

Usability Design for the Unisbank Smart Campus Application Using Website-Based Usability Testing

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Abstract

Smart Campus Unisbank is an application-based online platform used for tuition payment, course registration (KRS), viewing semester grades, and various other activities in the educational field. This research uses the analysis of reviews of the Smart Campus Unisbank application found on Google Playstore using the Usability Testing Method. Usability Testing is used to analyze display issues of an application to match the needs of the service users. This Usability Testing includes several components, including learnability, efficiency, memorability, errors, and satisfaction. Based on user reviews of the Smart Campus application available on Google Playstore, recommendations obtained will be implemented into the website. Complaints from students are visualized into a diagram design

Keywords: Reviews; Smart Campus; Usability Testing; Website

1 Introduction

With the rapid development of mobile technology and the ease of internet access, mobile applications have become the primary choice for users to access various services and information. This also applies in the context of campus academic management, where students tend to use mobile applications to carry out various activities such as tuition payment, course registration (KRS), and access other academic information.(Estrella & Aknuranda, 2023)

Smart Campus is an application-based online platform used for tuition payment, course registration (KRS), viewing semester grades, and various other activities in the educational field. Smart Campus has become one of the main solutions for students who want to pay tuition fees online. In addition, Smart Campus not only provides services for tuition payment but also for other academic management, where students tend to use mobile applications for various activities such as course registration (KRS) and access to other academic information.(Made et al., 2022)

User reviews are a valuable source of information that can be used to assess the level of satisfaction and identify features that need

improvement in the Smart Campus application. Through review analysis, the Smart Campus application gains insights into user perceptions and experiences, which can be used to identify areas for development and service improvement. Reviews play an important role in contributing to the development and sustainability of the Smart Campus Unisbank application.(Natanael et al., 2023)

In a Smart Campus application, to achieve optimal user satisfaction, user needs must be met through Usability Testing. This Usability Testing includes several components, such as learnability, efficiency, memorability, errors, and satisfaction. Usability Testing is a process of evaluating the application to improve user experience and interface. The goal of Usability Testing is to identify issues in the interface and user experience of the Smart Campus Unisbank application, find opportunities to improve the application, and understand the needs and behaviors of application users.(Safitri et al., 2022)

In the context of web or mobile application development, web-based usability testing offers high flexibility and accessibility. Based on user reviews of the Smart Campus application available



on Google Playstore, the recommendations obtained will be implemented into the website.(Rodhi et al., 2022)

2 Research Methods

This research aims to measure and analyze the level of usability of the UNISBANK Smart Campus application using the web-based Usability Testing Method. In collecting this data, a survey was conducted based on reviews of the Unisbank Smart Campus application found on Google Playstore. This research will involve direct testing on users to obtain objective data regarding user experience. The research flowchart can be seen in Figure 1.(Jamil et al., 2022)



Picture 1. Flowchart Research

2.1 Data Collection

At the data collection stage, the research used descriptive methods with a quantitative approach. This research design aims to analyze the usability level of the Unisbank Smart Campus application based on user reviews available on Google Playstore. This research will collect and analyze data from user reviews to gain insight into their experiences and perceptions of the Unisbank Smart Campus application. Analyze patterns related to user experience, such as frequently occurring issues and preferred features. So it will

produce review data that is relevant to the research.(Hadi Wijoyo & Candra Brata, 2021)

2.2 Usability Testing

Usability testing is an evaluation method used to measure how easily and effectively users can interact with an application or system. In this research, usability testing will be used to assess the UNISBANK Smart Campus application based on user experiences expressed through reviews on Google Playstore. Usability testing is simply a system that can minimize user errors and the usefulness of an application. The usability testing flowchart can be seen in Figure 2.(Hasna Salsabil Rakha & Hadi Wijoyo, 2021)

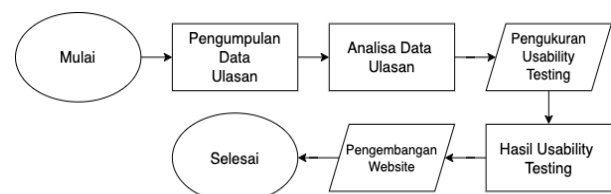


Figure 2. Flowchart Usability Testing

The stages of the Usability Testing Method are as follows:

1. Determine the application that will be analyzed, which will then be carried out by usability testing.
2. Collect user reviews from Google Playstore for the Unisbank Smart Campus application.
3. Analyze collected reviews to identify relevant usability issues and aspects.
4. Using analysis of the review data that has been obtained to apply usability testing to the Unisbank smart campus application.
5. Document and interpret the results of usability testing.
6. Develop a website to present analysis results and recommendations for improvement.(Prameswari et al., 2020)

2.3 Website Development

A website is a collection of related web pages that can be accessed via the internet. Websites are very important media in the digital era because they provide various kinds of information, services and interactions for users throughout the world. This research carried out website development from the results of Usability Testing on reviews of the Unisbank Smart Campus application found on Google Playstore. Website

Development Flowchart can be seen Figure 3.(Rizma Reyhana Putri & Dwi Indriyanti, 2023)

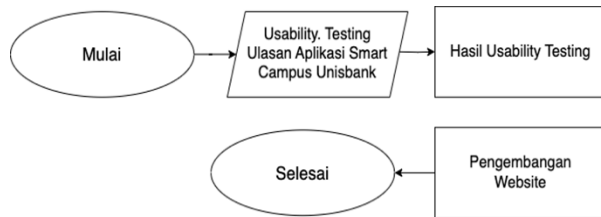


Figure 3. Flowchart Web Development

Website Development Stages from Usability Testing Results on Unisbank Smart Campus application reviews on Google Playstore are as follows:

1. The first step is to analyze the results of Usability Testing. Identifying problems, and understanding areas where users experience difficulty or discomfort
2. After analyzing the Usability Testing test results, the next step is to prioritize the necessary improvements based on the level of urgency and impact on the user experience.
3. The next step is to implement the Usability Testing analysis results that have been obtained on the website.(Nugroho et al., 2022)

3 Result and Discussion

This research obtained research results that started from logging in to the student page then went straight to the complaints page after that, filled in the complaint form and submitted it to the complaint database, the results and discussion of the input data were tested qualitatively using the Laravell processing program. The method used is a website-based usability testing method. The data obtained in this research subject is in accordance with what was done. In this case the research subjects include Stikubank University, supervisors and researchers. To support the development of students' skills in the world of industry and business, facilities and infrastructure are needed to support activities related to information systems.

3.1 Discussion

In this case, it contains a discussion of the Unisbank smart campus application, discussing the results of the program that has been carried out.

3.2 Laravel

Laravel is an open source PHP-based web application framework, using the Model-View-Controller concept. Laravel is under the MIT license, using GitHub as a place to share code.(Abiwardani et al., 2020)

3.2.1 Designing the Smart Campus Complaints Program

This research begins by collecting needs and identifying things that are needed in designing the program as follows:

- a. Analysis of the system currently running Currently, the Smart Campus application still has several frequently complained about, namely regarding payment methods and problems in payment.
- b. After getting this research information, you can start creating a database for complaints.
- c. Next, the smart campus complaint web page was designed using the Laravel programming language.
- d. The final stage is to test whether the complaint web system runs smoothly according to the input and output.(Fitria & Ikhwani, 2023)

3.2.2 Designing Website Pages

The research stage will begin to design the web page or system that will be built. The designs that researchers made include actor determination design, use case design, use case narrative design, class diagrams, database design, interface design, and system flow design.

3.2.3 Web Page Design

1. Determination of Actors

The actors involved in this system are users or customers. Customers are users who have registered in the system. Users can input complaints that will be input which can be seen in table 1.

Table 1. Determination Actor

No	Actor	Information
1	User	The rights that can be exercised by user actors are input complaints, login

2. Smart Campus Website Usecase Design

In this research, there is a smart campus website use case design which can be seen in Figure 4.

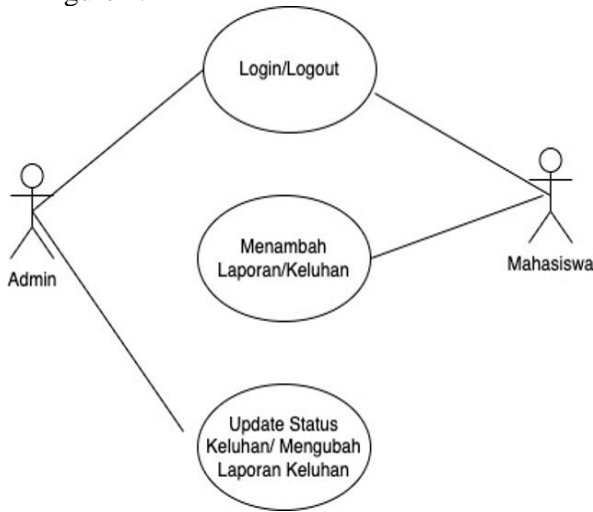


Figure 4. Usecase Website Smart Campus

3. Designing Usecase Scenario

A use case scenario is a more detailed explanation of each use case that occurs in the system. The use case diagram consists of:

- The usecase name is the name of the usecase that will be described
- Actors involved
- Description is a Usecase description
- Trigger is the goal of the use case.
- Pre conditions are important conditions for the use case to start.
- Basic flow is the activities carried out by the use case.
- Post conditions are activities after the use case has been completed.

3.3 Use Case Login

Use case Login on the Unisbank smart campus page aims for every user who accesses to get information according to status, Usecase Login can be seen in table 2.

Table 2. Usecase Login

Use Case Name	Complaint Information
Aktor	Login
Description	This use case describes a user logging into the system

Use Case Name	Complaint Information	
Precondition	This use case is carried out after the actor is on the login page	
Trigger	When users want to access their full information in the application	
Basic Flow	Aktor Action	System Response
	1.Input Username and Password In form login 2.Klik Login	3.Cek username and Password 4. Displays the Main Page
Postcondition	The content of the complaint information can be seen by the actor.	

3.4 Use Case Complaint Info Page

The use case for the information and complaints page on Smart Campus is to provide a platform for users to provide feedback, report problems, or ask questions related to various aspects of campus life. Use Case The complaint info page can be seen in table 3

Table 3. Usecase Complaint Info Page

Use Case Name	Complaint Information	
Aktor	User	
Description	This use case describes a user who wants to see complaint information	
Precondition	This use case is carried out after the actor logs in	
Trigger	When the actor wants to see complaints on the website	
Basic Flow	Aktor Action	System Response
	1.Klik Menu Page 3.Klik Complaint	2. Displays the Menu Page 4. Displays the Complaint Information Page
Postcondition	The content of the complaint information can be seen by the actor.	

4 Design Interface Website

This research will make design adjustments to the website page interface based on the results of review analysis

4.1 Design Interface Form Login User

On the login page, students are asked to fill in their ID number and password to enter the Unisbank Smart Campus, which can be seen in Figure 5



Figure 5. Design Interface Form Login User

4.2 Design Interface Complaints Page

The page where students can make complaints about Unisbank Smart Campus can be seen in Figure 6.

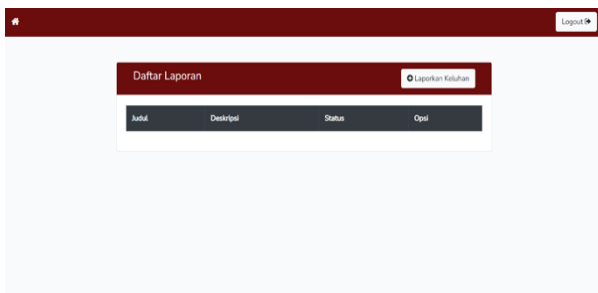


Figure 6. Design Interface Complaints Page

4.3 Design Interface Form Complaints

The display of complaints that have been filled in by students, in this display students can add complaints about Smart Campus Unisbank can be seen in figure 7

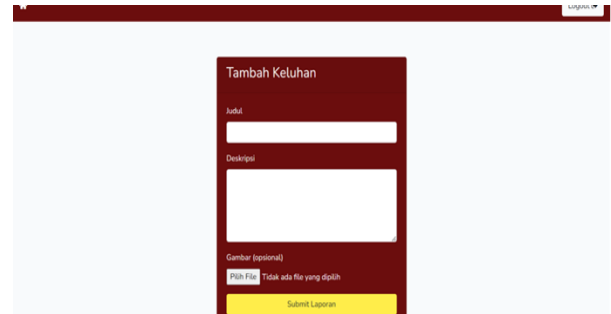


Figure 7. Design Interface Form Complaints

4.4 Design Interface Result Complaints

This page contains student complaints about the Unisbank Smart Campus, which can be seen in Figure 8

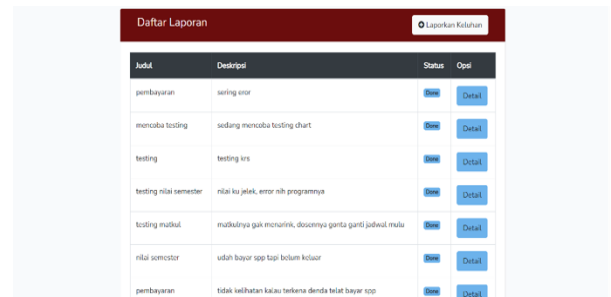


Figure 8. Design Interface Result Complaints

4.5 Design Interface Check Complaints

This page contains student complaints that have been received by the admin, which can be seen in Figure 9

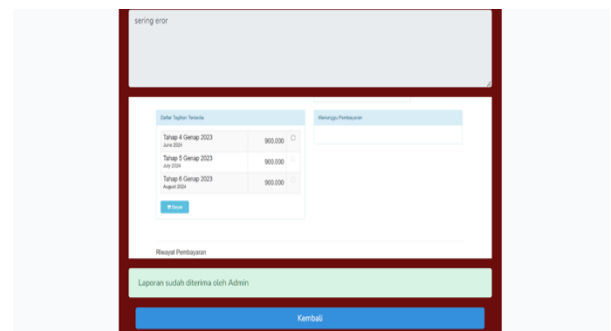


Figure 9. Design Interface Check Complaints

4.6 Design Interface Login Admin

The initial display of the login page for the Unisbank smart campus admin can be seen in Figure 10

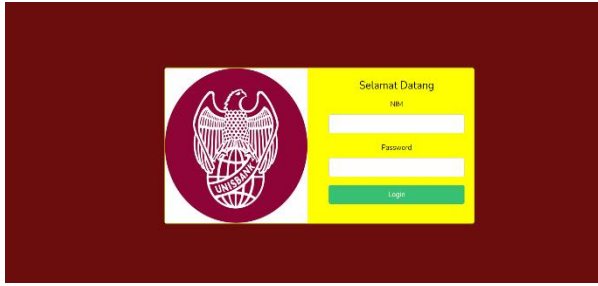


Figure 10. Design Interface Login Admin

4.7 Design Interface Reports Page Admin

This page contains information on all complaints submitted by students regarding the Unisbank smart campus application, which can be seen in Figure 11

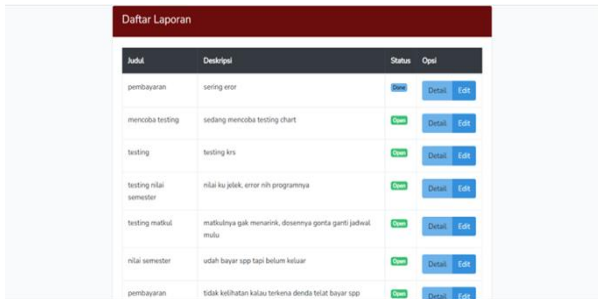


Figure 11. Design Interface Reports Page Admin

4.8 Interface Design Edit Admin Complaints

On the complaint edit page, the Admin has the task of correcting complaints that students have complained about Unisbank Smart Campus which can be seen in figure 12

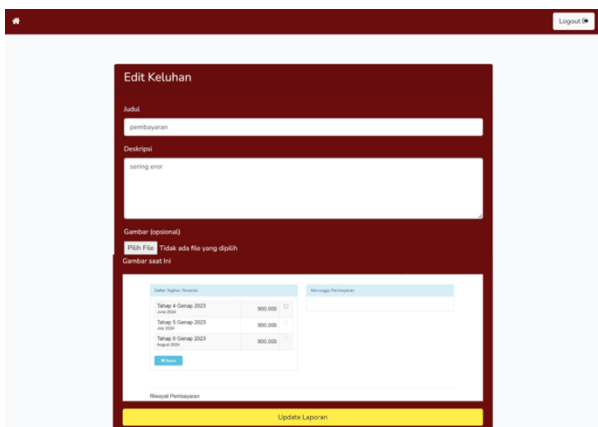


Figure 12. Interface Design Edit Admin Complaints

4.9 Interface Design Check Admin Reports

On the check report page, the Admin will process the complaint report and the word "done" will appear. When the admin has corrected the student report, it can be seen in Figure 13

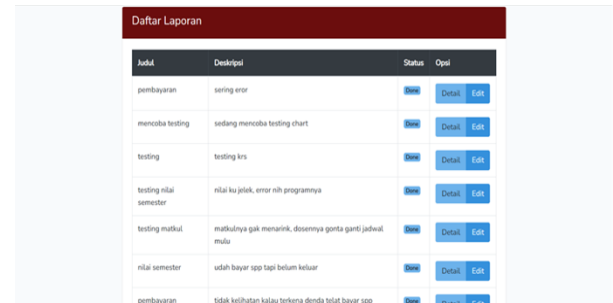


Figure 13. Interface Design Check Admin Reports

4.10 SPP Complaint Diagram Interface Design

This page contains a diagram to see the number of student complaints about tuition fees at Unisbank's Smart Campus, which can be seen in figure 14

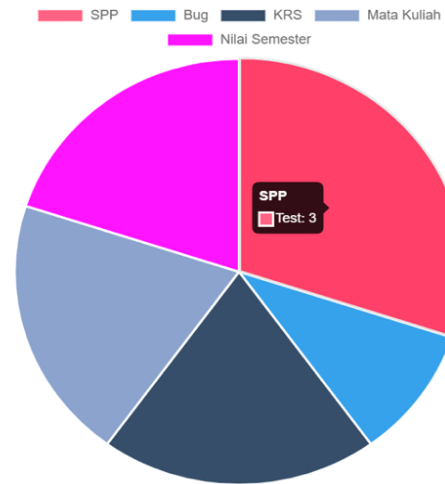


Figure 14 SPP Complaint Diagram Interface Design

4.11 Course Complaint Diagram Interface Design

This page contains a diagram to see how many student complaints there are about the courses on the Unisbank Smart Campus, which can be seen in Figure 15

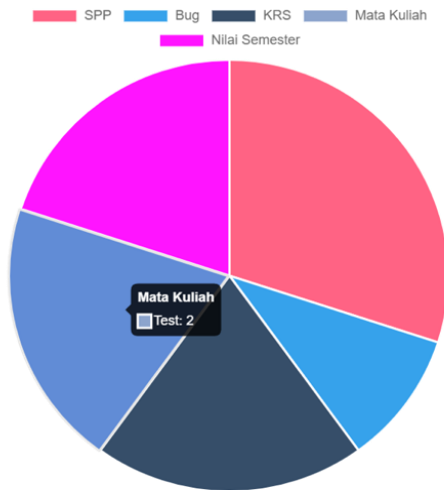


Figure 15. Course Complaint Diagram Interface Design

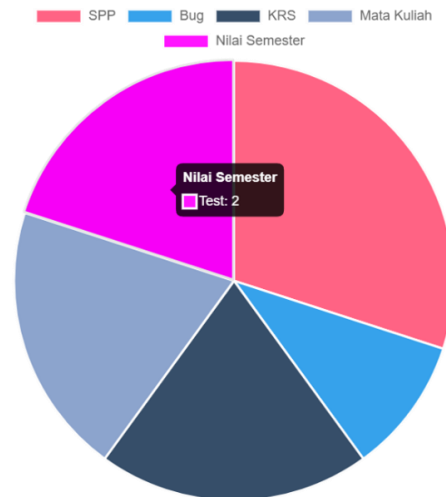


Figure 17. Semester Grade Complaint Diagram Interface Design

4.12 KRS Complaint Diagram Interface Design

This page contains a diagram to see the number of student complaints about KRS at the Unisbank Smart Campus, which can be seen in figure 16

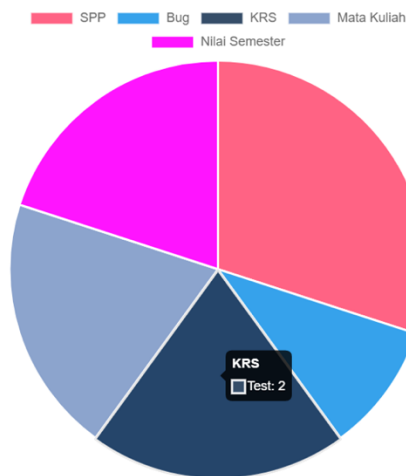


Figure 16. KRS Complaint Diagram Interface Design

4.14 Program Interface Design Complaint Diagram Other Programs

This page contains a diagram to see the number of student complaints regarding complaints about other features contained in Smart Campus Unisbank, which can be seen in figure 18

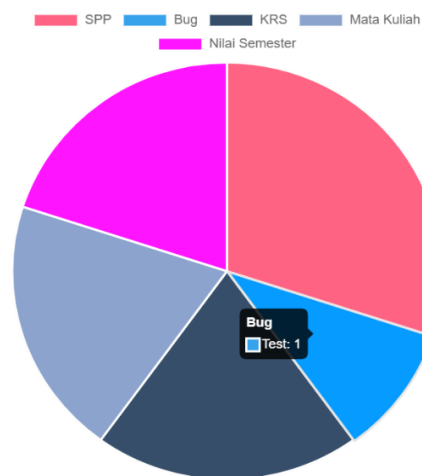


Figure 18. Program Interface Design Complaint Diagram Other Programs

4.13 Semester Grade Complaint Diagram Interface Design

This page contains a diagram to see how many student complaints there are about semester grades at Unisbank Smart Campus, which can be seen in figure 17

5 Conclusion

Based on the results of research that has been carried out using the Usability Testing method on reviews of the Smart Campus Unisbank application. Obtaining the following results, the Smart Campus Unisbank application has been tested for usability, getting quite good results from

the reviews. The results of the Smart Campus review data show that users are satisfied with the application. This. They assess that this application makes it easier for them to access campus information and services. However, there are also shortcomings in terms of accessibility which sometimes cause errors. The results obtained based on usability testing will be implemented on a website basis.

6 Suggestion

Based on the conclusions above, several suggestions that can be given for further development of the Unisbank Smart Campus application are as follows:

1. Made further improvements to aspects of the user interface to make it more attractive and intuitive. This can include using responsive design that supports access from multiple devices (desktop, tablet, and mobile).
2. Conduct regular usability evaluations to continuously monitor and improve user experience. Feedback from users must always be considered and used as a basis for application improvements.
3. Test the review data using the comparison method to get better results.

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