|  |  |  |  |
| --- | --- | --- | --- |
| **CS102** | **Spring 2023/24** | Project Group | 3I |
| Instructor: | **Uğur Güdükbay** |
| Assistant: | **Melih Coşğun** |

|  |  |  |
| --- | --- | --- |
| **Criteria** | **TA/Grader** | **Instructor** |
| Presentation |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| Overall |  |  |

University Sync

Prototype

**Arda Ege Erdoğan, Atilla Akkuş, Berkay Demirçin, Muhammad Musa Qureshi, Zaeem Masood Sheikh**

|  |
| --- |
| **Report Type**  **Requirements Report**  **5 April 2024** |

# Introduction

Universities are the places where students study and explore life for 4 or more years. Besides the lectures, universities offer a variety of social activities, cafeterias, sports activities, and dormitories to accommodate students’ needs and demands. With a complex and diverse university campus, it might be overwhelming for students to navigate buildings, find suitable activities to attend, and fitting dorms.

Our project, which is a desktop app aims to improve the overall campus experience by solving the above problems. University students will be able to sign up and log in to the app using their school email. Student will be able to add specifications to their profile, such as major, year, interests, and write a bio. The dormitory feature will allow students to transfer dorms with mutual agreement rather than random room assignments, which will decrease the occurrence of problems. Cafeterias, restaurants, and dorms will be included with information and reviews, which will assist students in their university life. Being able to find sports activities, study groups, and comments on university facilities are other options for a user in the app. Public forum posts and user to user text chat will also be implemented in the project.

# Details

## User Profile

In accordance with the social aim of our application, each student will have their own profile page where they can upload a profile picture, write an about me, display their major etc. The personal information in the profile will be editable via an “edit profile” section. This profile will also house the posts made by the user. The user will also be able to see profiles of their friends and other users. The aim of this feature is to give students a place they can personalize within the application and express themselves better, it also makes one-on-one connections easier.

## Food/Cafeteria Finding Feature

The program will include a “Food” tab where users can view the cafeterias in the university along with information about their pricing, reviews, photos, menus. Students will be able to leave reviews on cafeterias, and these reviews will also include price information (i.e. the student will enter how much they’ve spent; however, they can opt to leave this space empty). Cafeterias can be sorted according to various parameters including price range or average point of ratings given in reviews.

## Dormitory Finding Feature

In the “Dormitory” tab, the users will be able to view information about specific dormitories they’re interested in, such as past ratings of the dorm and comments from students who’ve stayed there. The user can also leave their own review about a dormitory. In addition, students will have the option to transfer their dorms by placing a post, and if a suitable transfer is found their dorm info will be swapped (this requires both parties to accept). Students seeking to transfer to another dorm will be able to sort and filter the posts with certain criteria, such as the room type and dorm rating.

## Social Features

Through the app, users will have the ability to notify students when they host events such as parties, club events, and sports events. Other users will be able to view the upcoming events on the home page (or see with more detail on the “Social” page) of the application and the app will send a desktop notification to the user some time before the event starts if they choose to follow an event. Events will be sorted based on how close they are to start. The aim of this feature is to have a central and organized place for all university events, thus making them more accessible to users by being easy to follow. The user can see all events and create one through the “Social” tab of the application.

Users will be able to add each other as friends which will allow them to stay connected and expand their network. Users can search for other users using the search bar and send a friend request through their profile. The user pair become friends right after the other user accepts the friend request. One to one text message with other users will also be implemented.

## Forum/Message Board

To help navigate the complex university life, users will be able to ask whatever questions they may have, under a “Forum” tab where users will be able to create posts and attach relevant files. Moreover, users will be able to add tags to their posts such as study, sport, lost and found, discussion etc. and other users can then use these tags to filter these posts according to their needs. Posts will be likable, commentable; a text message and a friendship request can be sent to the owner of the post, each having different buttons for each post. In addition, users will be able to delete and edit their own posts.

## Expandability and Maintainability

All the data used in the app will be maintained through MySQL databases. In fact, MySQL provides a workbench that will serve as an admin panel for our project. This way, we will avoid hardcoding and the data will be entered in a safe, structured way with a user-friendly ready-to-use admin UI. Using these facilities, the admin will be able to manage, i.e., add/remove/edit dormitories, cafeterias, their working hours, posts according to the needs. If, for example, there is a new cafeteria opened, admin can easily add this in a safe and structured way to the database which stores cafeterias’ information. Because of the type of safety, it is ensured that the information in the database is appropriate, and the updates will not break the functioning of the program. All these factors ensure that our program stays expandable.

A mechanism that will keep the app updated will be the ‘contact us’ feature that enables users to suggest changes or voice any complaints. This will let admin know about any required updates, while still preserving the central authority to make app-wide changes.

## Problems This App Aims to Solve (Justification for Implementation)

The organized structure of the app aims to allow students to manage various activities and navigate them around the university campus. It solves several problems by making it easier for students to do tasks related to dormitories, cafeterias, and other on-campus facilities.

The app will allow students to know better about their dormitory while choosing it and allows communication between students that want to change their dorms, thus avoiding chaos when they’re looking to transfer to a different dormitory.

Organizations, clubs, and individual students will be able to announce activities and individuals will be able to easily find activities. This prevents large amount of diverse out-of-lecture events being complex to follow.

The app will include a message board where one can ask and learn about campus facilities, this provides users a place to get information and inform others in a simple and compact way. The feature will especially take part in removing the ambiguities newcomers have.

## Similar Apps and Differences

Facebook [1] is a widely used social website where users can connect with each other, form groups and message each other. However, it falls short of delivering on the specialized needs of university students. Firstly, it lacks a robust mechanism that would aid students in the dormitory- finding process. Secondly, it cannot verify that a user is a student at a university, resulting in a lack of trust in guidance, dorm transferring, etc. situations. Thirdly, it is not as centralized as our app aims to be.

RU (Radford University) Mobile Application [2] is an app that allows students to connect with their fellow students and keep track of events and classes. The biggest pitfall of this application is that it is specific to Radford University, while our application aims to be expandable to any university. Similar to Facebook, it also lacks a dormitory feature such as the one our application will provide.

Campus App by Ready Education [3] is another similar app that houses many features related to a university. While this application houses many common features as our app, its lack of accessibility (this app is not open to the public), and its focus on providing data for the admin results in some sacrifices to the user experience. It is not as flexible as our app aims to be (in that our app will be able to add/remove/update buildings on the go), and it might be too complex for students to navigate through. Again, it also lacks a feature assisting students about dormitories.

* 1. **Dependencies for Our App**

Our app will require a robust database for its implementation. We are going to use MySQL (and its associated workbench to allow the admin to interact with the database) to implement our database. In addition, for our UI implementation we will use JavaFX due to its modern feature set. We have not decided on any other libraries that’d be helpful in our project at the moment (apart from inbuilt libraries that come with Java).

# Summary & Conclusions

Our app aims to solve problems that college students commonly face. We provide campus-wide solutions for dorm arrangements, social communication, and guidance on nearby places. We employ a student-based strategy and provide them the helpful means through which they will find a more convenient university experience. We plan to come up with an expandable and maintainable design with adherence to the best practices as much as possible. This way, we will address a crucial real-world problem by using collaborative tools such as Git and practicing real world skills such as database management.

# References

1. Meta. (n.d.). *Facebook*. Retrieved from https://www.facebook.com/ Last visited: 06.03.2024

2. Rudford University. (n.d.). *RU Mobile App*. Retrieved from https://www.radford.edu/content/it/home/ru-mobile.html Last visited: 06.03.2024

3. Ready Education. (n.d.). *Campus App*. Retrieved from https://www.readyeducation.com/product/campus-app Last visited: 06.03.2024