Field Training 2

Training Center System

Amr Fakher Nawar
20100243

East Delta Electricity Production Company

1. Ismailia, Shebin El-Koum Street
2. Mentors: Islam Elsaify , Mohamed Ibrahim
3. Contacts: Eng. Wafaa Shehta Ahmed
   Head Sector of Planning Follow-up & Information Systems.
4. Duration of the training was 3 Months.

Abstract

On the 10th of June, we convened a meeting with **Eng. Wafaa Shehta Ahmed**, the manager of the IT Department. During the meeting, she inquired about my prior experience with programming languages and any previous project involvement.

Shortly thereafter, **Engineer Islam ElSaify and Engineer Mohamed Ibrahim** joined the discussion. While we engaged in a preliminary conversation regarding the **project** and its execution, we did not delve into the finer details during this meeting.

Engineer Islam ElSaify played a pivotal role as my primary mentor throughout the project, contributing significantly to 80% of our collaborative efforts. **Engineer Mohamed Ibrahim** also served as a mentor during the project, although his involvement was less extensive compared to Engineer Islam.

A calendar was set up for **a three-month period** to monitor my attendance and work hours. Throughout this timeframe, I maintained a full work schedule, actively contributing every day of the week **except for Fridays**.

During the initial week, we had a highly engaging and informative session regarding the project. We visited the training center and convened a **meeting** with the engineers from the center as well as our mentors. This meeting proved to be quite insightful as we received valuable feedback on the system's functionality and operation.

Additionally, we were provided with documents containing details such as the list of courses, the trainees working at the center, the individuals requiring full access to the website, the number of affiliated sites, and the specific courses to be taught at these sites.

Introduction

Project Title: Training Center Management System

Project Overview:

The Training Center Management System is a web-based application designed to efficiently manage trainees, trainers, and courses within a training center. The system's primary goal is to streamline the administration of training programs by providing a centralized database for trainee and trainer information, course details, and resource management. Key functionalities of the system include adding, updating, and deleting trainers, trainees, and courses, as well as viewing attendance records and search capabilities.

Project Objectives:

- To create a user-friendly website for managing trainers, trainees, and courses.
- To maintain a comprehensive database of trainer and trainee profiles, including personal information.
- To implement secure login access for administrators.
- To enable administrators to view and add courses.
- To facilitate searching for trainers and trainees by their respective IDs.
- To improve the accuracy and efficiency of managing the training center's operations.

Project Scope:

The project encompasses the development of a web application with both front-end and back-end components.

The front-end, developed by **Engineer Islam ElSaify** using ***Angular, JavaScript, TypeScript, and a technical framework***, is accessible through web browsers.

The back-end, powered by .***NET Core 7*** and programmed in ***C#***, is hosted on a server and handles data storage and retrieval. The development environment includes Visual Studio Code and Visual Studio.

Project Timeline:

The project commenced on ***June 15th*** and was successfully completed on ***September 27th***.

Project Importance:

The Training Center Management System is crucial for enhancing the efficiency and accuracy of the training center's operations. It assists in managing trainers, trainees, and courses, thus ensuring smoother day-to-day functioning and improved resource utilization.

Project Collaboration:

Engineer Islam ElSaify contributed significantly, working on approximately 80% of the project, while **Engineer Mohamed Ibrahim** was involved in the remaining portion.

Project Budget:

No monetary expenditure was incurred during the execution of this project.

Project Team:

- Primary Contributor: [Amr Nawar]
- Front-End Developer: Engineer Islam ElSaify
- Back-End Developer: Eng. Mohamed Ibrahim
- Manager of the IT Department: Eng. Wafaa Shehta Ahmed

Project Repository:

All project work and code were shared on dev.azure.com, providing a centralized platform for collaboration and version control.

Project Constraints:

There were no significant constraints or limitations associated with this project.

This project aims to improve the overall management of the training center and empower the company to efficiently oversee its training programs and resources.

Problem Statement:

The Training Center faces a critical challenge in efficiently managing its training programs, trainers, and trainees. The absence of a centralized system has resulted in difficulties in handling essential tasks such as course registration, tracking trainer qualifications, monitoring course progress, and ensuring proper supervision. The need for streamlined

management processes has become increasingly evident as the center seeks to expand its offerings and serve a broader range of trainees.

Additionally, the center lacks a robust system to manage essential data, such as course categories, job degrees for trainers, and the job level of trainees. The absence of a comprehensive database has made it challenging to make informed decisions regarding course offerings and resource allocation. Furthermore, there is a need to identify supervisors for courses and ensure they have the necessary information to oversee training effectively.

To address these challenges and enhance the center's operational efficiency, we have undertaken the development of the Training Center Management System. This system aims to centralize and automate various aspects of training program administration, providing a user-friendly interface for managing trainers, trainees, courses, and resources. By implementing this solution, we seek to revolutionize the training center's management, enabling it to meet its goals more effectively and serve its stakeholders with greater precision and flexibility.

Certainly, here's a solution overview for the Training Center Management System:

Solution Overview:

The Training Center Management System is a comprehensive web-based solution designed to address the challenges faced by the training center in managing its training programs, trainers, and trainees efficiently. This

system offers a range of features and functionalities aimed at streamlining processes and improving the overall management of the training center.

Key Features:

1. **Centralized Database**: The system will provide a centralized database for storing and managing crucial information, including trainer profiles, trainee data, course details, and resource allocation.

2. **User-Friendly Interface**: The system will feature an intuitive and user-friendly interface accessible via web browsers. This interface will be designed to ensure ease of use for administrators, trainers, and trainees.

3. **Role-Based Access Control**: To maintain data security, the system will implement role-based access control. Administrators will have access to all functionalities, while trainers and trainees will have restricted access to relevant data.

4. **Trainer and Trainee Management**:

- Add, edit, and delete trainer and trainee profiles.
- Track trainer qualifications, including job degrees and certifications.
- Capture trainee information, including job levels and course registrations.

5. **Course Management**:

- Add, edit, and delete course details, including course categories and durations.

- Assign trainers to courses and identify supervisors for each course.

6. **Attendance Tracking**: Record and view attendance for trainees in each course, allowing for accurate monitoring of course progress.

7. **Search Functionality**: Implement search capabilities to easily locate trainer and trainee profiles by their unique IDs or other relevant criteria.

8. **Resource Allocation**: Efficiently manage resources such as training materials, classrooms, and equipment, ensuring optimal resource utilization.

9. **Reporting and Analytics**: Generate reports and analytics to provide insights into course enrollment, trainer performance, and resource utilization, aiding in data-driven decision-making.

10. **Notification System**: Implement a notification system to alert administrators, trainers, and trainees about important updates and events related to courses and training programs.

Technology Stack:

- **Front-End**: The front-end will be developed using Angular, JavaScript, and TypeScript, ensuring a modern and responsive user interface.

- **Back-End**: The back-end will be powered by .NET Core 7, programmed in C#, and hosted on a server. This ensures data storage, retrieval, and secure authentication.

- **Development Tools**: Visual Studio Code and Visual Studio will be used for development and testing purposes.

Benefits:

The implementation of the Training Center Management System will offer several benefits, including:

- **Enhanced Operational Efficiency**: Streamlined administrative processes will lead to increased operational efficiency, reducing manual effort and minimizing errors.

- **Improved Decision-Making**: Access to comprehensive data and analytics will empower administrators to make informed decisions regarding course offerings, resource allocation, and trainer qualifications.

- **Better Supervision**: Clear assignment of supervisors for courses will ensure effective oversight and monitoring of training programs.

- **User Satisfaction**: A user-friendly interface will enhance the experience of trainers and trainees, making it easier for them to access and manage their training-related information.

In conclusion, the Training Center Management System is a tailored solution designed to transform the training center's operations, making them more efficient and data-driven. This comprehensive system will empower the center to fulfill its training objectives with precision and effectiveness.

Certainly, let's focus on how Angular was used in the project:

In the Training Center Management System project:

1. **Front-End Development**: Angular was employed as the primary front-end framework. Engineer Islam ElSaify leveraged Angular to build the user interface (UI) of the application.

2. **User Interface Components**: Angular's component-based architecture allowed for the creation of reusable and self-contained UI components. These components represented various parts of the application, such as forms, data tables, and navigation menus.

3. **Declarative Templating**: Angular's declarative templates, combined with HTML and TypeScript, were used to define the application's UI. This made it straightforward to create dynamic views by binding data directly to the DOM elements.

4. **Routing and Navigation**: Angular's built-in routing and navigation system were utilized to create a seamless user experience. This feature enabled users to move between different sections of the application without the need for full page reloads.

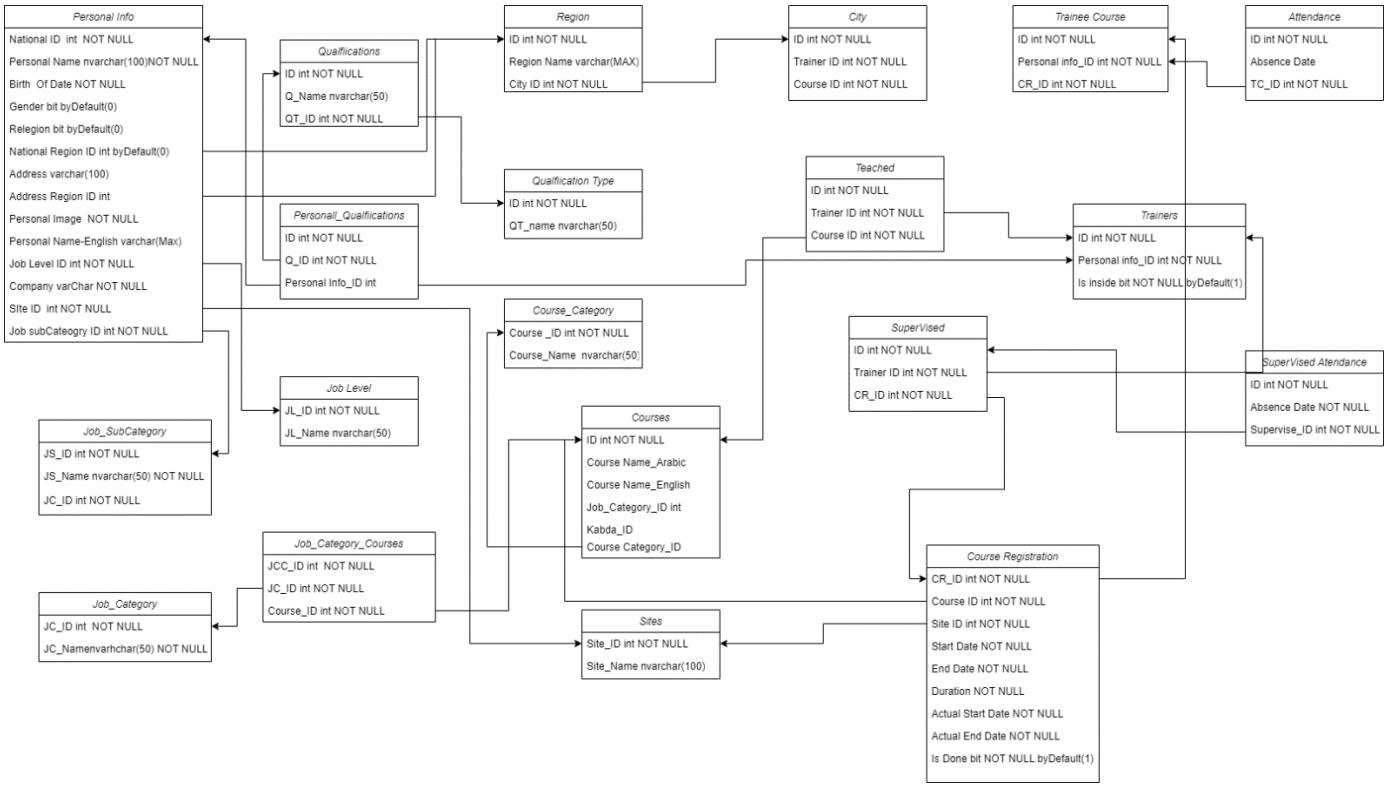
5. **Angular CLI**: The Angular Command Line Interface (CLI) was a valuable tool in the development process. It assisted in generating boilerplate code, managing dependencies, and automating various development tasks, simplifying the development workflow.

6. **TypeScript Integration**: Angular's use of TypeScript, a statically typed superset of JavaScript, provided benefits such as enhanced code quality and improved maintainability. TypeScript's strong typing helped catch errors early in the development process.

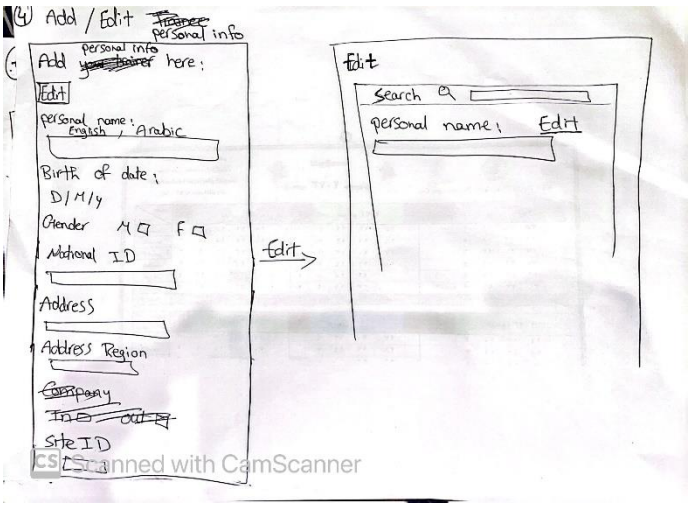
7. **Responsive Design**: Angular's features and best practices for creating responsive web applications were leveraged to ensure that the UI of the Training Center Management System was accessible and user-friendly on various devices and screen sizes.

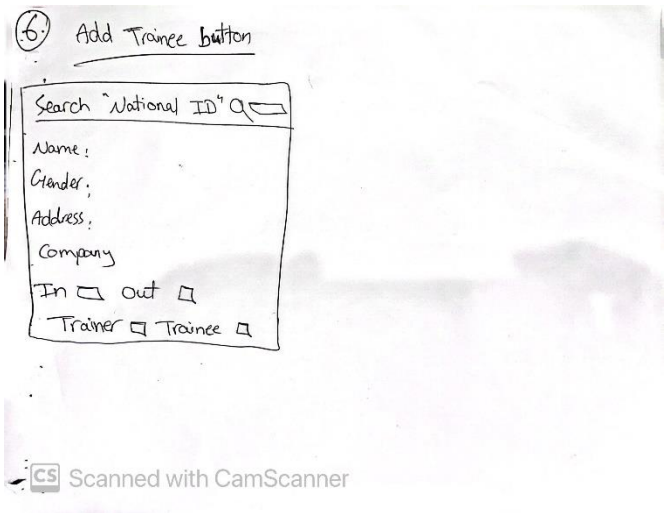
In summary, Angular played a crucial role in your project by serving as the foundation for the front-end development. It facilitated the creation of a dynamic and interactive user interface, allowing users to efficiently interact with and manage the training center's data and resources.

This is the **UML Diagram**



This Is Some High Level Designs, the others are with the company.





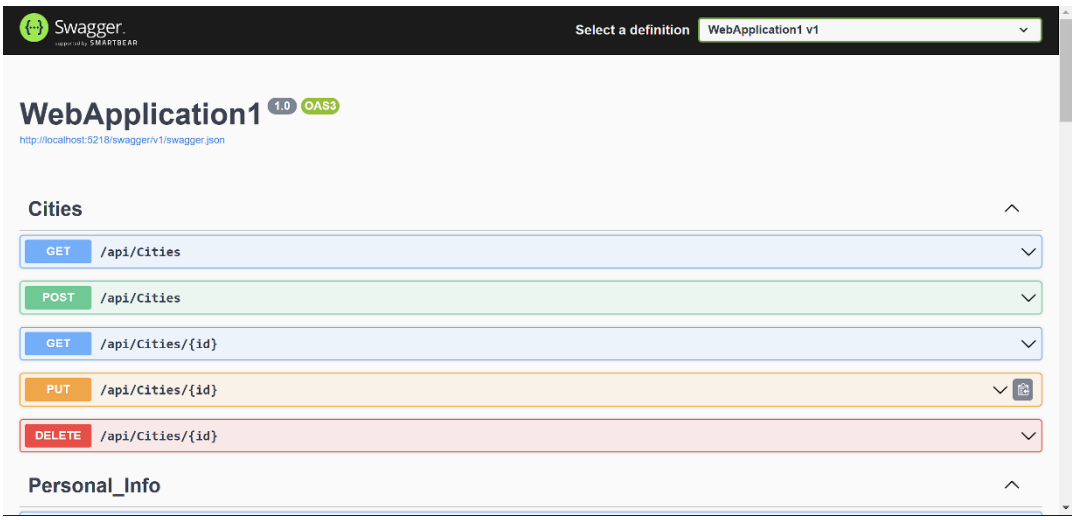
Conclusion:

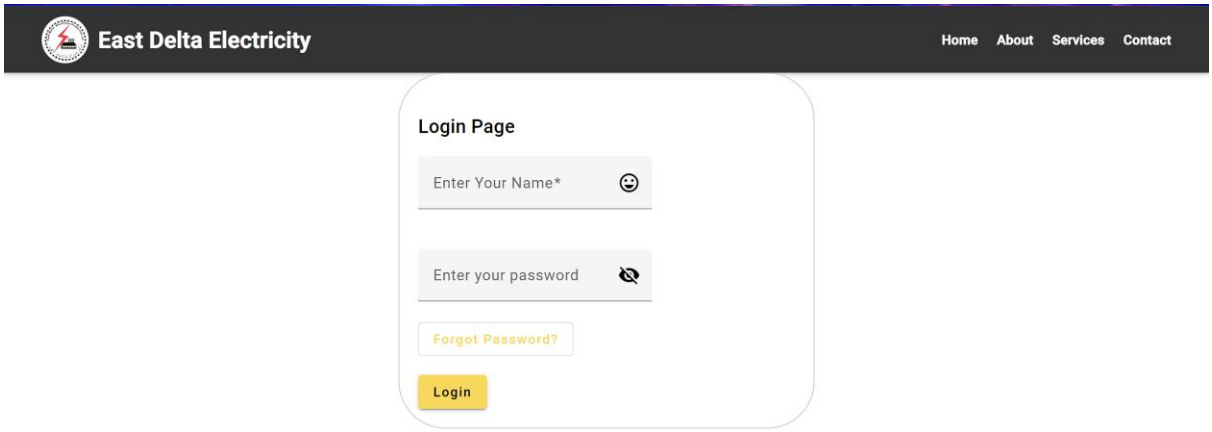
In conclusion, the Training Center Management System represents a step towards modernizing and optimizing the operations of the training center. This comprehensive web-based solution has been developed to address the challenges faced in managing training programs, trainers, and trainees efficiently.

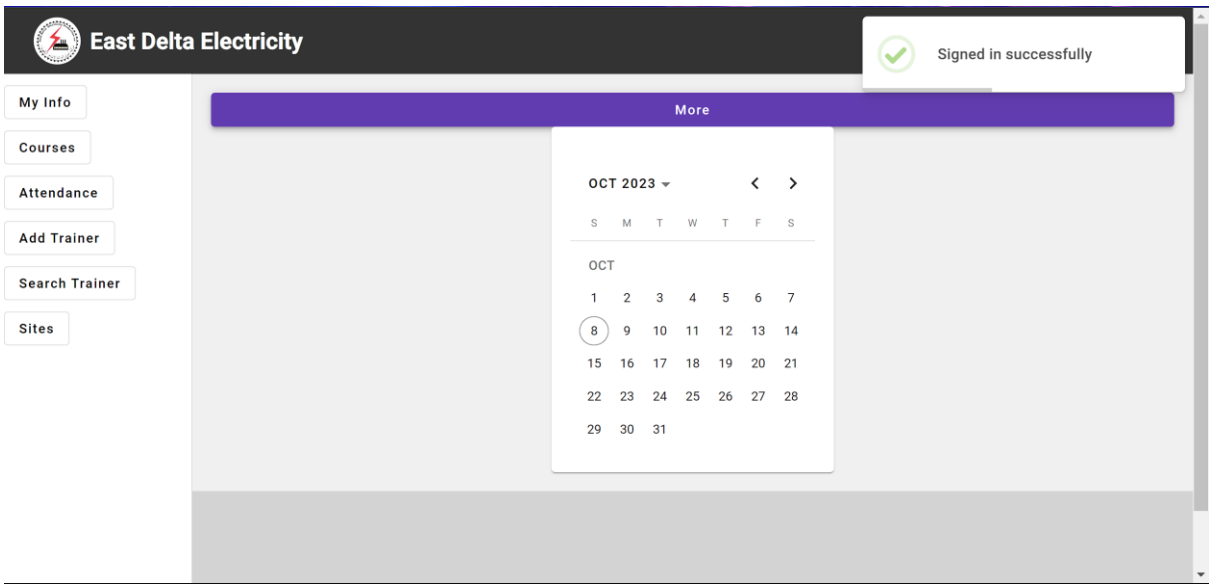
By centralizing data and automating administrative tasks, this system empowers the training center to operate with greater precision, responsiveness, and data-driven decision-making. Key features, such as role-based access control, attendance tracking, and resource allocation, ensure that our administrators, trainers, and trainees can access the right information at the right time.

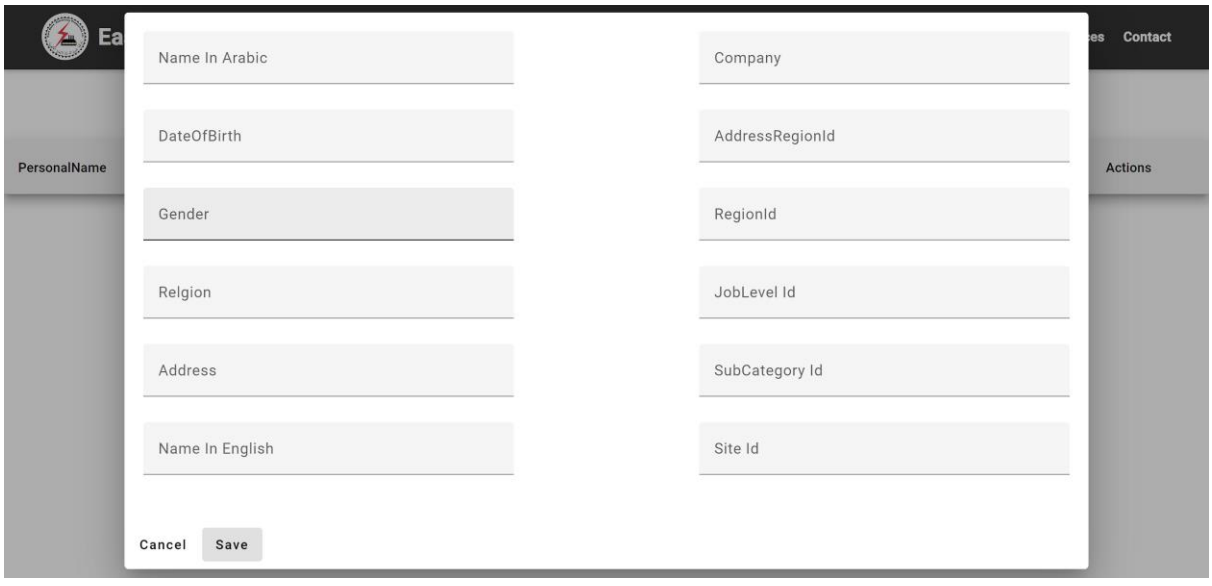
I owe my gratitude to the team members, particularly **Engineer Islam ElSaify and Engineer Mohamed Ibrahim**, who played pivotal roles in bringing this project to this level. Their collaboration and expertise have been instrumental in shaping this innovative solution.

Finally this are some screenshots from the Back-end and The Front-end




East Delta Electricity
Home
About
Services
Contact
Login Page
Enter Your Name*
Enter your password
Forgot Password?
Login


East Delta Electricity
Signed in successfully
My Info
Courses
Attendance
Add Trainer
Search Trainer
Sites
More
OCT 2023
S M T W T F S
OCT
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31


Contact
PersonalName
Actions
Name In Arabic
Company
DateOfBirth
AddressRegionId
Gender
RegionId
Relgion
JobLevel Id
Address
SubCategory Id
Name In English
Site Id
Cancel
Save