NEXT GEN EMPLOYABILITY PROGRAM

CREATING A FUTURE-READY WORKFORCE

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CAPSTONE PROJECT SHOWCASE

Project Title

Crowdfunding Platform with React and ExpressJS Framework (P1)

Abstract | Problem Statement | Project Overview | Proposed Solution | Technology Used | Modelling & Results | Conclusion | Q&A

Abstract

1. **Crowdfunding Platform with React and ExpressJS** is a web-based solution designed to facilitate secure and transparent fundraising for various causes, enabling users to create and manage campaigns seamlessly.

2. The platform features a **React.js frontend** for an intuitive user experience, while the **Express.js and MongoDB backend** ensures secure data handling and efficient campaign management.

3. **Key functionalities** include campaign creation, donation processing, real-time updates, admin dashboard for managing funds, and user authentication for secure transactions.

4. This project aims to **enhance accessibility, trust, and efficiency** in online fundraising by providing a robust and scalable solution for individuals and organizations.

Problem Statement

- Crowdfunding is a vital tool for individuals, startups, and organizations to raise funds for various causes, yet existing platforms often suffer from high transaction fees, lack of transparency, and limited accessibility.
- This project aims to address these challenges by developing a **secure, transparent, and user-friendly crowdfunding platform** that enables users to:
  - ✓ **Create and manage campaigns** easily.
  - ✓ **Track donations in real-time** for transparency.
  - ✓ **Ensure secure payments** with **Paytm integration**.
  - ✓ **Use a modern tech stack** with **React, ExpressJS, and MongoDB** for scalability.

Project Overview

- A **crowdfunding platform** built with **React (Frontend)** and **ExpressJS (Backend)**, using **MongoDB** for data storage.
- Users can **create, manage, and contribute** to campaigns securely.
- **Admin dashboard** for monitoring campaigns and donations.
- **Real-time tracking** of funds raised for transparency.
- **Paytm integration** for seamless payment processing.
- **Secure authentication** with JWT for admin login.
- **User-friendly interface** with responsive design.

Proposed Solution

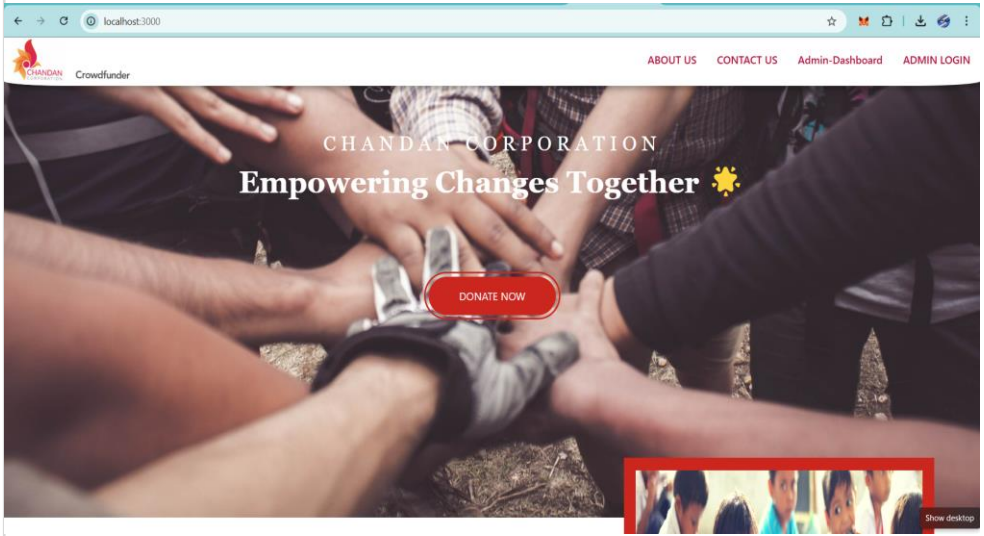
- **Frontend Implementation (React.js)**
  - Built using **React.js** for a dynamic and responsive user interface.
  - Utilized **React Router** for seamless navigation between pages.
  - Integrated **state management** for handling user interactions and campaign data.
- **Backend Development (Express.js & Node.js)**
  - Developed with **Express.js and Node.js** to handle API requests efficiently.
  - Implemented **RESTful APIs** for campaign management, user authentication, and donation processing.
  - Used **JWT-based authentication** to secure admin and user logins.
- **Database (MongoDB Atlas)**
  - Hosted on **MongoDB Atlas** for scalable and cloud-based data storage.
  - Structured data using **Mongoose models** for campaigns, users, and transactions.
- **Payment Gateway Integration**
  - **Paytm integration** for seamless and secure online payments.
  - Transaction details stored and managed for transparency and accountability.
- **Additional Features**
  - **Admin Dashboard** for monitoring donations and managing campaigns.
  - **Real-time donation tracking** to show the latest contributions.
  - **Secure and scalable** system designed to handle large user interactions efficiently.

Technology used

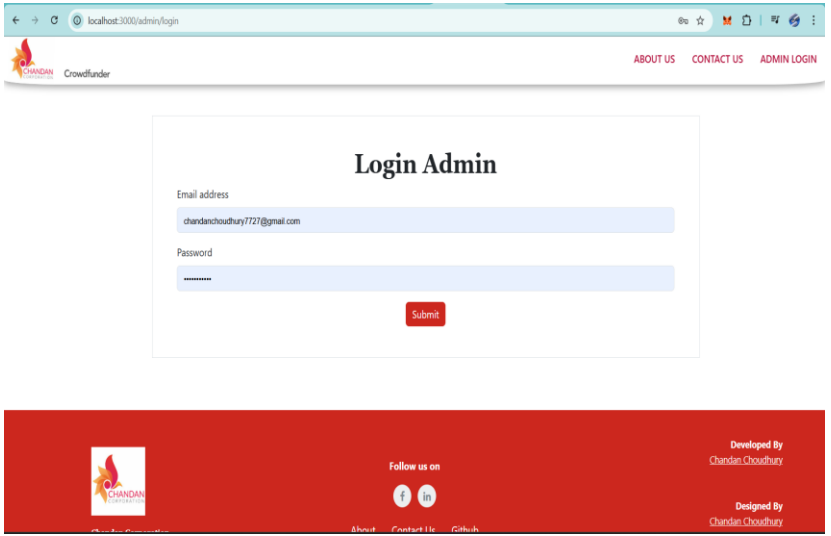
- **Frontend:** Built using **React.js** for a dynamic user interface, **React Router** for navigation, and **CSS Modules** for styling.
- **Backend:** Developed with **Node.js** and **Express.js** to handle API requests efficiently. **JWT (JSON Web Token)** is used for secure authentication and session management.
- **Database: MongoDB Atlas** is used as a cloud database, with **Mongoose** to define and manage data models.
- **API & Security: CORS** is enabled for cross-origin requests, **Body-parser** processes incoming requests, and **Bcrypt.js** ensures encrypted password storage.
- **Payment Integration:** Integrate **Paytm Payment Gateway** for secure and seamless donation transactions.
- **Development & Deployment:** APIs tested using **Postman**, version control managed through **GitHub**, frontend planned to host on **Vercel**, and backend deployment planned on **Railway/Render**.

Modelling & Result

Home Page

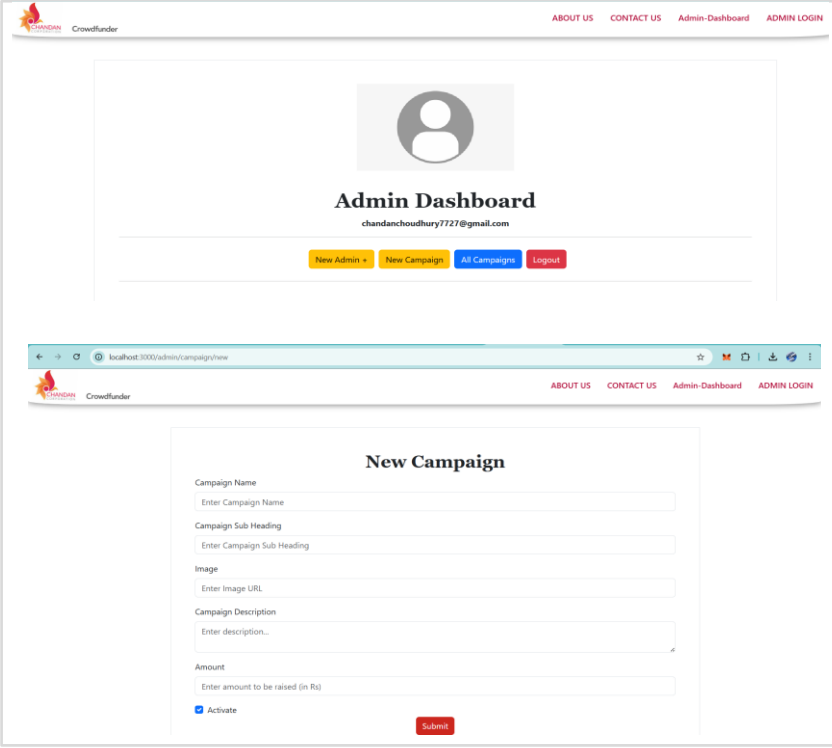


Admin Login Page

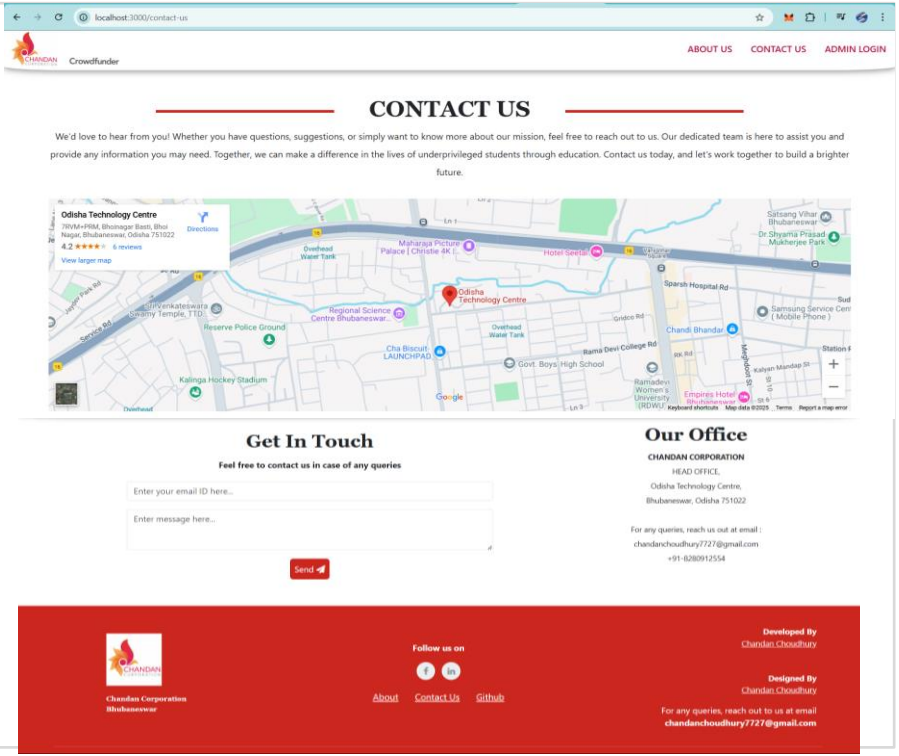


Modelling & Result

Admin Dashboard & New Campaign Creation Page

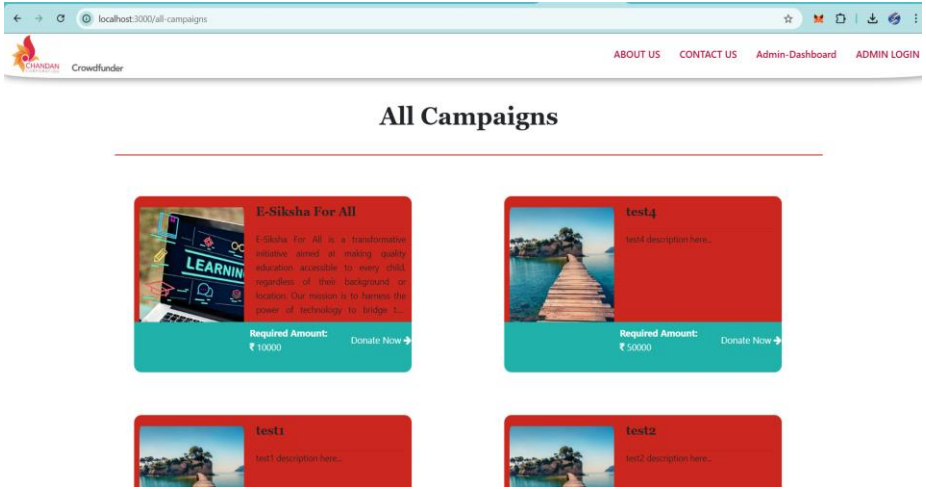


Contact Us Page

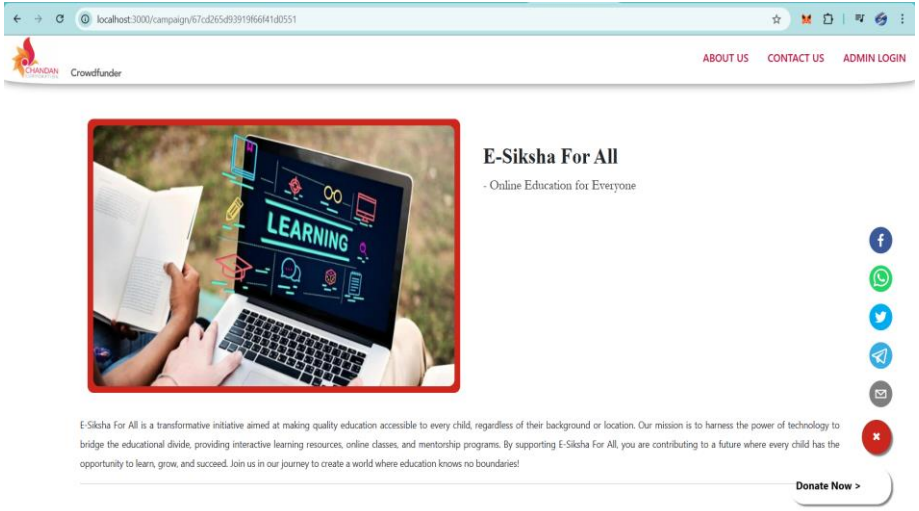


Modelling & Result

All Campaign's Page



Donation Page: Clicking on Donate now →Donation Form → Paytm Payment Gateway



Conclusion

- This crowdfunding platform provides a seamless and secure way to support campaigns, ensuring transparency and ease of use.
- With **React.js** for frontend, **Express.js & Node.js** for backend, and **MongoDB Atlas** for data storage, the system ensures a scalable and efficient architecture.
- **Paytm payment gateway integration** for secure transactions.
- This project demonstrates the power of modern web technologies in building a user-friendly and impactful crowdfunding solution.

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