

# NotiSKKU

## A Notification Application for Targeted Major and Topic Information

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Capstone Design Project

**Abstract.** This paper presents notiSKKU, a notification application designed to provide targeted major and topic information to university students. The motivation for developing notiSKKU arose from the common problem faced by double-majoring students and newcomers in the university regarding the difficulty in finding relevant information. The application is developed based on the results of surveys conducted among the target users. The proposed system utilizes notification alerts to inform users about the latest updates, news, and events related to their specific majors and topics of interest. The system aims to enhance the students' academic performance and provide them with a more personalized university experience.

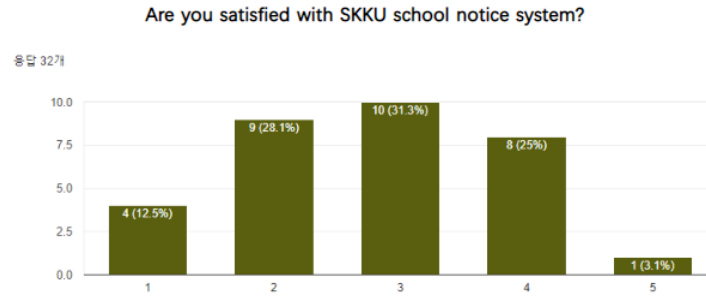
**Keywords:** Notice · Provide information · Information integration

## 1 Introduction

Finding reliable information about graduation requirements, especially for double-majoring students, can be a challenging and time-consuming task. This is a common problem that many students face, and our team has proposed a solution to address it. In this paper, we will discuss the importance of this problem, previous approaches that have been taken, and our proposed solution.

The process of finding information about graduation requirements is not easy, as it often involves searching through various websites and applications, which can be overwhelming and confusing. Our team members have experienced this problem firsthand and have had difficulty finding the information they need. Therefore, we have decided to explore a solution that will help students find reliable information quickly and easily.

Previous approaches to this problem have been limited, and many students continue to struggle with finding the information they need. We conducted a survey of students who have experienced this problem, and the results indicated that many students are dissatisfied with the current notice system from their school. They also expressed the need for a more integrated system that would bring together information from various sources as seen in the Figure 1.



**Fig. 1.** Survey Result

In response to this problem, our team has proposed a solution that involves developing a notifying program that will notify students about relevant information regarding graduation requirements. The program will integrate information from various sources, including official school notices and student forums, and will be accessible through a single platform. Our goal is to provide a reliable and user-friendly solution that will help students find the information they need quickly and easily.

## 2 Motivation & Objective

In summary, our proposed solution addresses a common problem that many students face and aims to provide a reliable and user-friendly solution. By developing a notifying program that integrates information from various sources, we hope to make the process of finding information more accessible and less stressful for students.

## 3 Background & Related work

### 3.1 Related Work

There are various resources available for obtaining information about school announcements.

#### 1. Kingo-M Application

*Kingo-M* is a mobile application designed to provide students with comprehensive information about school life and the Figure2 shows one of the image of Kingo-M. It offers a variety of features such as shuttle bus schedules, academic calendars, library information, and study room reservations. In addition, Kingo-M also has digital student ID and unified message box functions, allowing users to receive school announcements and keep track of important events. However, despite its many useful functions, Kingo-M



**Fig. 2.** Kingo-M Application screenshot

has some limitations. One of its biggest drawbacks is the lack of an active information portal, which means users cannot actively seek out information they need. Additionally, the app's search function is somewhat limited, making it difficult for users to find specific information. Lastly, there are some commercial messages included in the app, which may be annoying for some users.

## 2. Everytime

*Everytime* is a popular mobile app that offers convenient academic management features, such as class scheduling, to-do lists, and access to useful information like campus dining options as seen in Figure3. In addition, the app features an anonymous community platform where students can communicate with each other and share information. This platform includes an anonymous system that ensures the safety of its users during online conversations. Furthermore, the app allows students to create and operate their own bulletin boards for various topics of discussion. However, because the information on *Everytime* is user-generated, the immediacy and reliability of the information can be lacking. Nevertheless, the platform has become an essential tool for many students, providing a space for them to communicate and support one another during their academic journey.

## 3.2 Previous project

In a past capstone project, there was an effort to provide a better service for delivering school information.

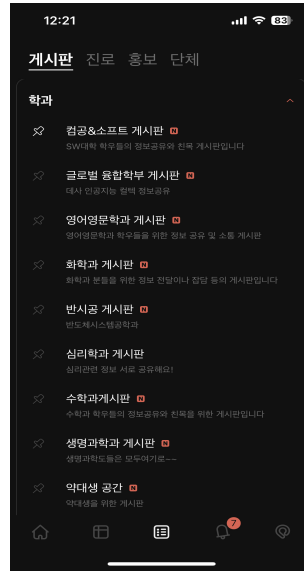


Fig. 3. Everytime Application screenshot

#### 1. SKKULAR

*SKKULAR* aims to provide a service that overcomes the difficulty for students in applying for scholarship recruitments and obtaining information about scholarships that benefit them. The project focuses on the basic problem of students finding it hard to check scholarship announcements every day, and therefore, is designed to enable them to select only the scholarship notices that they can apply for. The project is built around features such as customized scholarship searches, personalized scholarship alerts, similar keyword scholarship information, and application deadline reminders, in order to provide customers with relevant information. The objective is to make it easier for students to apply for scholarships and receive timely updates on scholarship information that meets their needs.

#### 2. MyCampus

*MyCampus* is a service created to address the problems of the existing iCampus system. While iCampus focuses on attendance management, it has limitations in bringing in items related to assignments and evaluations. Additionally, it can be inconvenient to check various boards for notices, assignments, class materials, etc. as they may be uploaded to different locations. Therefore, *MyCampus* aims to provide a service that helps users easily understand deadlines for scheduled lectures and assignments, and provides information about the remaining submission period and submission date. This way, users can quickly and easily check the necessary information and manage their tasks in a more convenient way.

### 3. Kingo Manager

*Kingo Manager* is an AI manager that comprehensively manages and recommends career activities such as graduation requirement status, job information, internal/external activities, and recommended activities by grade. Considering that students have difficulty obtaining the information required for employment, Kingo Manager provides a service that recommends subjects, clubs, academic conferences, etc. Additionally, the service provides information on job openings and competitions that students may not have known about, relieving them of the trouble of searching for employment information on a company's website.

## 4 Problem Statement & Proposed Solution

### 4.1 Problem Statement

The current structure of notification services or services that can be helpful to students during their academic lives rely on the effort of students themselves. Currently, important notices are delivered to students via online bulletin boards. However, one of the main issues with these bulletin boards is that it is difficult for students to grasp an overview of all notices. Instead, they must individually search for the necessary information, which takes a considerable amount of time. Moreover, bulletin boards often contain advertisements or unimportant content, making it difficult for students to quickly identify the information they need. Additionally, many students miss important notices, either because they were unable to see them in time or simply overlooked them. These issues can negatively affect students' academic achievements and career paths, which emphasizes the importance of schools establishing services or systems to address these problems.

### 4.2 Proposed Solution

To solve these problems, the solutions that can be proposed are as follows.

#### 1. Notification service

Sending immediate notifications when a notice is posted is that students can receive necessary information quickly and can avoid missing time-sensitive information. This is particularly important in educational settings where students are expected to stay up-to-date with various events and deadlines. By receiving timely notifications, students can be more prepared and organized, leading to better academic performance and success.

#### 2. Combine platform

A platform that provides comprehensive access to all school announcements and information would be of great benefit to students in their academic lives. By having a centralized location to find all necessary information, students can save time and effort, allowing them to focus more on their studies.

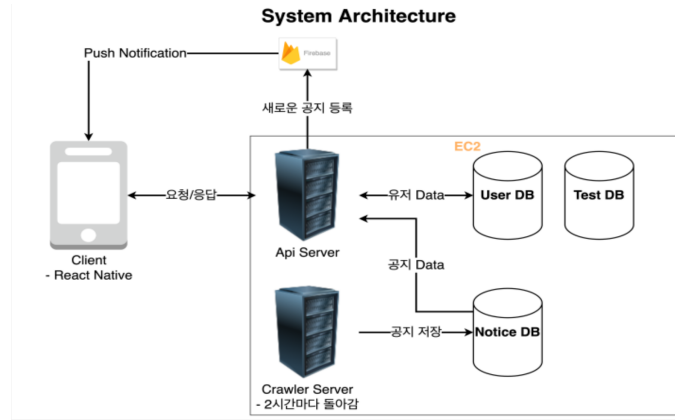
### 3. Categorizing topics

Categorizing topics for school announcements can provide several benefits. It allows students to quickly find and access the information they need. Instead of having to sift through a long list of announcements, students can simply navigate to the appropriate category and view the announcements related to their interests or needs. Categorizing topics can help reduce information overload. When all announcements are mixed together, it can be overwhelming and difficult for students to prioritize which information is most important. By categorizing topics, students can focus on the announcements that are most relevant to them, and not be distracted by less important information.

### 4. Mobile application

Mobile access to the platform offers several benefits. First, students can stay up to date with important information and notifications, even when they are not physically present on campus. This means they will not miss any crucial information related to their studies or school activities. Second, students can quickly and easily find the information they need, reducing the time and effort required to search for information.

## 4.3 System Architecture



**Fig. 4.** Kingo-M Application screenshot

Figure 4 shows the total system of our application. The client selects the category of the announcement to receive, and the server saves the announcement data by crawling the school's official website. Then, the API server receives the data from the server, registers the announcement, and sends notifications to users who have subscribed to that category. The client-server architecture allows for the efficient and organized delivery of information to the users. By selecting specific categories, users can filter out irrelevant announcements and only receive2.3

notifications for important information. The server's crawling function ensures that the system is always up-to-date with the latest announcements from the school. The API server plays a critical role in registering the announcements and notifying users, ensuring that the system operates smoothly and efficiently.

## 5 Planning in Detail

### 5.1 Role Distribution

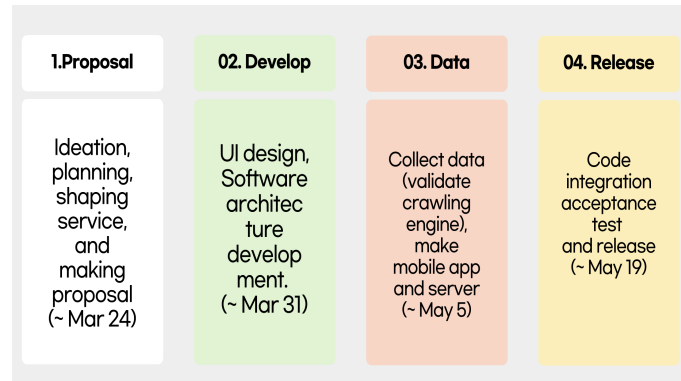
1. **Dongheon** will be responsible for developing the BackEnd-Server and Craeling. This involves designing and implementing the server architecture, creating a web scraping engine to collect data from external websites, and building an API that the FrontEnd can use to retrieve data from the server.
2. **Soocheol** will be in charge of developing the BackEnd-Login and Notification systems. This includes designing and implementing secure login functionality for users, creating a notification system that sends push notifications to users' devices, and integrating these systems with the BackEnd-Server.
3. **Taewon** will be responsible for developing the BackEnd-DB and Mailing service. This involves designing and implementing the database schema, building queries to efficiently retrieve and store data, and creating a mailing service that can send automated emails to users.
4. **Yesung** will be responsible for developing the FrontEnd-Android APP. This includes designing and implementing the user interface, integrating the app with the BackEnd API to retrieve and display data, and ensuring that the app is performant and user-friendly.
5. **Changyeon** will be in charge of developing the FrontEnd-iOS APP. This involves designing and implementing the user interface, integrating the app with the BackEnd API to retrieve and display data, and ensuring that the app is performant and user-friendly on iOS devices.

### 5.2 Plan

Our team has set a project timeline with specific deadlines for each phase of the development process, as seen in the Figure 5. The first phase, which includes ideation, planning, shaping service, and making proposal, will be completed by March 24th. This phase is crucial for establishing a clear project scope and direction, identifying potential challenges and risks, and developing a detailed plan of action.

The second phase, which involves UI design and software architecture development, will be completed by March 31st. During this phase, the team will focus on creating an intuitive and user-friendly interface for the platform, as well as developing a robust software architecture that can support the platform's features and functionalities.

The third phase, which includes collecting data to validate the crawling engine and creating the mobile app and server, will be completed by May 5th. This



**Fig. 5.** Kingo-M Application screenshot

phase is essential for ensuring the platform's reliability and effectiveness, as well as creating a mobile app that can be easily accessed and used by students.

Finally, the fourth phase of code integration, acceptance testing, and release will be completed by May 19th. During this phase, the team will integrate all the components of the platform, test its functionality and usability, and release it to the public. This phase is crucial for ensuring that the platform meets all the requirements and expectations of its users, and that it is ready for use in a real-world setting.