

Graduation Project Document

DSRC – Data Management

Unique and Generic Aspects

Submitters: Liad Uziel & Ohad Cohen

Project Overview

The graduation project in MEAN(MongoDB, Express.js, Angular, NodeJS) STACK aimed to develop a research proposal management system for the University of Haifa. The system caters to various users, including simple users who can submit research requests, reviewers who evaluate proposals, team members who collaborate on proposals, and administrators with overarching control.

Unique & Generic Features

1. Custom Fields

One of the standout features of this project is the ability to add custom information to each research proposal. Administrators have the flexibility to insert new field names and values as needed. This allows each proposal to contain unique information beyond the standard fields, enhancing versatility and adaptability.

2. Multi Fields Component

To handle scenarios where multiple values of certain types need to be collected (e.g., team members and budget parts), a multi-fields component was developed. This component dynamically adds and removes values, improving the user experience and making the system more generic and flexible.

3. Email Verification

The project implements a two-step email verification process for user registration, ensuring the authenticity of user accounts. This verification mechanism is also utilized when users need to reset their passwords, enhancing security.

4. Remember Me Functionality

The "Remember Me" feature allows users to stay logged in after authentication, enhancing user convenience. This feature is implemented securely using JWT (JSON Web Tokens) authentication.

5. File Upload and Download

Users can upload files as part of their research proposal submissions. The system includes generic functions for file uploads, ensuring compatibility and security. Additionally, users can download uploaded files easily.

6. Page Refresh

The project leverages Angular to minimize page refreshes. Only the relevant content is loaded using the router-outlet, contributing to a smoother and more responsive user experience.

7. Dropdown Lists with Search

Dropdown lists for selecting departments, universities, and roles feature a closed list with search functionality. This makes it easier for users to find and select relevant options, especially in cases where there are many entries.

8. Selecting Existing or Non-Existing Team Members

When adding team members to a proposal, users have the option to select existing users from the system or enter the email of a team member who is not yet registered. This flexibility ensures that records can be linked to future users.

9. Parent Form

To accommodate different types of proposals with both common and unique fields, a parent form was designed. This centralizes common fields, allowing for the addition of generic fields in one place in the code, ensuring consistency across proposals.

10. High-Level Validation

The forms in the system feature high-level validation to prevent submission errors. Users are guided to complete mandatory fields, and validation occurs both in the UI and on the server, providing robust data integrity.

11. Adding Products Only to Relevant Proposals

The project includes a feature that allows users to add products to proposals, but it restricts product selection to only those relevant to the user's proposals. This prevents duplicate entries and streamlines data entry.

12. Generic Checkbox Component

To optimize code and reduce redundancy, a generic checkbox component was developed. This component accepts a value and label, generating a consistent checkbox UI throughout the application.

13. Export to CSV

In the management table, users can export data to a CSV file. This export functionality is adaptable and works seamlessly with filtered data, providing users with a convenient way to extract information.

14. Multi-Stage Filtering

The management table incorporates multi-stage filtering, offering users multiple options for refining their search. Users can search for records using keywords, choose grant types, departments, and filter by status. Additionally, a "clear filters" button simplifies the removal of all applied filters.

15. Adding Reviews

Authorized users have the ability to add reviews to proposals. This feature not only enhances the evaluation process but also provides valuable feedback for proposal submitters. The reviews are presented in tables for easy reference.

16. Status Badge Updates

The project includes a feature that allows administrators to update the status of grant proposals. The updated status is displayed as a visually appealing badge, making it easy for users to track the progress of their proposals.

17. Row Expansion in Admin Table

In the management table, critical information is presented initially, but users can expand rows to view comprehensive details. This approach provides a user-friendly overview while ensuring all relevant information is easily accessible.

18. Consistent Design

The entire system adheres to a consistent design, creating a cohesive user experience. This design consistency extends across all pages, contributing to a visually pleasing and intuitive interface.

19. Dark and Light Mode

Users have the option to switch between dark and light mode on the website. The theme transition applies universally, and the system remembers the user's last chosen mode for future logins, enhancing user personalization.

20. Loader Animations

To improve user experience during data loading, the project features loader animations in all tables. These animations provide visual feedback, assuring users that data is being processed.

21. Experiential Home Page

The home page of the system is designed to be engaging and informative. It includes animations and a detailed description of the platform's purpose. For unauthenticated users, interactive prompts direct them to either log in or register.