MyCampus: Customize your iCampus

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Abstract. 'iCampus' is an online class platform of Sungkyunkwan University, which has been used by many students and professors. Through COVID-19, not only online lectures, but also announcements, materials, and assignments of all classes are uploaded through iCampus. As the importance has been emphasized, there has been an approach to improving the function of the iCampus. However, there was a problem that they are concentrated only on the deadline for lectures and assignments. This study proposes a chrome extension-based program for iCampus that user can manage the overall lecture. Program will provide the functions: lecture checklist, lecture memo, summary of class materials, and notification of deadline for lectures and assignments. Furthermore, program improve the existing UI on the iCampus to enhance the user's experience.

Keywords: iCampus · Chrome extension · UI/UX

1 Introduction

1.1 The importance of suggested project

Almost every student in SungKyunKwan University is using iCampus, a platform mainly for lecture contents, for a long period of time. Also, iCampus has established oneself as an online lecture platform as it's already been 3 years since Covid-19 pandemic started. Most of professors and assistants provide lecture, assignments and even quiz or test through iCampus which means managing their study through iCampus is a significant issue to students. There are some previous approaches of checking the attendance and assignments. However in respect of studying, attendance and assignments are not the whole thing. So we propose our solution to provide more functions to students to manage their study not only attendance and assignment, but also in other respects, e.g. making checklist of the lectures such as checking what they've heard or what they want to watch one more time.

1.2 Brief introduction on previous approaches

To solve the problem of iCampus and for the convenience of the students, three kinds of Chrome extensions, iCampus check, iCampus Check Plus, iCampus support tool, have been made.

iCampus Check 'iCampus' Check is a chrome extension for SKKU students which is the oldest one of existing extensions. iCampus Check is a service of providing students whether they took their lectures or finished given assignments. It also notifies students the remaining day for the lecture or the assignments.

iCampus Check Plus 'iCampus Check Plus' has been introduced to solve the main problem of iCampus Check. This extension can reflect the "Assignments and Assessments" category. Also it provides separate information about Real-Time-Streaming lecture and recorded lecture.

iCampus Support Tool 'iCampus Support Tool' is a developed version of 'iCampus Check'. This brings the exact function of iCampus. One main difference with other programs is that it can change UI. This lets users to change a color or size of the lecture on the dashboard.

1.3   Proposed solution

To satisfy all needs of students, we propose a new program, "MyCampus". We designed our program to provide all the functions that the students need to manage their study. MyCampus is a kind of personalized iCampus. We will let students handle their courses in a "studying" point of view. They will be able to make their own checklist of the lectures, take their own memo of the lectures. In addition to this personalized function, we will propose an efficient function. Not only the functions that the previous approaches have shown but also we will provide the whole lecture notes, announcements, and a course information at once.

Planning We are planning to develop our program with Chrome Extension. To manage our data, we are planning to use chrome.storage.local which is an optimized storage for chrome extensions.
We are going to implement the functions one by one and at last we are planning to test our program through SKKU students.

2   Motivation

Problem of iCampus The main problem of this platform is that each professor has their own style of managing their lecture and lecture notes. Students must check every section of each lecture to find the lecture contents that they need. Along with this problem, since there's lots of lectures, at most 8 lectures per semester, it is not an easy thing to handle all lectures and assignments aligned to them.
There were some previous approaches to help students managing their studies, but we found that they are missing some important functions. In terms of managing studies, not only the attendance or the assignments but also listening to

the lectures properly or taking important memos for the classes is a significant part. However, the existing techniques do not provide those functions. Thus, we suggest our new program, MyCampus, that provide all necessary functions for the students.

3   Objectives

The main goal of "MyCampus" is to provide the most convenient UI of iCampus and help students to study in a more efficient way. The existing methods are providing functions which was the main discomfort of iCampus. But as time goes by, it seems to need more functions to study more comfortably.

Main Functions of MyCampus Through our solution, students will be available to reach five main functions, check a brief summary of the course, take memos about the lecture, mark on the lectures they want to watch again, sort a lecture into an order that students want, and check all the lecture notes at once. Through these functions, we expect students to overcome the discomfort of iCampus and manage their semester more efficiently.

4   Background & Related Work

4.1   Chrome Extension

Chrome Extension is an additional program that users can install to make the programs more convenient. Chrome users can download the extensions they want from the 'Chrome Web Store', and developers can easily deploy their extensions on store after Google reviews them.
Chrome Extension can provide a suitable function for the program because it can access data stored in the browser (such as login session information, cookies) and access the UI of the program.
Due to the advantage of being able to use data that stored in the browser, a program using the user's information can be developed even if the user's personal information is not directly stored or used. "MyCampus" will be developed as a Chrome Extension program because it needs to utilize personal information such as user's course information and assignment submission status.

4.2   Related Work

iCampus Check 'iCampus Check' is a chrome extension that allows user to check the list of tasks that have not yet been completed among the list of lectures and assignments registered in the 'Lecture Content'. It has the advantage of providing a simple UI in the form of a pop-up, and viewing task information(such as deadlines) at a glance(see Fig. 1). So it currently has the largest number of users. However, there is a fatal disadvantage of not being able to bring up the

list of tasks registered in the 'Task' and the list of streaming lectures in real time. In addition, there is a disadvantage in that it takes a certain amount of time to load data whenever extension is executed.

Fig. 1. pop-up screen changed using 'iCampus Check'

iCampus Check Plus 'iCampus Check Plus' is a chrome extension that adds the function of providing task list registered in the 'Task' to 'iCampus Check'. In addition, it has the advantage of being able to display real-time lectures(see Fig. 2). However, the disadvantage of taking a certain amount of time to load data every time extension is executed is not compensated.

Fig. 2. pop-up screen changed using 'iCampus Check Plus'

iCampus Support Tool 'iCampus Support Tool' is a chrome extension that provides the functions of the above extensions and makes it easier to see by changing the UI of the iCampus (see Fig. 3, Fig. 4).. In addition, the function of registering to-do list and checking it on the dashboard is also added. However, like 'iCampus Check', there is a disadvantage in that it is not possible to bring up lists of 'Task' and real-time lectures.
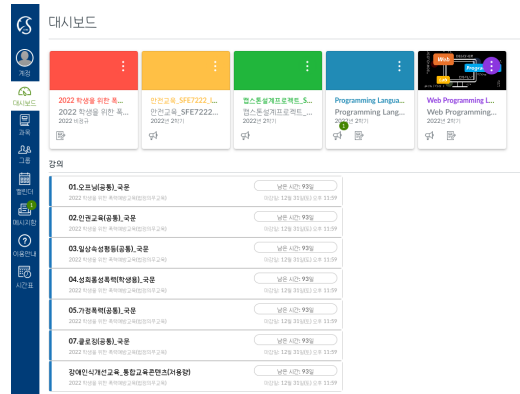

Fig. 3. Dashboard screen changed using 'iCampus support tool'

Fig. 4. pop-up screen changed using 'iCampus support tool'

5   Problem Statement

iCampus is a place where students do activities related to learning. At iCampus, professors upload elements necessary for lectures, and students learn by using them. However, there is one big problem here. It is the fact that learning costs more than necessary. Among the functions currently on iCampus, what is essential for students is checking attendance of lectures and submitting assignments. Except these, iCampus only provides lectures, materials, and announcements, but there are no additional functions. Therefore, students must use additional tools to manage their learning. For example, students have to write down their study schedules in their diaries and search through iCampus web pages to find out what to do. However, this is also a annoying task. This is because iCampus websites take a lot of time to move pages. On average, students take six to eight courses a semester. And each subject is updated with new information almost once a week. In this situation, it is very difficult and confusing for students to check and manage new materials every week. Therefore, students need a tool that can quickly check and manage the necessary information.
Students sometimes turn on lectures just to check attendance. Sometimes, they watch them again to review the class. Professors can assign titles to lectures, but most often use unfriendly titles. Students can't grasp at a glance by looking at the lecture list what this lecture is about or what lecture they wanted to take again. So, students click on each lecture and find out whether it is what they were looking for.
The iCampus page is slow to browse. Due to the feature of lecture platform that uploaded once a week, new items are rarely added except for urgent notices. In this situation, it is very likely that the page students visited a while ago has not changed, and it is a waste to reload the data on this page again. If all the data is retrieved and stored at once, the page can be moved without delay.

6   Proposed Solution

MyCampus efficiently stores and displays the data on iCampus. Data on iCampus is not updated often, so students can quickly browse the pages once they save it. It also improves the current uncomfortable UI so that students can check the data more intuitively.

6.1   Store Data

First, students can load data by pressing the refresh button whenever they want. It takes a few seconds, but it stores all the data students need. Next, students can show the UI of MyCampus instead of the existing one. On this page, based on the data just saved, the materials are listed so that students can see them easily.

6.2 Mark on Lectures

Students can make two types of mark on the lecture(see Fig. 5). One is a completion mark and the other is bookmark. The completion mark is used to indicate that the learning is actually over. Bookmarks are used for lectures that need to be watch later.
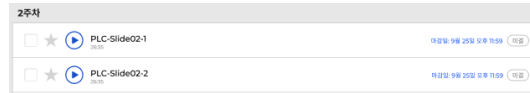

Fig. 5. Mark on lectures

6.3 Filter and Sort

The current lecture list is long and ordered by time, making it difficult to scroll as the semester passed. So MyCampus provides filters and sorting functions so that students can quickly find the lecture they want(see Fig. 6).

Fig. 6. Filter and sorting functions

6.4 Subject Dashboard

MyCampus provides a dashboard page that shows important information about a specific subject(see Fig. 7). Students can check information about the subject, lectures and tasks of the week, and upcoming real-time lectures here. In particular, it provides a storable note, which students use when they have something to remember about the subject.

6.5 Collect by Type

MyCampus provides a classification for mixed materials. Professor uploads lectures, files, and assignments together on the 'lecture content' menu. However, MyCampus classifies it and makes it easy to identify the type. In addition, it provides a function to collect by type.

Fig. 7. Subject Dashboard screen

7   Planning

1. Specification of Function & UX/UI design
   - Design wireframe using Figma.
2. Planning the detailed development
3. Api analysis & Api documentation.
   - Analyze the iCampus website using capture requests and cookies on Postman.
4. Setting the environment of project
   - Implement react, typescript tool for chrome extension.
   - Create the manifest.
   - Declare the permission of storage, Api in mainfest.
5. Development of Background script, Content script and UI script
   - Get json data using AJAX.
6. Test
7. Publish in Chrome Web store
   - Create and setup a developer account.
   - Fill out additional listing information(product details).

Table 1. Weekly plan for development of program

task	Sep.		Oct.				Nov.				
	4	5	1	2	3	4	1	2	3	4	5
UI/UX design	■	■									
Planning the detailed development		■	■								
Environment & permission setting			■	■							
Api analysis & Api documentation				■	■						
Development of UI element script				■	■	■	■	■	■		
Development of Background script				■	■	■	■	■	■		
Development of Content script				■	■	■	■	■			
Test									■	■	■
Publish on webstore										■	■