COMP3011J Mobile Computing 2023-2024

Beijing-Dublin International College

Project Outline

StudySpace

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1 Introduction

StudySpace is an innovative mobile application designed to enhance the learning experience for students and learners of all ages. Our application empowers users to make the most of their study time by offering features such as locating available study rooms, tracking study durations, and providing visual analytics. StudySpace's primary goal is to motivate users to optimize their study habits, fostering a more productive and efficient learning environment.

2 Project Description

2.1 Background and Investigation

Through a comprehensive investigation conducted at Beijing University of Technology, we discovered a common challenge faced by many students - the difficulty of finding available and suitable study spaces on campus. This issue often results in wasted time, decreased study efficiency, and increased stress, preventing students from concentrating effectively in conducive learning environments.

Our investigation revealed that students currently have access to information about vacant classrooms by logging into the university's academic affairs system website via the campus intranet, as depicted in Figure 1. However, this system is exclusively accessible through personal computers within the campus network environment, which severely limits its convenience and accessibility. There is, therefore, an urgent need for a convenient and efficient solution to address this challenge and assist students in optimizing their study experiences.
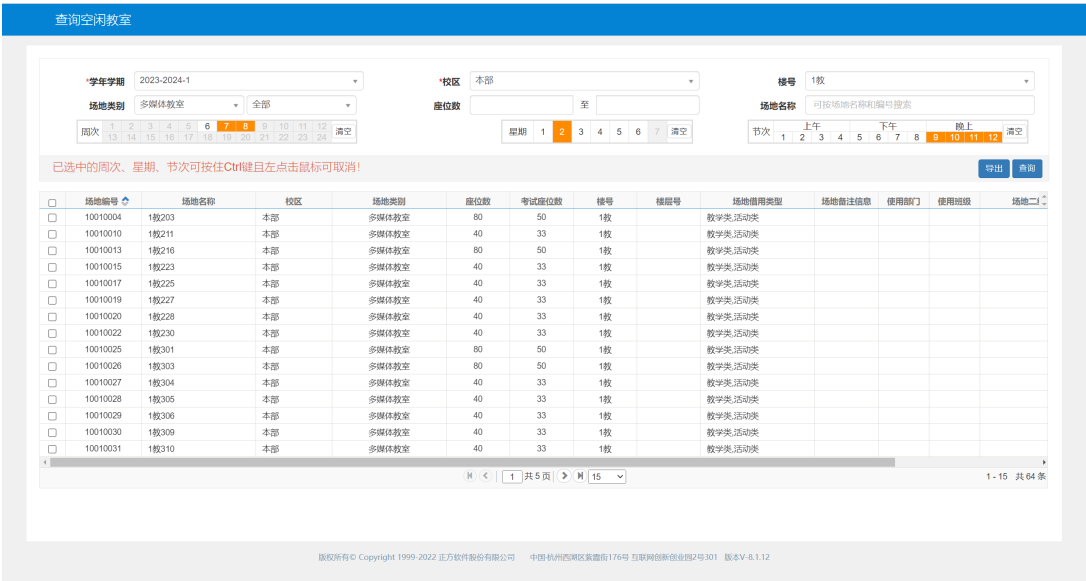

Figure 1: Example: Querying Vacant Classrooms in Beijing University of Technology's Academic System

Recognizing the need for a solution to address this issue and enhance the overall learning experience, we embarked on the development of the StudySpace mobile application. The goal of StudySpace is to provide students with an efficient and user-friendly tool to help them locate, reserve, and maximize the use of study rooms. Ultimately, this application aims to empower students to overcome the obstacles encountered during their university studies, promoting a more effective and enjoyable learning experience.

2.2 Application Capabilities and Functionality

StudySpace boasts a robust set of capabilities and functionalities designed to elevate the study experience and promote effective learning. Figure 2 illustrates the primary functionalities designed within the StudySpace application.
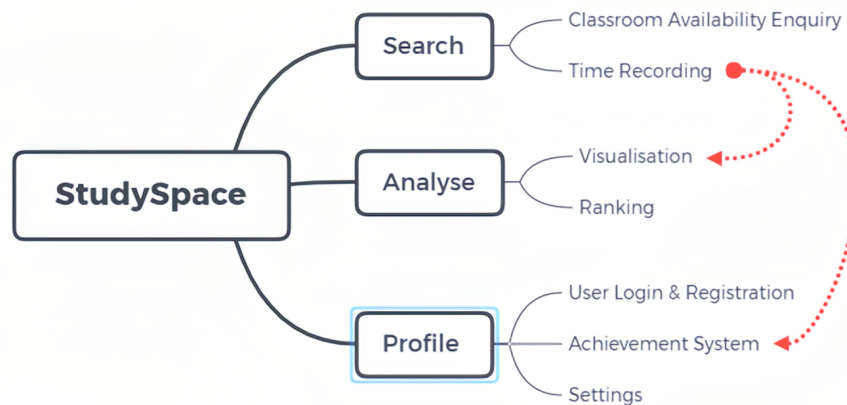

Figure 2: StudySpace - Application Capabilities and Functionality Overview

- **User Login & Registration:** StudySpace provides a secure and user-friendly system for account creation, enabling users to seamlessly register, log in, reset passwords, and delete their accounts.
- **Classroom Availability Enquiry:** The app offers a comprehensive search feature, allowing users to effortlessly locate available study rooms based on their preferred time slots, ensuring a stress-free study environment.
- **Time Recording:** Within study rooms, StudySpace offers a straightforward interface to initiate and terminate study. The app automatically records study durations, offering users a precise measure of their study time.
- **Learning Analytics:** StudySpace automatically generates insightful analyses based on each study session's recorded duration. These analytics encompass data such as frequency, study time, ranking, and more, presented in a visually intuitive format. These analyses serve as invaluable tools for self-assessment and goal setting, providing users with data-driven insights into their study habits and performance.
- **Friendship and Social Features:** StudySpace promotes social interaction through users connecting with friends on the platform. Users can compare study hours, build a sense of community, and access leaderboards to see how their study efforts compare to their peers.
- **Achievement System:** The application features a dynamic badge system that celebrates users' milestones in their learning journeys. These achievements are prominently displayed on the "Medal Wall," fostering a sense of accomplishment and motivation to continually strive for excellence.

3   Project Plan

- **Week 7:** Project Preparation and Planning
  - * Define the project's objectives and scope.
  - * Create a project plan and schedule, including milestones and key tasks.
  - * Gather necessary resources, including development tools, image assets, and open-source libraries.

- **Week 8:** User Interface Design
    * Design the application's user interface.
    * Create layouts and interface prototypes.
    * Review and refine the design to ensure user-friendliness.
- **Week 9:** Developing Basic Features and Database
    * Begin coding the application, including registration and login functionality.
    * Implement the database for storing user information and study room data.
    * Begin working on the room availability search feature.
- **Week 10:** Implementing Query Functionality and Recording Study Time
    * Implement the function of inquiring the available classroom.
    * Implement the time recording feature for study sessions.
    * Carry out regular testing and debugging.
- **Week 11:** Realizing Time Analysis with Visualization
    * Create data visualization components for learning analytics.
    * Conduct unit testing and integration testing.
- **Week 12:** Integrating Friend Features and Personal Medal Wall
    * Develop features for displaying achievements and badges.
    * Develop for social features like friend connections and leaderboards.
    * Conduct unit testing and integration testing.
- **Week 13:** Polish Interface Design and Animation Rendering
    * Update the user interface for improved user experience, considering user feedback.
    * Refactor complex code blocks and methods to enhance readability and maintainability.
    * Integrate a rendering engine or library to support the generation of animated effects.
- **Week 14:** Final Testing and Release
    * Conduct final testing, including user interface testing and feature testing.
    * Address and resolve any remaining issues and bugs.
- **Week 15:** Refine slide and code and prepare for the final interview.