King Abdulaziz University

Department of computer Science

Faculty of Computing and Information Technology

CPCS-381

Human-computer interaction

MyKAU

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Introduction

MyKAU is an app developed for King Abdulaziz University for students and instructors. It provides many features, including displaying calendars and supporting messaging, to assist students throughout their academic experience. Our project will focus on finding any existing flaws with the application to improve the student experience.

Problem Description

The MyKAU application, utilized by the community of King Abdulaziz University, has been identified to have several areas needing improvement to better serve its diverse user base. Key issues highlighted include limitations in communication features, lack of language diversity, and challenges with the user interface and navigation. Additionally, there is a noted need for refinement in specific functionalities to enhance user satisfaction and accessibility.

The project's objective is to address these overarching concerns by developing a more inclusive, user-friendly, and efficient platform. This will involve reevaluating the app's design and functionality to ensure it aligns with the varied needs and expectations of its users, thereby fostering a more supportive and productive educational environment.

Project Goals

- Improve usability: Make it easier for students to navigate and utilize the MyKAU app.
- Increase Engagement: Address user-reported issues to enhance the app's usefulness and appeal to students, encouraging more active participation.
- Enhance User Interface: Refine the design of the MyKAU app to make it more intuitive and user-friendly.
- Add New Features: Enhance the MyKAU app by introducing additional tools and options, expanding what users can do with the application.

Similar Application

Many universities have apps like "MyKAU," for example, "UJ MyFuture" at Jeddah University. Both are only in Arabic, which makes it hard for international students to use them. "UJ MyFuture" shows only the day's schedule and doesn't let students message their instructor. "MyKAU," however, shows schedules for the day and week and has a messaging system. In terms of human-computer interaction standpoint, neither of them appears to be user-friendly.

Target Users

The King Abdulaziz University instructors and students are the target audience for the MyKAU app. The user base consists of students from different academic backgrounds and fields, from freshmen to seniors. Additionally, instructors, including professors, teaching assistants, and administrative staff, rely on the app for communication and administrative purposes. With a focus on simplicity and usability, MyKAU aims to provide a seamless experience for all users, regardless of their technological background.

Persona 1

Mohammad Camara - International Graduate Student
Background: Mohammad is a 24-year-old international student from Guinea pursuing his bachelor's degree in information technology. He is fluent in French and English, although he sometimes struggles with technical terms.

Scenario 1: Communication with lab instructor
In preparation for his next lab assignment, Mohammad needs clarification on a few procedural processes. He uses the MyKAU app to find his lab instructor to ask him. He finds that the app does not allow him to communicate with lab instructors directly. As a result, Mohammad has to postpone asking questions until the next lab session, which causes delays in the completion of his task.

Scenario 2: Accessing English Language Support
Mohammad installs the MyKAU app only to find out it's only available in Arabic. This situation makes it difficult for him to navigate and understand the app's features. This language issue makes it difficult for him to use the app properly, impacting his experience.

Scenario 3: GPA Calculator Usability
In an attempt to determine his priorities, Mohammed makes use of the MyKAU app's GPA calculator. However, the tool makes it difficult for him to enter his grades because it doesn't display the numbers on the screen. As a result, he questions the accuracy of the GPA findings, which disturbs his preparation.

Persona 2

Abdulrahman Bajunaid - Undergraduate Computer Science Student
Background: Abdulrahman is a 21-year-old undergraduate student majoring in Computer Science. He is always seeking ways to optimize his time and relies heavily on technology to manage his academic life.

Scenario 1: Restrictive Messaging Timelines
Abdulrahman is working on an important project when he runs into a technical issue that requires instructor help. Due to the current message limitations, which limit the user to only sending messages on the day of the lecture on the MyKAU app, he can't communicate and obtain guidance until the day of the lecture, which causes delays in the project.

Scenario 2: Interface Complexity
While taking a study break to organize his week, Abdulrahman opens the "MyKAU" app to review his schedule and arrange his upcoming homework. However, he becomes annoyed and confused when he notices that different icons in the app appear to perform identical functions, making the experience more frustrating than it should be.

Scenario 3: Unclear Academic Schedule
Abdulrahman checks the MyKAU app to plan his participation in a study group, relying on the app's schedule to inform him of his availability. Unfortunately, the existing layout's lack of clarity leads to a misinterpretation of his schedule, resulting in his absence from a critical lecture.

Research Methods

We have decided to use questionnaires and interviews as our two research approaches for this project for the following reasons:

- They provide a deeper insight into users' experiences with MyKAU.
- Questions can be customized to meet project goals, ensuring we gather relevant information.
- Surveys enable statistical analysis of gathered data, while interviews offer detailed user experience understanding, filling potential gaps from surveys.
- Both participants and researchers find remote questionnaires and interviews to be a convenient and appealing choice.
- We will be able to collect qualitative information (such as comments and open-ended answers) as well as quantitative information (such as ratings and rankings) by employing both questionnaires and interviews.
- Drawing conclusions and suggestions from the problems people raise during the interview process is helpful.

Questionnaire

The questionnaire is divided into three sections:

1- Demographic Questions

- Age
- Gender
- What is your current year of study at the university?
- How often do you use MyKAU?

2- Semantic Questions:

- How would you rate the overall usability of the MyKAU app?
- How would you rate the app's UI (e.g., icons, navigation, layout, color contrast and font size)?

3- Yes/No Questions:

- Do you think the lack of the English language in MyKAU is a problem?
- Have you encountered a problem when you want to send messages using MyKau?
- Do you have trouble telling the difference on the app between the lecture and break times in the schedule?
- Would you prefer the option to switch between 24-hour and 12-hour (AM/PM) time formats?

4- Open-Ended Questions:

- Have you experienced any issues while using the app?
- Is there any feature you feel is missing from the MyKAU app?

Results of the Questionnaire

العمر | Age

92 responses

- 16 or younger
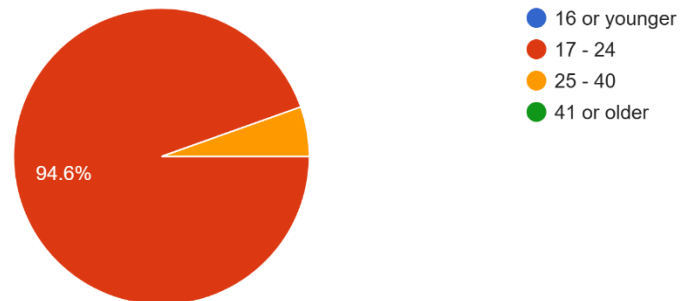- 17 - 24
- 25 - 40
- 41 or older

94.6%

Figure 1: Age demographic question.

Figure 1 reveals that the majority of users were between the ages of 17 and 24. It indicates that the age range of the bachelor's students was the subject of the poll.

ماهي السنة الدراسية الحالية لك في الجامعة؟ | What is your current year of study at the university?

92 responses

- 1
- 2
- 3
- 4
- 5
- 6

19.6%

40.2%

17.4%

17.4%
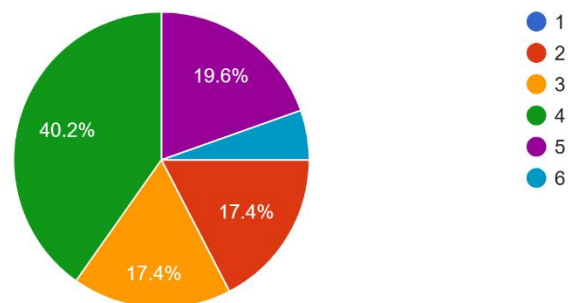
Figure 2: Year of study demographic question.

Figure 2 shows that around half of the survey results are made up of students who are in their third or fourth year of study.

Gender | الجنس
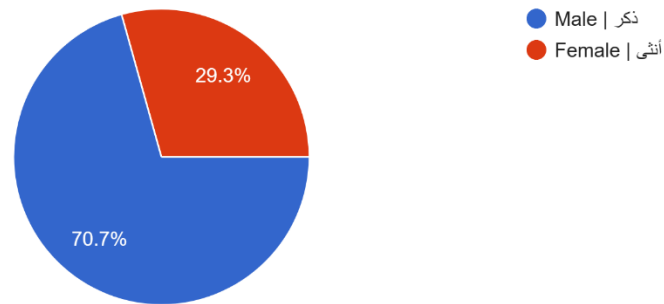92 responses

● Male | ذكر
● Female | أنثى

Figure 3: Gender demographic question.

Figure 3 shows that about 70% of the participants are males. Which means that most of the participants are from the male section.

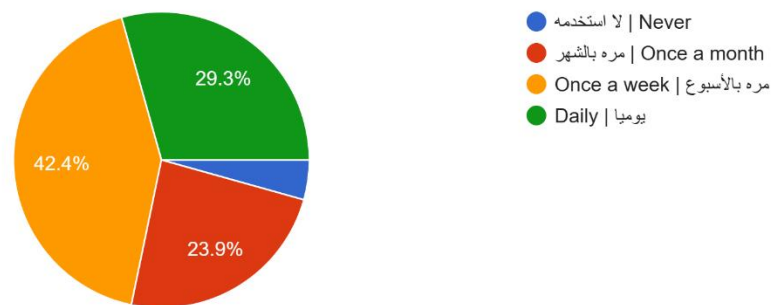How often do you use MyKau? | ماهو معدل استخدامك لتطبيق MyKau ؟
92 responses

● لا استخدمه | Never
● مره بالشهر | Once a month
● Once a week | مره بالأسبوع
● يوميا | Daily

Figure 4: How often do you use MyKau?

Figure 4 shows that around 42% of students use the application just once a week, indicating that it does not meet their needs. We'll see the reasons why most people aren't using it every day later.

how would you rate the overall usability of the MyKAU app? | ماهو تقييمك لسهولة الاستخدام في التطبيق؟
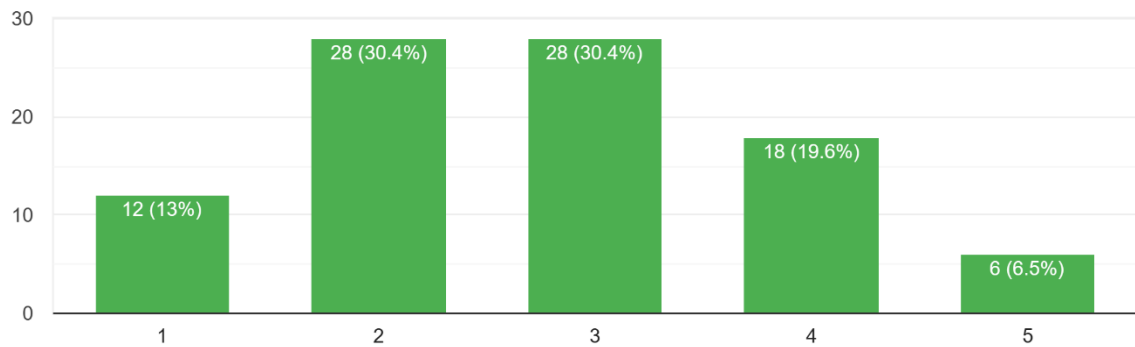
92 responses

Figure 5: Question about the usability of MyKAU.

Figure 5 shows that almost 30% of users consider the app's usability to be poor. This implies that the main problem we have with MyKau is that it is not very user-friendly, which effect the usage of the application in Figure 4.

how would you rate the app's UI (e.g., icons, navigation, layout, color contrast and font size)? | ماهو تقييمك لواجهة التطبيق (الخطوط، الالوان، الايقونات)؟
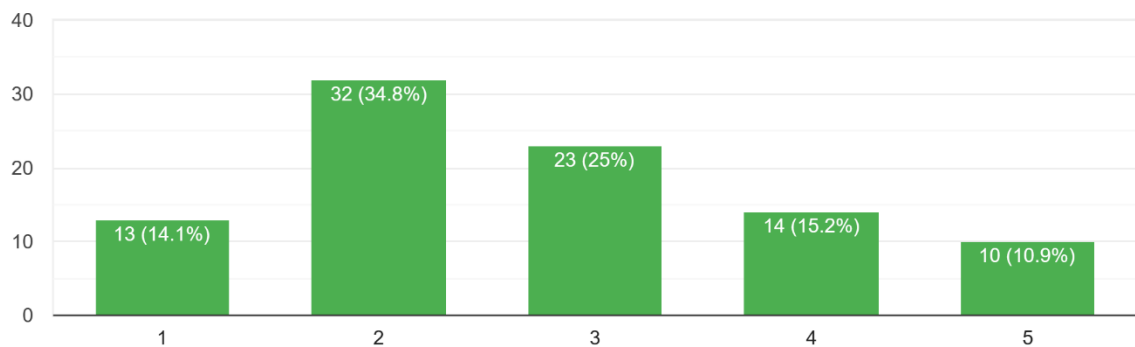
92 responses

Figure 6: Question about MyKAU UI.

Figure 6 shows that around 49% of the users think that the UI is poor. Thus, in order to satisfy user needs, we must think about redesigning the application's user interface. Additionally, we will find out what UI issues the majority of people are having in the open question.

Do you think the lack of the English language in MyKAU is a problem? | هل ترى بأن عدم تواجد اللغة الإنجليزية في التطبيق يسبب مشكلة؟

92 responses

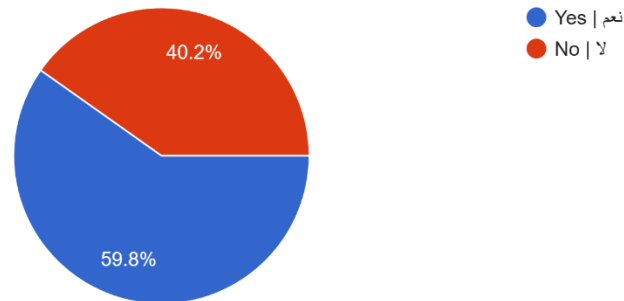
- نعم | Yes
- لا | No

40.2%

59.8%

Figure 7: Question about the support of English Language.

Figure 7 reveals that about 60% of users seek support for the English language, even though the first language for the majority of students is Arabic. In addition, the absence of English support will have a bad effect on international students.

have you encountered a problem when you want to send massages using MyKau? | هل واجهتك مشاكل خلال محاولتك لإرسال الرسائل من خلال التطبيق ؟

92 responses
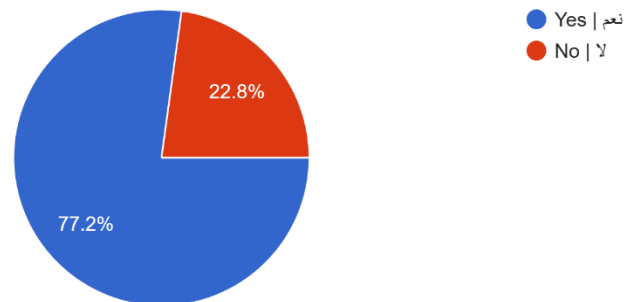

- نعم | Yes
- لا | No

22.8%

77.2%

Figure 8: Question about the messaging system.

Figure 8 shows that about 77% of the students face problems trying to send messages to the instructors, indicating a critical issue for students and instructors as well. Not being able to communicate with the instructors when needing guidance through the education journey can cause low performance from students.

Do you have trouble telling the difference on the app between the lecture and break times in the
هل واجهت مشكلة في التفريق بين المحاضرات واوقات الفراغ في الجدول؟ | schedule?
92 responses

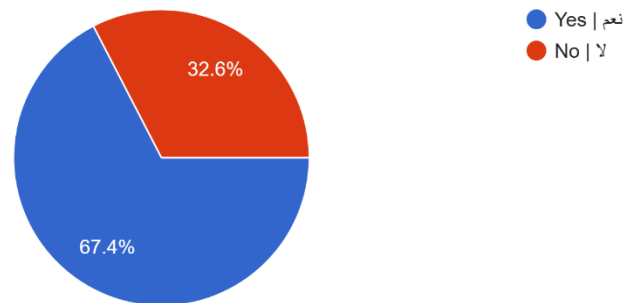● نعم | Yes
● لا | No

32.6%

67.4%

Figure 9: question about the lecture and break times.

Figure 9 shows that around 67% of students face a problem differentiating between lecture and break times in
the schedule layout. This issue results from the application's schedule page's poor design. Additionally, the issue
might be the reason for some students' absences from lectures because of a confusing schedule.

Would you prefer the option to switch between 24-hour and 12-hour (AM/PM) time formats? | هل
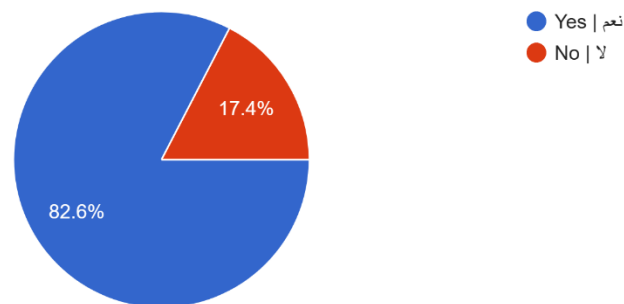تفضل وجود خيار للتحويل بين تنسيق 24 ساعة وتنسيق 12 ساعة؟
92 responses

● نعم | Yes
● لا | No

17.4%

82.6%

Figure 10: Question about time format.

Figure 10 shows that about 83% of the students agree on the importance of having a 12-hour format in the
application, which is one of the problems with reading the schedule.

هل واجهت اي مشاكل في استخدام التطبيق؟ | Have you experienced any issues while using the app?

44 responses

مشكلة بالتواصل مع الدكاترة

الخروج المتكرر من الدخول الذاتي

بطيء جدا و تتأخر رسائل الدكاتره و أحيانا ما توصل و دايما يسجل خروجي من البرنامج و اوقات ما يشتغل بالكامل اصلا

Yes, while sending messages.

لا ولكن الالوان مزعجة خصوصا في الوضع الليلي بحيث ان بعض الايقونات تكون مخفية ولا يمكن ضغطها الا عند التحويل للوضع النهاري

والشيئ الاخر ان اشعارات الرسائل لم تعد تصلني مع اني قمت بتفعيل الاشعارات

تسجيل الدخول كل مره

لا

issues with logging in: its always logged out i dont like having to log in every single time

Figure 11: shows that most of the problems users facing.

Figure 11 shows that most problems are with the UI fonts and colors. Also, many users were specifically suffering from the messaging system of the application, which limited the number of letters and did not let users send messages to instructors unless it was the day of the subject and the message inbox.

ماهي الميزات التي تتمنى إضافتها للتطبيق؟ | Is there any feature you feel is missing from the MyKAU app?

38 responses

تحسين صفحة الدرجات والجدول، السماح بنسخ نص الرسائل

احتساب للمعدل

واجهة أفضل وأسهل للتعامل

بس لو يخلون المميزات الاصلية تشتغل كافي. لان معظم المميزات بالتطبيق لكن تنفيذها سيء جدًا.

تطبيق جديد

دليل المقرر

Exams and quizzes grades

مكالمات مع الدكاتره

تحويل الوقت من ٢٤ ل ١٢ و تسهيل التواصل مع الدكاتره

Figure 12: Question about missing features.

Figure 12 shows the missing features users need. Most users seek improvements on existing features or want features that already exist but are not well designed. Also, some proposed features, like the 12-hour format and English language support, were already mentioned in previous questions.

Interviews

The structured interviews were primarily chosen for their ability to garner in-depth insights from participants' reactions and detailed responses, surpassing what could be obtained through traditional questionnaires. This approach allowed us to delve deeper into the specifics of user experiences and preferences, facilitating a better understanding of the underlying reasons behind their choices and feedback regarding the MyKAU app. This method proved invaluable in identifying nuanced issues and areas for improvement directly from the users' perspectives, so we conducted the interview with 6 participants we started with the explanation of why we are doing the interview and then started with some leading warm-up questions:

- What is your name?
- What is your age?
- How many years have you been at the university??

Then proceed to ask these questions:

- Can you describe your overall experience using the MyKAU app, including both positive and negative aspects? What features or elements particularly stand out to you?
- Have you encountered any difficulties while using the app? Please describe these situations in detail, including how these issues affected your use of the app.
- The MyKAU app uses a 24-hour time format; how does this affect your schedule planning and interpretation? Have you faced any challenges, and how do you adapt to using this format if it's not your preference?
- How do you perceive the visual layout of the schedule in the MyKAU app? Are there elements that particularly help or hinder your understanding? Please provide specific examples.
- How do you view the overall color scheme and design of the app? Do the colors and design elements facilitate easy navigation and clarity, or are there areas of improvement?
- Have you used the messaging system within the MyKAU app? Please describe your experiences with it, any challenges, or benefits. How do these experiences compare to messaging systems in other apps you use?
- If you could add or change one feature in the MyKAU app, what would it be, and why? What specific benefits would you anticipate from this change?

Results of interviews

User Experience:

- General Feedback: Users acknowledge the app's functionality but criticize the user interface for poor navigability.
- Specific Challenges: Difficulties reported include restrictive messaging and confusing layout.

Functionality Insights:

- Time Format: Mixed responses on the 24-hour clock; some find it challenging, suggesting a preference for a more intuitive 12-hour format.

- Schedule Layout: Widely viewed as cluttered, affecting daily planning and clarity.
- Messaging System: Viewed as restrictive compared to other platforms, with room for significant improvement.

Design and Usability:

- Visual Design: Opinions vary, with some users finding the color scheme acceptable but others demanding clearer, more coherent design.
- Navigation: Users struggle with icon consistency and overall app navigation.

Enhancement Suggestions:

- Overall: Calls for an interface redesign for better usability and inclusion of more intuitive communication features.
- Specific Features: Recommendations include clearer schedule layout, improved messaging system, and the addition of English language support.

Findings

An analysis of the MyKAU app, based on feedback from undergraduates through questionnaires and interviews, reveals significant usability and functionality issues. About 30% of users rate the app's usability as poor due to navigation and interface problems, while 49% disapprove of the UI design, indicating a need for a more intuitive layout.

Significant issues with the messaging system were reported by 77% of users, and 60% expressed a need for English language support, highlighting a demand for bilingual options. Additionally, 83% prefer a 12-hour time format, pointing to further usability challenges.

Insights from structured interviews underline the necessity for a comprehensive redesign to enhance navigation, messaging functionality, and time format. Implementing these changes based on user feedback could greatly improve the app's utility for the King Abdulaziz University community.

Storyboard

The student wants to see his classes today. so he has to sign in

From main page he clicks on الخدمات

From الخدمات he clicks on الجدول الدراسي

Click on الجدول الدراسي user can select a day to see the schedule in that day

User clicks on أسبوعي to see the schedule of the whole week
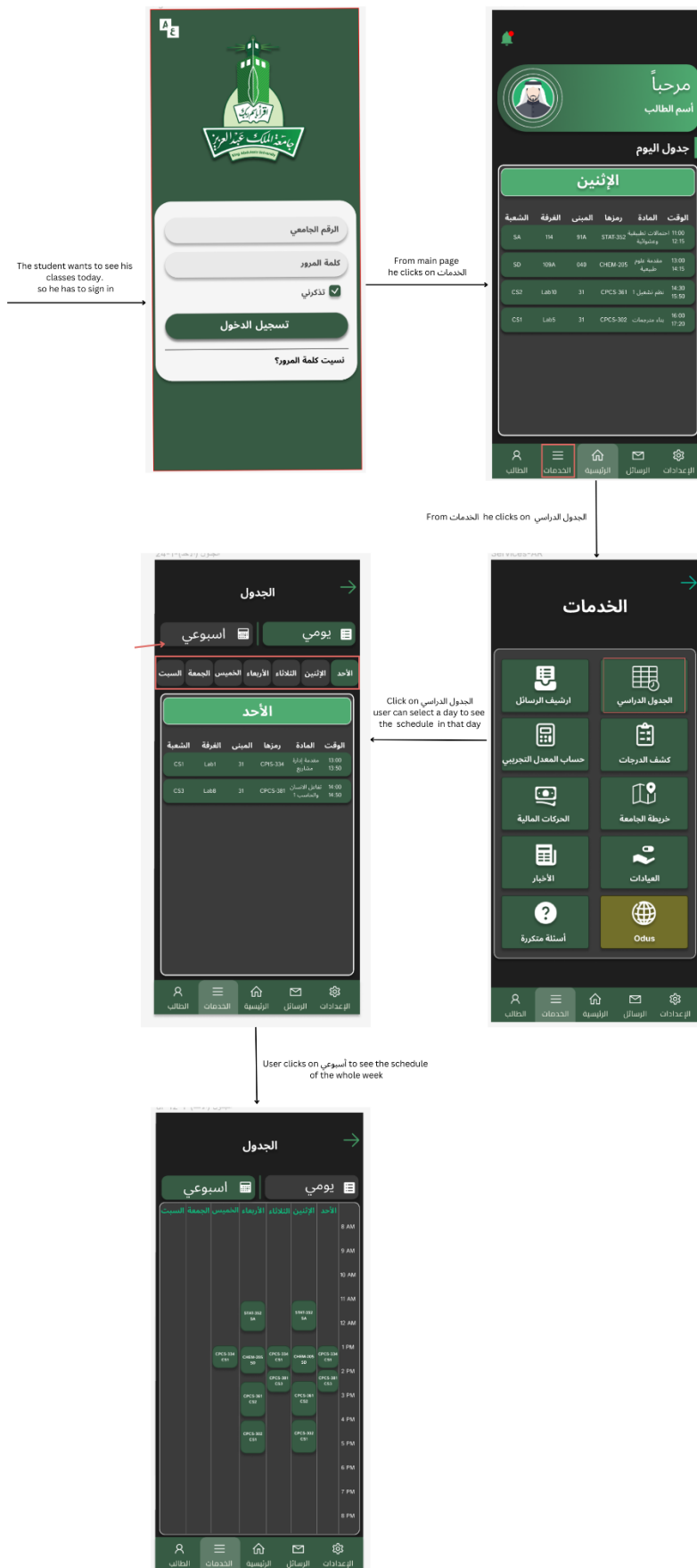
Before and After Table

Before	After
Problem: there is no option for language switching, wrong alignment for the "Forgot password" checkbox, no presence of the "remember me" button, and no language switching option. **Solution:** alignment problems were resolved, and buttons to switch languages and remember me were added.	

Before	After

Problem: the vibrant and saturated colors are hard to look at for a while, the top-right menu button is hard to reach, the schedule doesn't show what day it is, and spacing between classes makes it hard to see the whole day.
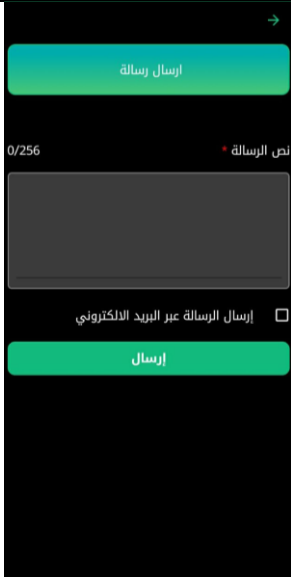
Solution: replace the top-right menu button with a navigation bar that is easier to use, replace the colors with a better color scheme, and provide better spacing and alignment for the schedule section.

Problem: the vibrant color at the top is drawing attention to unimportant parts, there is no way to start a new chat, the message preview doesn't show much, and there is no scroll bar.
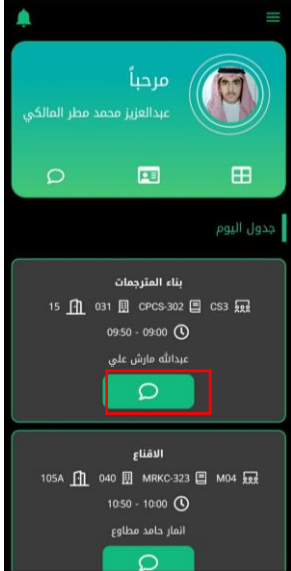
Solution: remove the vibrant color to a better color scheme, add a start chat option and a scroll bar.

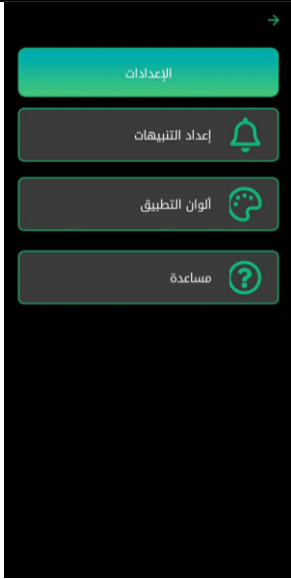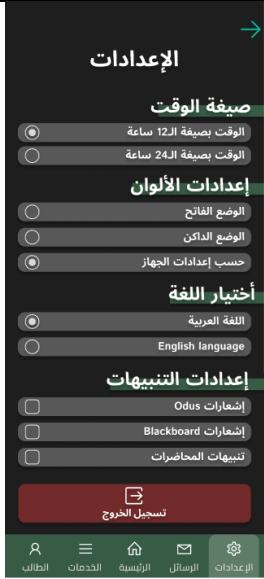| Before	After

Problem: it doesn't indicate who is receiving the message, and there is no way to add a message title.

Solution: add a header for the receiver's name and a section for the message title.
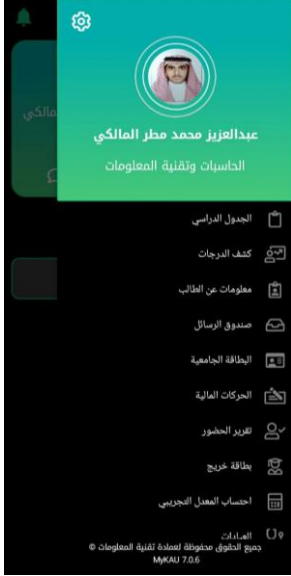

Problems: you couldn't choose who to start a chat with except the instructors who will appear on the schedule on that day.

Solution: added the option to send to any instructor at any time.

Before	After

Problems: settings have a menu inside of a menu, no timing format, no support for the English language, and no sign-out option.

Solution: eliminate the menu inside of a menu by listing options below a header, add a time format option and English language option, and add a sign-out option.

Problems: the text is too small, the colors are vibrant, some services have different icons across the application, and there is no scroll bar to show the range of services.

Solution: replace the side menu with an icon in the navigation bar, change the service's design to have a good text size with consistent icons, and add an ODUS button for ODUS services.

Before	After

Problem: absence of essential information like faculty, student ID, and major. Vibrant colors at the top and bottom sections draw users' attention to where the important information is in the middle.

Solution: Added all essential information and better use of color to show all information with no distractions

Problem: entered marks are not visible because both font and background are in black, and it only calculates cumulative GPA, and there is no option for adding subjects or resetting.

Solution: change the colors to make marks visible, add two buttons for adding subjects, reset the calculator, and now it also shows semester GPA.

Before	After

Problem: the design of each class is hard to read, no clear way to know the break times between classes, classes in the same row have different times, and classes have different colors without a clear meaning.

Solution: change the design to a timetable schedule layout to help users differentiate between class and break time and remove time from squares for better readability.

Problem: some classes of the next day are partly visible for no reason, to access information, the user has to open a menu inside a menu, and the wrong choice of vibrant color for a button distracts the user from the information.

Solution: remove the details button and take advantage of the whole screen to show all information about classes

Conclusion

In wrapping up, our comprehensive review through surveys and interviews has underscored critical areas needing improvement in the MyKAU app. Addressing the identified concerns such as user interface complexity, limited messaging functions, and lack of language options will significantly enhance usability and inclusivity. The collective insights guide us towards a future where the app serves the King Abdulaziz University community more effectively, offering a more engaging and accessible digital tool for students and faculty alike.

Appendix

UI Design:

User-Interface-desgin-figma

Figma Prototype:

MyKau-Figma-Prototype

Video showcasing the new application:

CPCS381 - GROUP PROJECT MyKAU app (youtube.com)

Final Presentation:

Final-Presentation-Slides-Canva-MyKau