Full Stack Development with MERN

Project Documentation format

● Introduction

- **Project Title:** SURVEY MASTER - Survey Form
- **Team Members:** SWTID1744184068 - Team ID
    1) Lakshmi Amrutha Duvvuri - Documentation
    2) Sakshee - Documentation
    3) Khushi Malviya - Frontend & Backend
    4) Ayush Kumar - Documentation

● Project Overview

- **Purpose:**

  The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer's problem. It helps entrepreneurs,marketers and corporate innovators identify behavioral patterns and recognize what would work and why.
  ❑ Solve complex problems in a way that fits the state of your customers.
  ❑ Succeed faster and increase your solution adoption by tapping into existing mediums and channels of behavior.
  ❑ Sharpen your communication and marketing strategy with the right triggers and messaging.
  ❑ Increase touch-points with your company by finding the right problem-behavior fit and building trust by solving frequent annoyances, or urgent or costly problems.
  ❑ Understand the existing situation in order to improve it for your target group.
- **Features:** The proposed solution is the Survey Form Web Application, a user-friendly platform that allows businesses to create, distribute, and analyze surveys effortlessly. It offers various question formats, real-time analytics, data export options, and cross-platform compatibility. It helps businesses like ABC Electronics gather customer feedback to identify problem areas and implement data-driven improvements.
- 3. Novelty / Uniqueness : Unlike traditional survey tools, this application combines flexibility in survey design, real-time analytics, mobile responsiveness, and secure data handling in one platform. Its dynamic form builder and intuitive dashboard make it suitable even for users with limited technical knowledge.
- 4. Social Impact / Customer Satisfaction : By identifying key customer issues and improving service quality, the application enhances overall customer satisfaction. Businesses can respond proactively to customer needs, ultimately leading to better retention,trust, and brand reputation.

● Architecture

- **Frontend:** Built with React, the frontend is a single-page application that uses React Router for navigation, Axios for API requests, and Redux for state management.
- **Backend:** Developed using Node.js and Express.js, the backend serves RESTful APIs for user management, survey operations, and response handling.
- **Database:** MongoDB is used to store user profiles, survey structures, and responses. Mongoose ORM facilitates database operations and schema validation.

- **Setup Instructions**
- **Prerequisites:**

Ensure the following software is installed:

- Node.js ≥ v14
- MongoDB ≥ v4.4 (or MongoDB Atlas)
- Python ≥ 3.8 (for analytics module)
- Docker & Kubernetes (for containerized deployment)
- AWS CLI (if deploying to AWS)
- Git

• **Installation:**

- Clone the Repository:
  bash
  `git clone https://github.com/khushi-malviya/SurveyMaster/tree/main`
- Install Dependencies:
  bash

  ```
  cd frontend
  npm install
  cd ../backend
  npm install
  ```
- Environment Variables Setup: Create a `.env` file in `server` with the following:
  env
  `MONGO_URI=your_mongodb_atlas_connection`
- `JWT_SECRET=your_jwt_secret_key`
- `SENDGRID_API_KEY=your_sendgrid_api_key`
- `GOOGLE_CLIENT_ID=your_google_oauth_client_id`
- `GOOGLE_CLIENT_SECRET=your_google_oauth_client_secret`

- Folder Structure

📁 SURVEYMASTER/

📁 Backend/

├── 📁 db/ # Database connection and config (optional folder, details not shown)

├── 📁 Admin/

│ └── adminSchema.js # Mongoose schema for admin users

├── 📁 User/

│ ├── surveySchema.js # Mongoose schema for surveys

│ └── userSchema.js # Mongoose schema for regular users

├── config.js # Main configuration file (DB URI, environment)

```
├── config(1).js              # (Possibly duplicate or backup file)
├── server.js                 # Primary server entry point
├── server(1).js              # (Possibly duplicate or backup file)
├── package.json              # Project dependencies
├── package(1).json           # (Possibly duplicate)
├── package-lock.json         # Dependency lock file
├── package-lock(1).json      # (Possibly duplicate)
├── 📁 node_modules/          # Installed packages (auto-generated)



├📁 Frontend/
├── 📁 public/
│   └── vite.svg              # Vite logo
├── 📁 src/
│   ├── 📁 Admin/             # Admin-side components
│   │   ├── AdminResponses.jsx    # View user responses
│   │   ├── Ahome.jsx         # Admin homepage/dashboard
│   │   ├── Alogin.jsx        # Admin login page
│   │   ├── Anavbar.jsx       # Admin navbar
│   │   ├── SurveyForms.jsx       # Forms created by users
│   │   ├── UserEdit.jsx      # Edit user details
│   │   └── Users.jsx         # View/manage users
│   ├── 📁 User/              # User-side components
│   │   ├── CreateSurvey.jsx      # Create a survey
│   │   ├── MyForms.jsx       # View own created forms
│   │   ├── Navbar.jsx        # User navbar
│   │   ├── RespondSurvey.jsx     # Fill out a survey
│   │   ├── Ulogin.jsx        # User login
```

```
│   │   └── ViewResponse.jsx        # View submitted responses
│   ├── 📁 assets/                  # Styles and static assets
│   │   ├── App.css
│   │   ├── index.css
│   ├── App.jsx                     # Main app component
│   └── main.jsx                    # App entry point
├── .eslintrc.cjs                   # ESLint config
├── .gitignore                      # Git ignore rules
├── index.html                      # HTML template
├── package.json                    # Project dependencies
├── package-lock.json               # Dependency lock file
├── postcss.config.js               # PostCSS setup for Tailwind
├── tailwind.config.js              # Tailwind CSS configuration
├── vite.config.js                  # Vite bundler config
└── README.md # Project documentation
```

Running the Application

• Backend:
terminal
- `cd install`
- `npm start`

• Frontend:
terminal
- `cd frontend`
- `npm run dev`

- API Documentation

• Authentication:

Method	Endpoint	Description
POST	`/api/auth/register`	Register a new user
POST	`/api/auth/login`	Login existing user
GET	`/api/auth/google`	Google OAuth login

• Surveys:

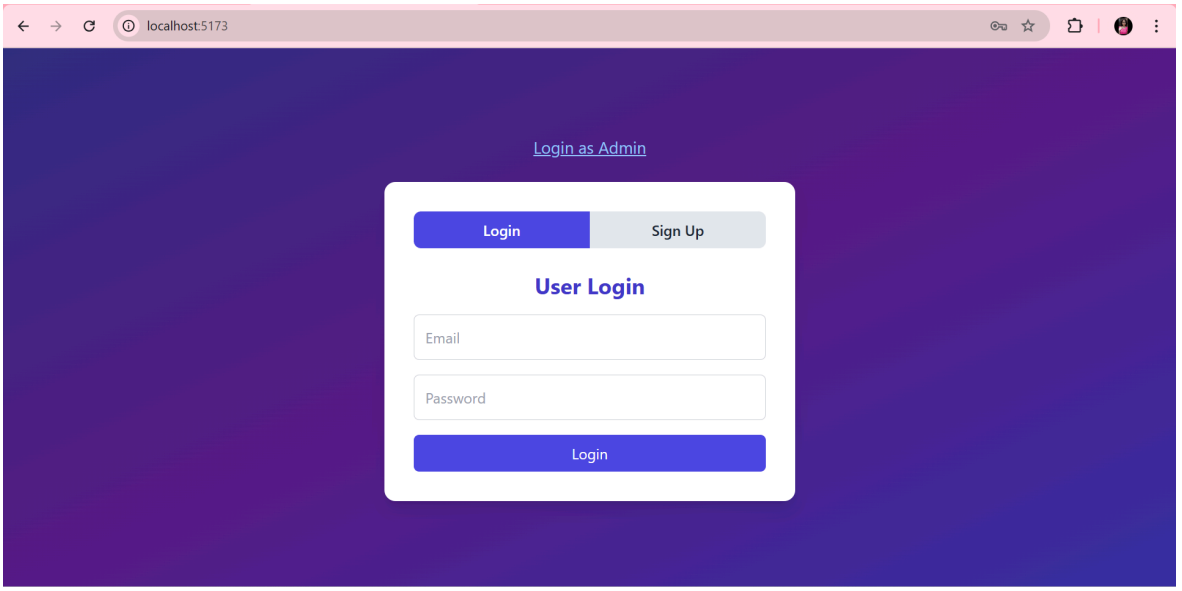
Method	Endpoint	Description
GET	`/api/surveys`	Get all surveys
POST	`/api/surveys`	Create a new survey
PUT	`/api/surveys/:id`	Edit existing survey
DELETE	`/api/surveys/:id`	Delete a survey

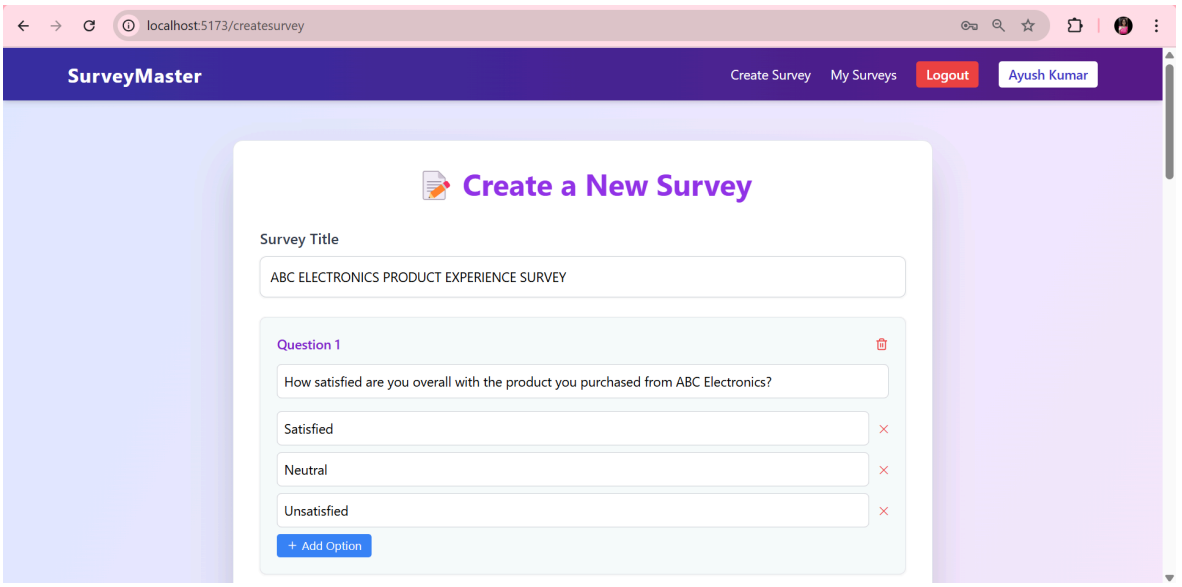
• Responses:

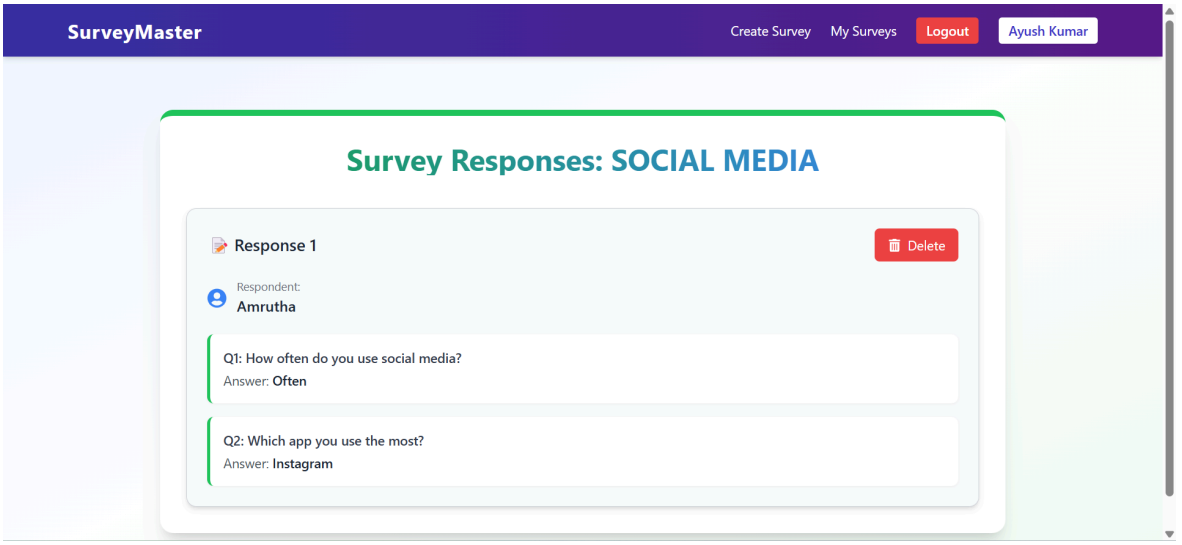
Method	Endpoint	Description
POST	`/api/responses`	Submit survey response
GET	`/api/responses/:surveyId`	Get responses for a survey

- Authentication
- Uses JWT tokens stored in localStorage after login.
- Supports OAuth 2.0 (Google/Facebook login).
- Backend verifies the token on protected routes using middleware.
- Role-based access is managed on both frontend and backend.

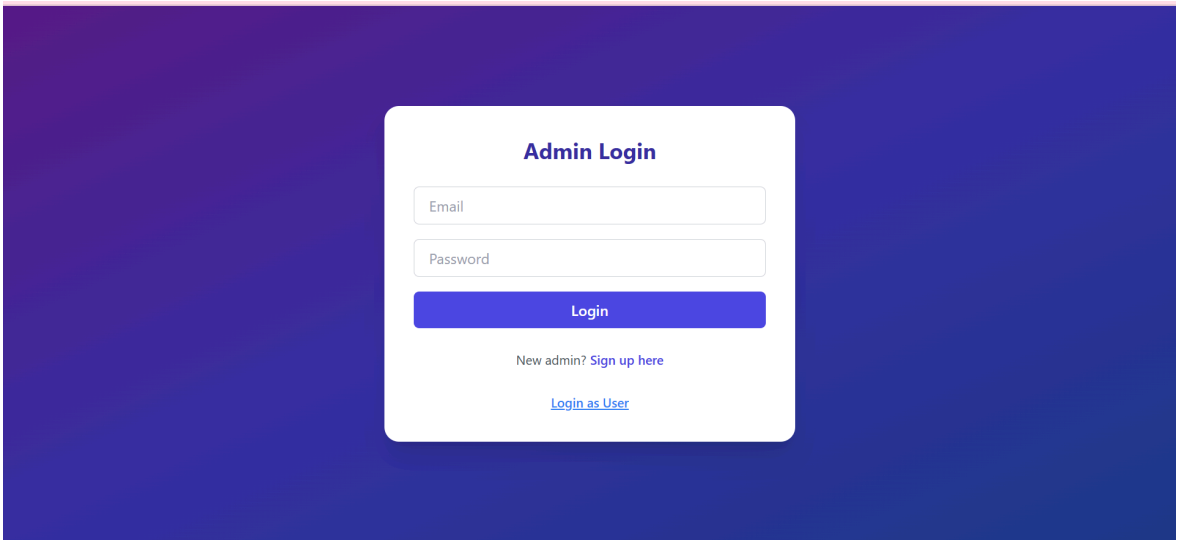
- User Interface :

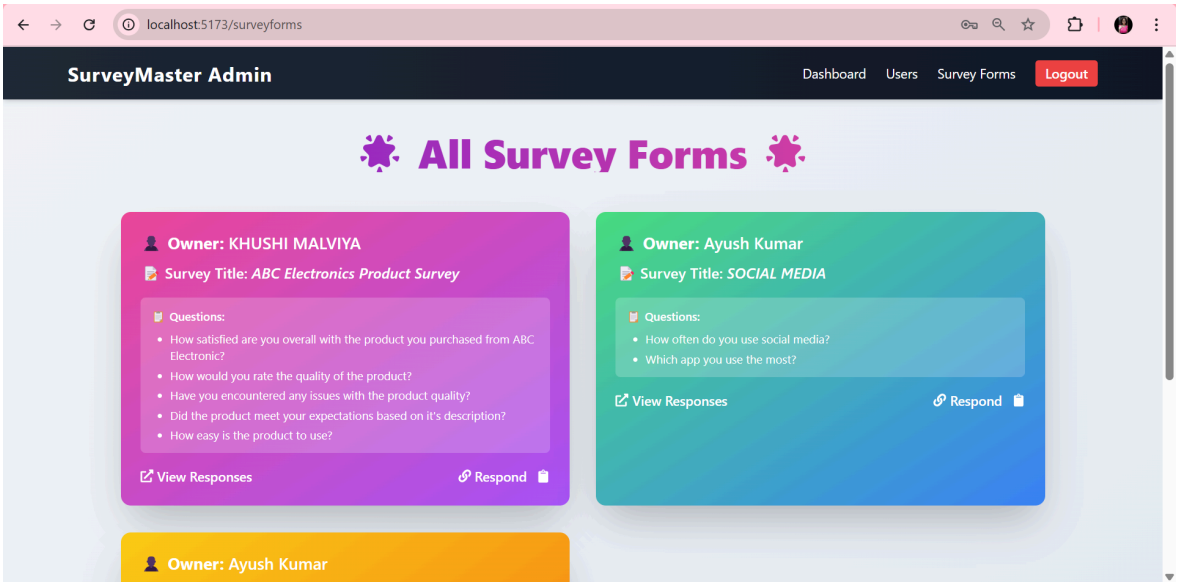

localhost:5173
Login as Admin
Login
Sign Up
User Login
Email
Password
Login


localhost:5173/createsurvey
SurveyMaster
Create Survey
My Surveys
Logout
Ayush Kumar
Create a New Survey
Survey Title
ABC ELECTRONICS PRODUCT EXPERIENCE SURVEY
Question 1
How satisfied are you overall with the product you purchased from ABC Electronics?
Satisfied
Neutral
Unsatisfied
+ Add Option

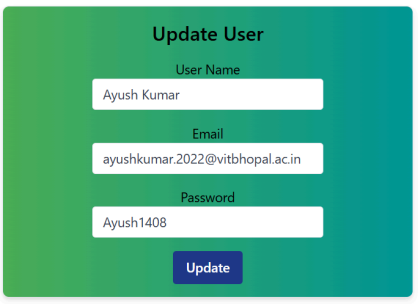

SurveyMaster
Create Survey
My Surveys
Logout
Ayush Kumar
Survey Responses: SOCIAL MEDIA
Response 1
Delete
Respondent:
Amrutha
Q1: How often do you use social media?
Answer: Often
Q2: Which app you use the most?
Answer: Instagram

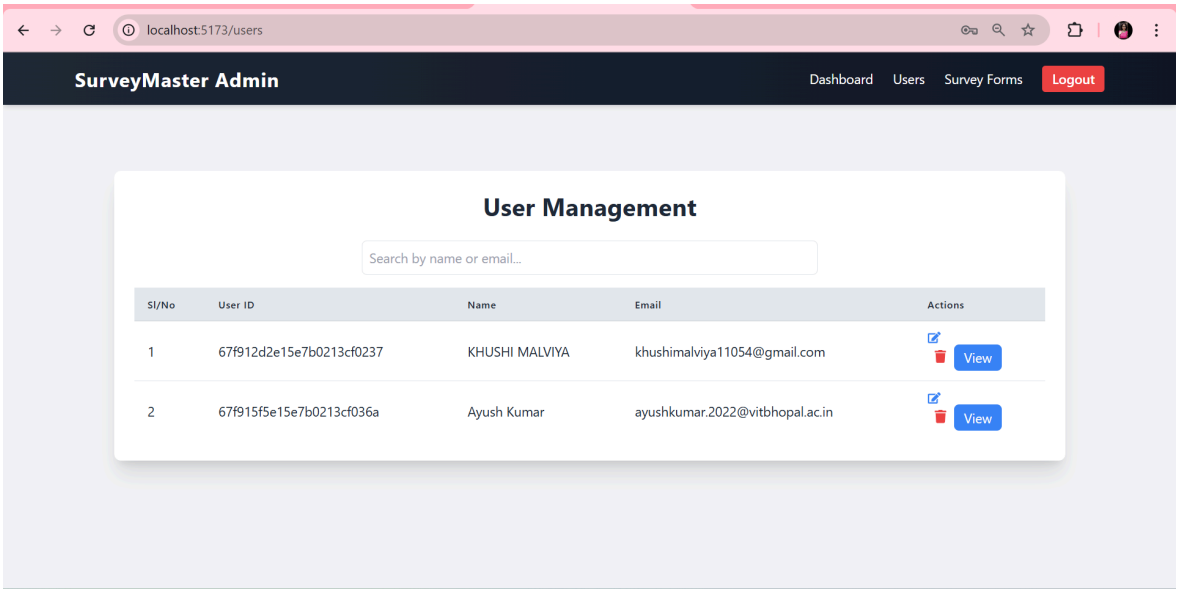
ADMIN :


Admin Login
Email
Password
Login
New admin? Sign up here
Login as User


localhost:5173/surveyforms
SurveyMaster Admin
Dashboard
Users
Survey Forms
Logout
All Survey Forms
Owner: KHUSHI MALVIYA
Survey Title: ABC Electronics Product Survey
Questions:
How satisfied are you overall with the product you purchased from ABC Electronic?
How would you rate the quality of the product?
Have you encountered any issues with the product quality?
Did the product meet your expectations based on it's description?
How easy is the product to use?
View Responses
Respond
Owner: Ayush Kumar
Survey Title: SOCIAL MEDIA
Questions:
How often do you use social media?
Which app you use the most?
View Responses
Respond
Owner: Ayush Kumar


localhost:5173/useredit/67f915f5e15e7b0213cf036a
SurveyMaster Admin
Dashboard
Users
Survey Forms
Logout


Update User
User Name
Ayush Kumar
Email
ayushkumar.2022@vitbhopal.ac.in
Password
Ayush1408
Update



- Frontend Testing Tools:
  - Jest
  - React Testing Library
- Backend Testing Tools:
  - Mocha
  - Chai
  - Supertest

• Testing Strategy:

- Unit Tests: For components, API routes, and logic.
- Integration Tests: Survey submission flow.
- Performance Tests: Load testing with tools like Postman or JMeter.

- **Screenshots or Demo**
  - Link for the demo video - https://drive.google.com/file/d/1iSA_SDdiexkV1q88JeMKyCxEErBTaA8h/view?usp=drive_link

- **Known Issues**
  - Limited survey question types
  - No export to CSV functionality yet
- **Future Enhancements**
  - Add drag-and-drop survey builder
  - Implement export options (CSV, PDF)
  - Add analytics with charts and graphs
  - Implement multi-language support