Bilkent University

Department of Computer Engineering

Campuswide Connection System

OnlyBilkent (team12 - 01)

Final Report

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Final Report

This report is submitted to the Department of Computer Engineering of Bilkent University in partial fulfillment of the Object-Oriented Programming Project course CS319 requirements.

Contents

1. Introduction

We have achieved our primary goals in this project, successfully establishing a user management framework. Exclusively designed for the Bilkent University ecosystem, OnlyBilkent stands as a unifying platform, seamlessly connecting students, club boards, and graduates. Its functionalities include facilitating transactions, aiding in item recovery, promoting item donation, and simplifying borrowing processes. This singular platform distinguishes itself by integrating these diverse functions, enhancing university life by fostering connectivity and accessibility, all dedicated to the enrichment of the Bilkent University experience. Our emphasis was on delivering a seamless user experience through the incorporation of essential features like user registration, login, and logout. Users can efficiently create an account, input required information, and securely access and exit the system. Moreover, users should verify their emails through their Bilkent emails and users can update their passwords with a randomly generated password that is sent to their emails.

Additionally, we have achieved another significant objective by implementing the post creation feature. Users can successfully create posts by specifying the post type and category. Also users can find the posts by navigating through the categories.

2. Lesson Learnt

Throughout the implementation phase, we encountered various challenges due to our limited familiarity with certain tools and technologies. Working with Java and the Spring Framework was within our comfort zone, but incorporating React.js and Mongo Database presented a learning curve. To address this, we divided our team into Frontend and Backend groups, allowing us to concentrate on specific project aspects.

The Frontend team focused on React.js, delving into its component-based structure, state and props management, and efficient UI rendering. Meanwhile, the Backend team immersed themselves in the Spring Framework and also utilized Mongo Database. Although we attempted to implement user authentication through the Web Security library, since we had errors while trying to implement it we gave up from Web Security.

Despite the steep learning curve, we successfully navigated these challenges by dedicating time to self-study through online resources. Connecting different components of the project proved challenging, yet this project became a valuable learning experience for all involved. Also , there were problems with the communication between backend and frontend. Our understanding of SpringBoot,

React.js, and MongoDB deepened, enhancing our skill sets and expanding our capabilities in development.

3. User’s Guide

Following figures and descriptions illustrate how to use OnlyBilkent.

3.1 Authentication

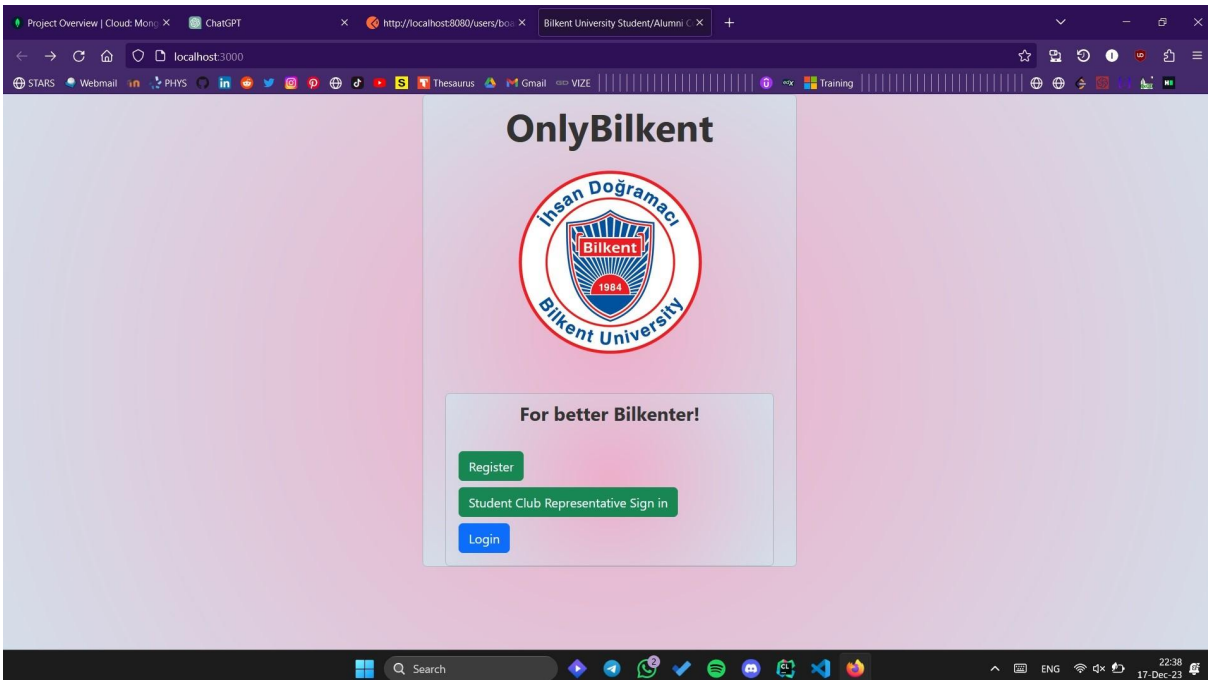

fig. 1 Navigate Screen

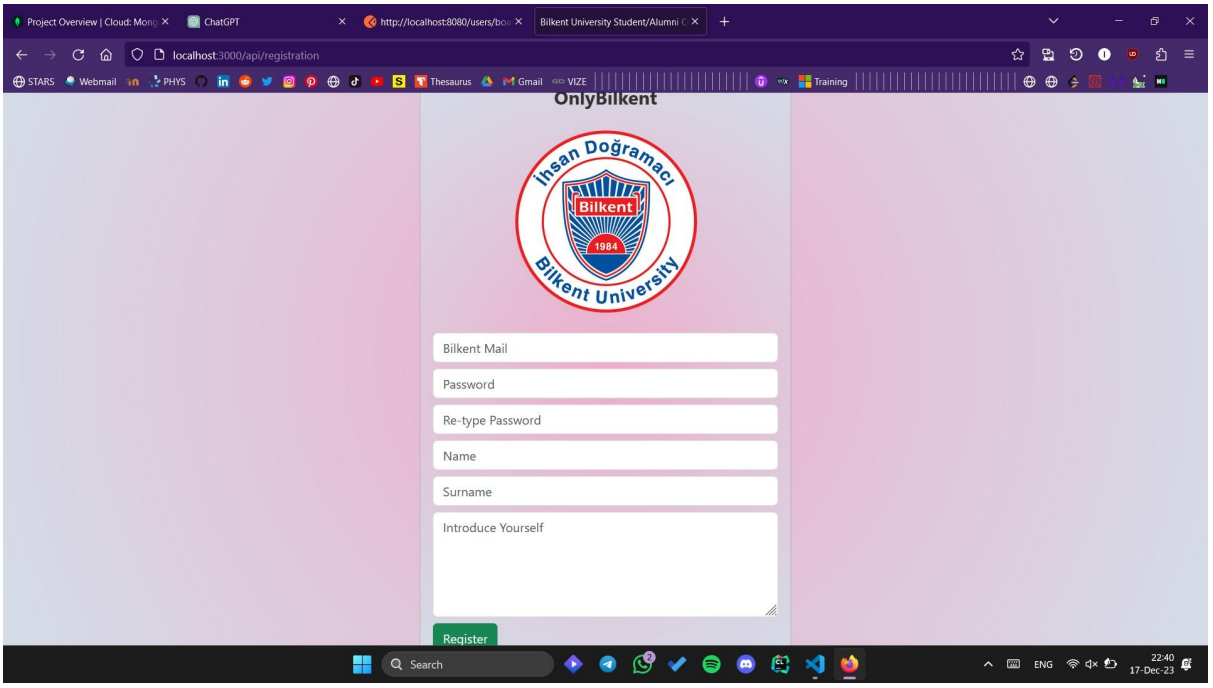

fig. 2 Register Screen

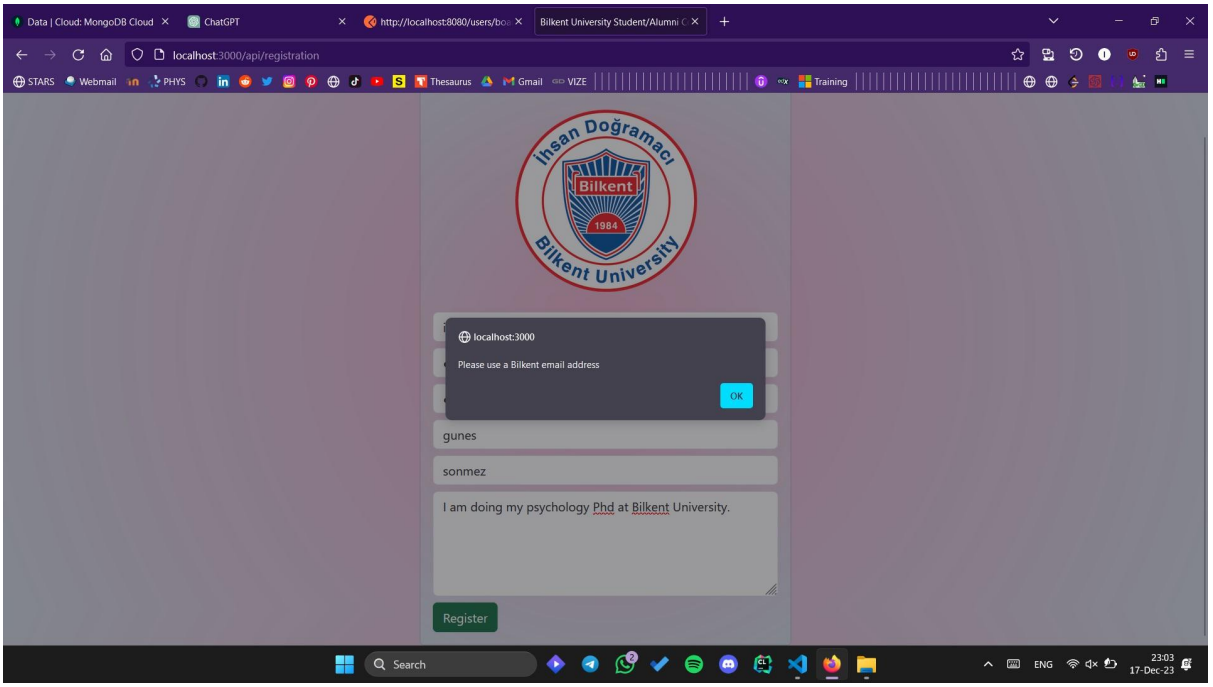

fig. 3 Register Screen

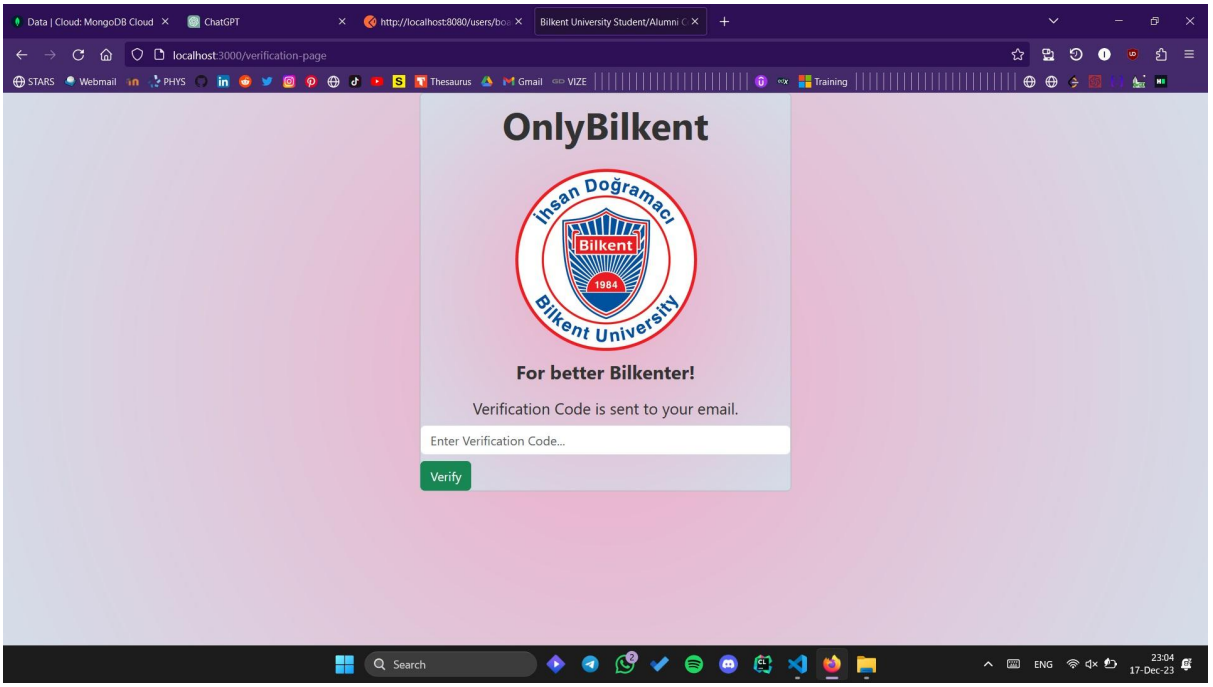

fig. 4 Email Verification Screen

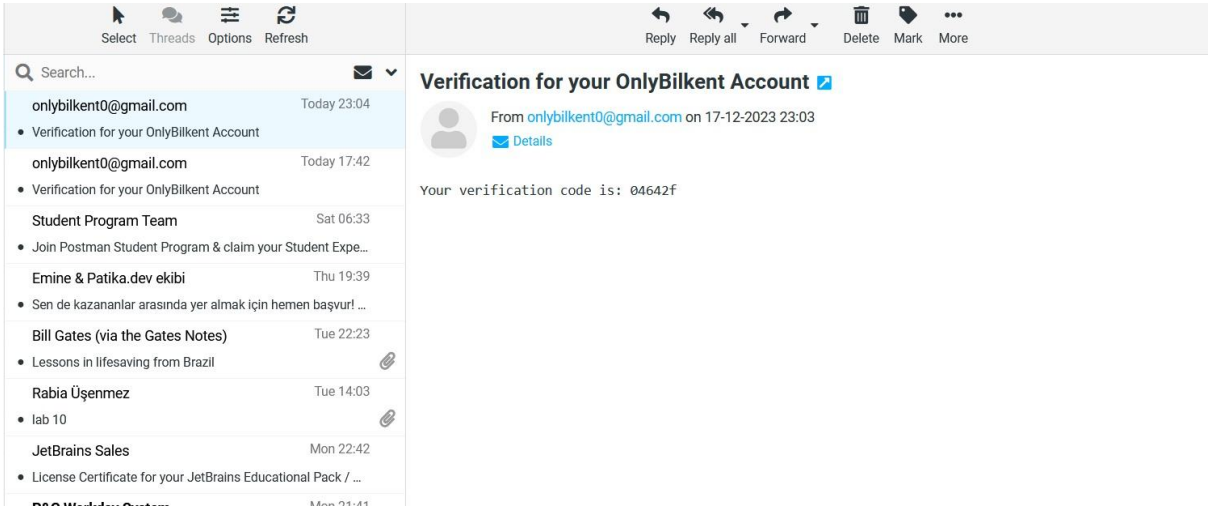

fig. 5 Webmail Bilkent

3.2 Login

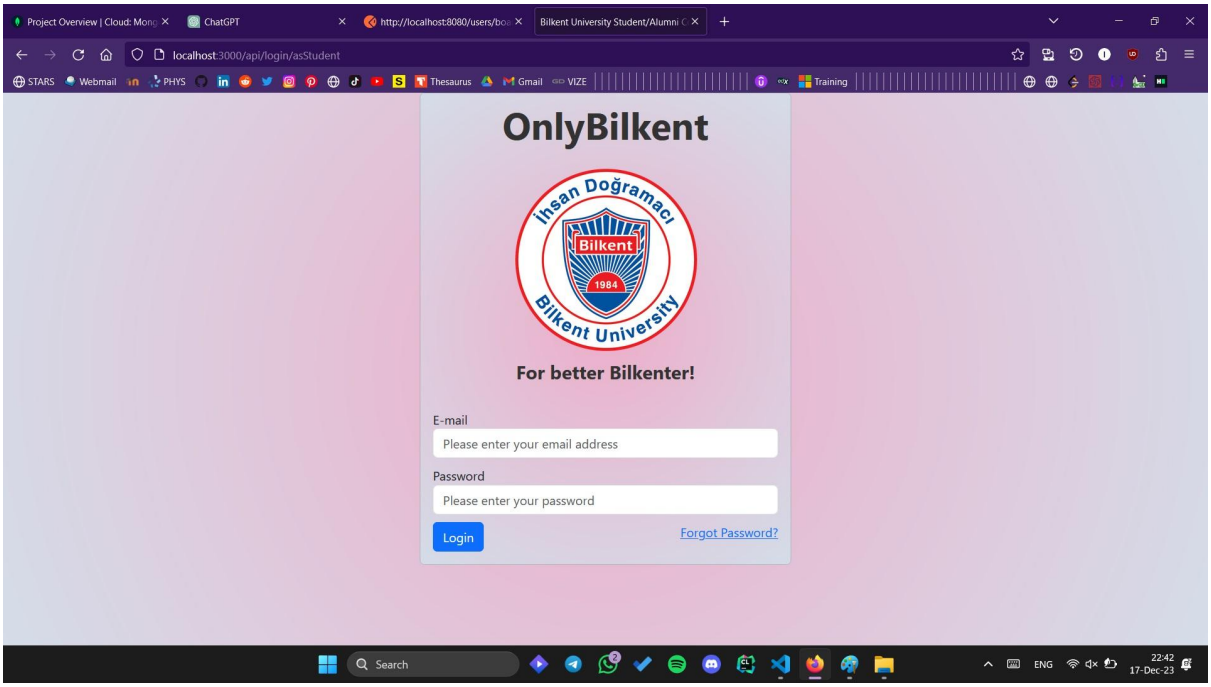

fig. 6 Log In Screen

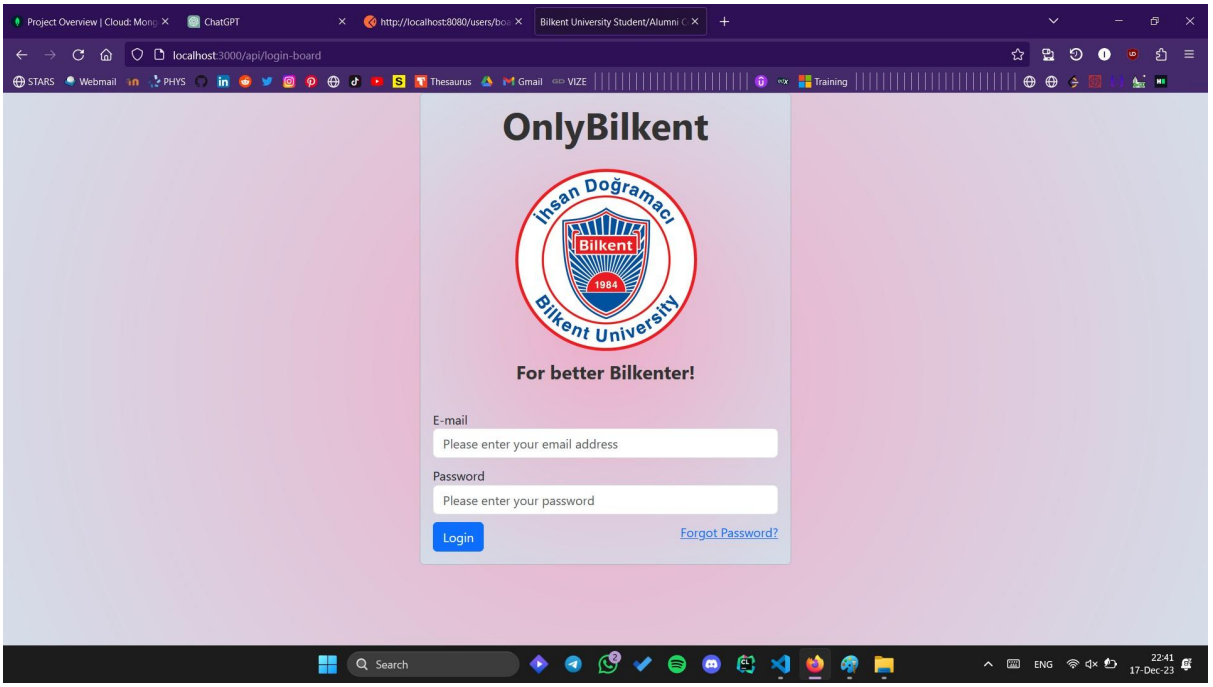

fig. 7 Auth Screen / Log In

3.3 Profile

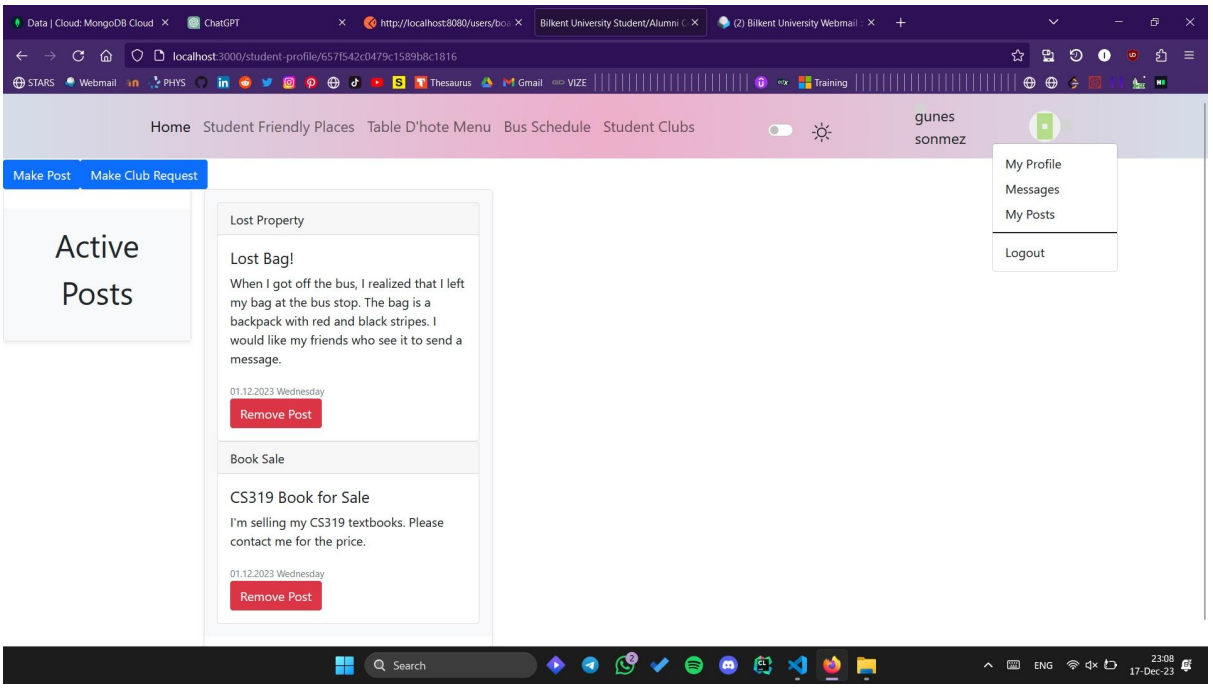

fig. 8 Profile Page

3.4 Make Post

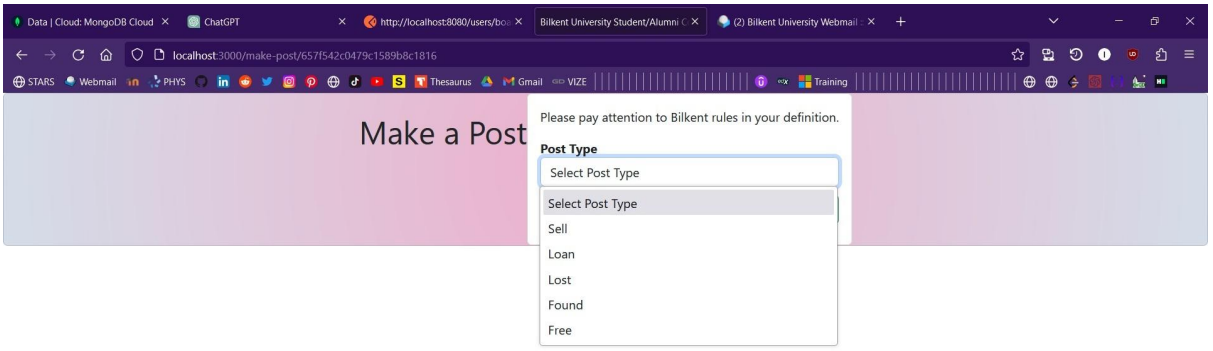

fig. 9 Make Post Page

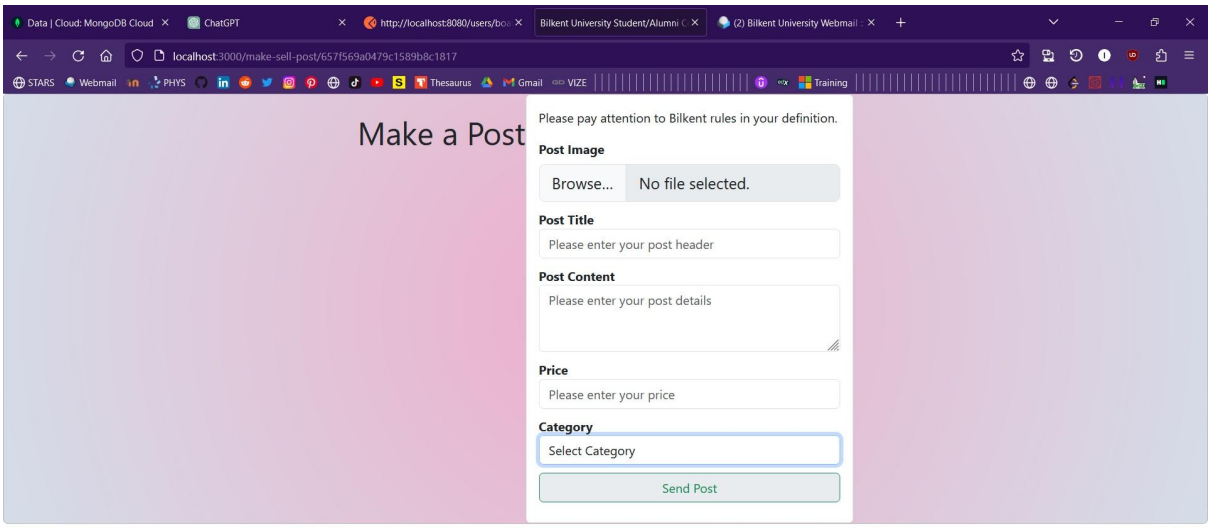

fig. 10 Make Post Page Continued

3.5 Dashboard

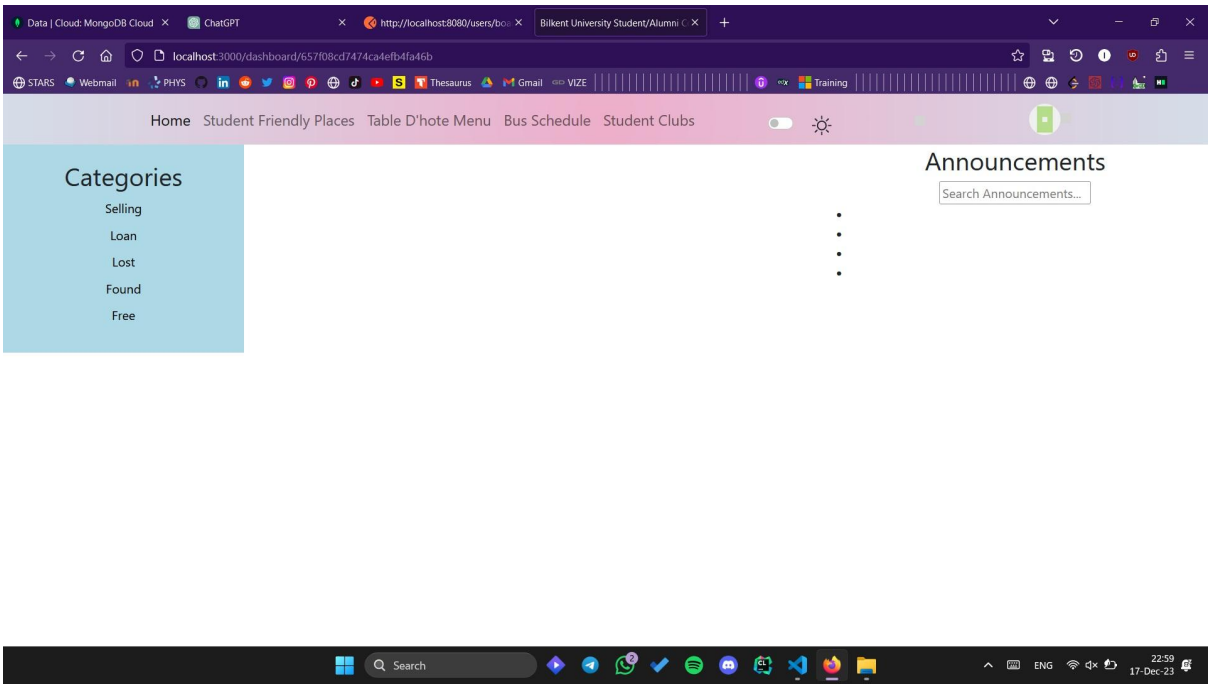

fig. 11 Dashboard Page

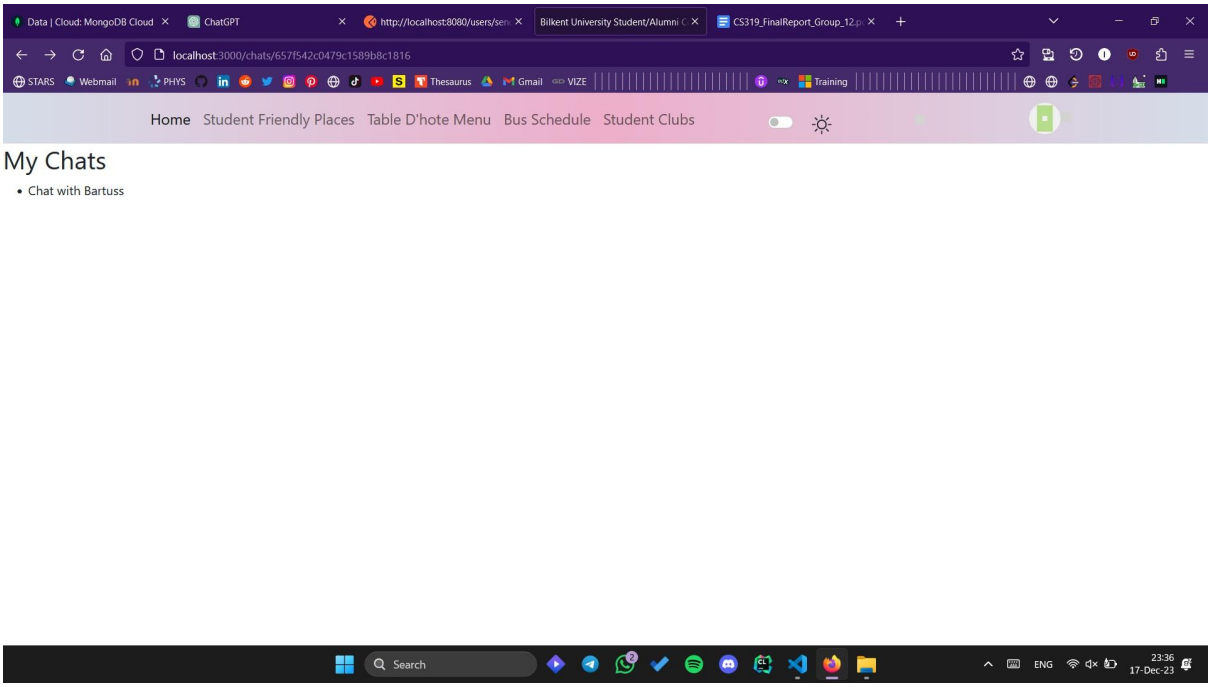

fig. 12 Chats Page

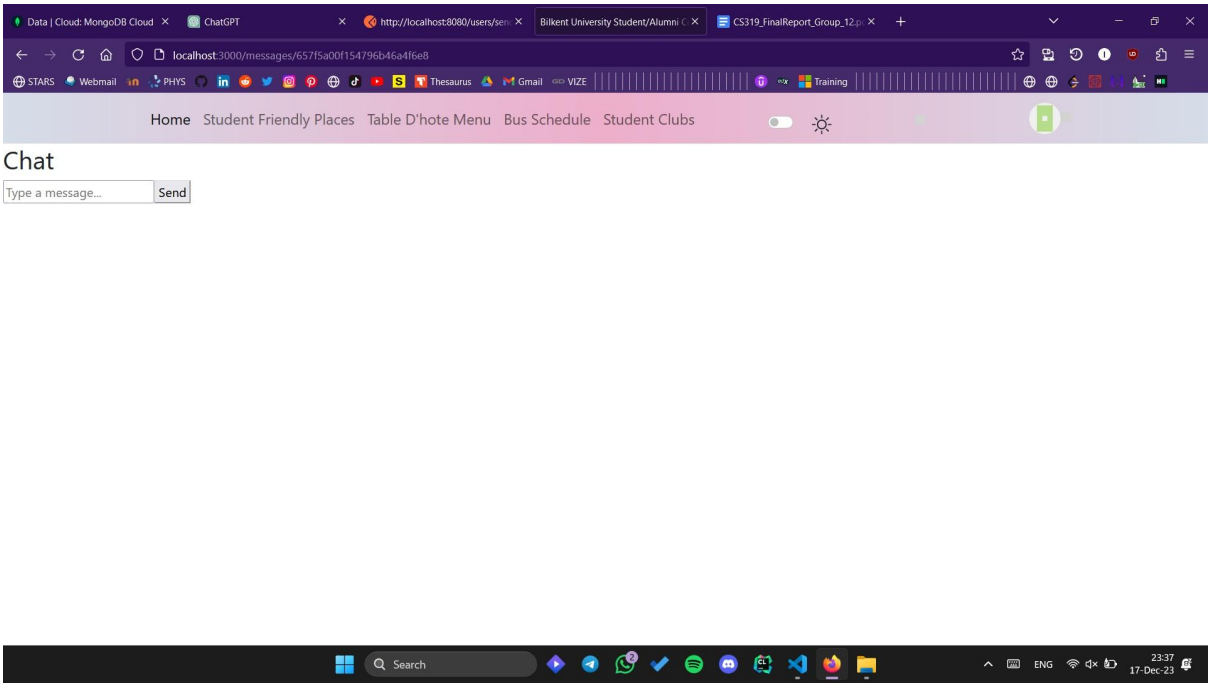

fig. 13 Specific Chat Page

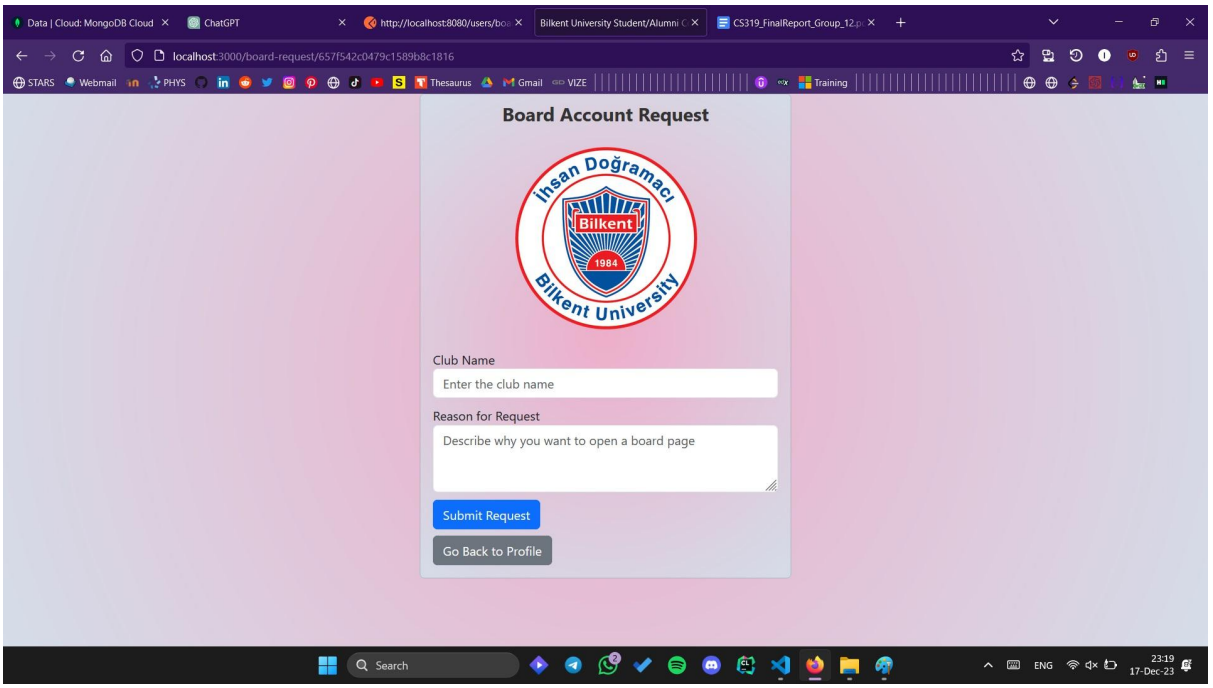

fig. 14 Board Account Page

4. Build Instructions

4.1 Build and Run

- First open yourself a mongoDB account on https://cloud.mongodb.com
- Then, there are many options to select as an IDE, but we used Visual Studio Code for our development. Therefore, you can prefer our choice. You can download it from here:
  https://code.visualstudio.com/download
- Open the source code from Visual Studio Code.
- Run “npm install” on the terminal to install npm. Then “run npm install react-scripts”. You can also check the version of npm by running the code below:
  -“npm --version”
- Run the source code.
- Open a new terminal and write “cd OnlyBilkent/fronted”, to modify the path.
- And run the code below:
  -”npm start”
- The code will run into “localhost:3000”. You are ready to go.

5. Work Allocations

Anıl Altuncu

Analysis Report:

Use Case Diagram, Use Case Textual Descriptions, Object & Class Model, Textual addition.

Design Report:

- Data Management Layers, Subsystem Decomposition, Web Server Layer, Deployment Diagram, Access Control Matrix, Low-level Design.

Implementation: Spring Framework, MongoDB, Connecting MongoDB to SpringBoot, Backend endpoint http requests, react axios endpoints, edit profile page, image storing, with JavaScript some pages.
Final Report: Lesson Learnt, Build Instructions, Own part of the Work Allocation

İpek Sönmez

Analysis Report:

- System Models: Non Functional Requirements, Use Case model, Object & Class Model, Used Tech

Design Report:

Design Goals

Implementation: Backend and Frontend Integration, Post Object, Chat Object, Login Package, backend function mapping, Application testing
Final Report: Screenshots of the application, Own part of the Work Allocation,

Zehra İyigün

Analysis Report:

- Sequence Diagram, State Diagram, Used Tech

Design Report:

- UI Layer, Design Patterns

Implementation: React, Backend and Frontend Integration, Application Pages in React
Final Report: Own part of the Work Allocation

Bartu Albayrak

Analysis Report:

- System Models: Use Case Diagram, Use Case Textual Descriptions, Object & Class Model

Design Report:

Design Goals

Implementation: Spring Framework, MongoDB, Connecting MongoDB to SpringBoot, JavaMailSender.
Final Report: Introduction , Lesson Learnt, Own part of the Work Allocation

Gizem Gökçe Işık:

Analysis Report:

- Use Case descriptions
- User Interfaces

Implementation: GUI implementation using HTML and Bootstrap, demo video editing

Final Report: Introduction, Own part of the Work Allocation

Link to the Video: https://youtu.be/RRF6amIvPiM