foundation for building scalable and user-centric applications, and I am confident in applying this experience to professional full-stack development environments going forward.