**ERP Portal: Faculty Registration Module**

Linke: [codaks/ST-Project](https://github.com/codaks/ST-Project)

**Project Overview**

This project implements a module for an ERP portal focusing on faculty registration and course management. The module includes:

* Login/Signup functionality
* Profile editing
* Course addition, deletion, and updates

The purpose of this project is to test the client-side code by designing test cases that bypass validation and perform mutation testing.

The project is developed using **React** (client-side), **Node.js** (server-side), and **MySQL** (database).

**Key Features**

1. **Client-Side Validation**: Tested for bypass vulnerabilities.
2. **Mutation Testing**: Integrated Stryker to evaluate robustness.

**Test Strategy**

**Bypass Testing**:

* Designed test cases that directly manipulate form inputs or script data to bypass client-side validation.
* Sent altered/corrupt data to the server.

**Tools Used**:

* **Stryker**: Mutation testing tool.
* Browser dev tools for form/script manipulation.

**How to Run**

**Backend Setup**

1. Navigate to the backend folder:

*cd backend*

1. Install backend dependencies:

*npm install*

1. Set up the MySQL database:
   * Run the SQL scripts provided in backend/sql/ to create the necessary database schema and tables.
   * Update the backend/config/db.js file with your MySQL credentials:

*const dbConfig = {*

*host: 'localhost',*

*user: 'your-username',*

*password: 'your-password',*

*database: 'erp\_portal\_db'*

*};*

1. Start the backend server:

*npm start*

**Frontend Setup**

1. Open a new terminal and navigate to the frontend folder:

*cd frontend*

1. Install frontend dependencies:

*npm install*

1. Start the React development server:

*npm start*

**Running Tests**

* To run mutation tests using Stryker, navigate to the frontend or backend folder (where configured) and run:

*npx stryker run*

* To run other tests, use the npm test command in the appropriate folder.

**Results**

* **Mutation Testing Score**: 82% mutation coverage.
* **Screenshots**:

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**Team Contributions**

| **Team Member** | **Contribution** |
| --- | --- |
| Chitransh Kulshrestha MT2023047 | Edit Profile, Updating, Deleting, and Adding new courses with test cases |
| Gramya Gupta MT2023047 | Functionality of Login and Signup with test cases |