
Implementation of Question Bank Applications for Website-Based Students

Pandi Barita Nauli Simangunsong¹, Satria Yudha Prayogi², Sony Bahagia Sinaga³

Politeknik LP3I Medan¹, Universitas Islam Sumatera Utara², Universitas Budi Darma³

Email : Simangunsong.pandi@gmail.com, satria.yip@ft.uisu.ac.id, sonybahagia@gmail.com

Abstract

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Every tertiary institution, both private and public, has students with high and low scores. This also happened at the Catholic University of Santo Thomas, a private university in Medan, North Sumatra. So a solution is needed that can help students improve their grades, and one way is to make the previous year's questions a reference for student learning. So, a service or application is also needed that accommodates all the questions that exist at a university such as a question bank that can be accessed easily. The Waterfall method is used for the process of developing system engineering and software in an orderly and systematic manner. This method is taken with a systematic approach starting from needs analysis, system and software design, implementation, unit testing and development. In this application, users can upload questions they have, look for questions as references, mark questions that are considered important and download questions that are needed. Where is the purpose of making this application, students no longer have to bother looking for material references through the questions that were tested before. Where is the purpose of making this application, students no longer have to bother looking for material references through the questions that were tested before. The Waterfall method is used for the process of developing system engineering and software in an orderly and systematic manner. This method is taken with a systematic approach starting from needs analysis, system and software design, implementation, unit testing and development. In this application, users can upload questions they have, look for questions as references, mark questions that are considered important and download questions that are needed. Where is the purpose of making this application, students no longer have to bother looking for material references through the questions that were tested before. In this application, users can upload questions they have, look for questions as references, mark questions that are considered important and download questions that are needed. Where is the purpose of making this application, students no longer have to bother looking for material references through the questions that were tested before. In this application, users can upload questions they have, look for questions as references, mark questions that are considered important and download questions that are needed. Where is the purpose of making this application, students no longer have to bother looking for material references through the questions that were tested before. In this application, users can upload questions they have, look for questions as references, mark questions that are considered important and download questions that are needed. Where is the purpose of making this application, students no longer have to bother looking for material references through the questions that were tested before.

Keywords: Question Bank Application, Student, Website, Waterfall method

1. INTRODUCTION

At every university, whether it's the best university or not, it certainly has students who have good grades and students whose grades are quite low, this also happens to Santo Thomas Catholic University which is one of the private campuses in Medan. North Sumatra.

There are many things that can influence students to find it difficult to get good grades, namely, the lack of preparation from students in preparing material or learning references that they will study for exams such as

quizzes, midterm exams (UTS), and final semester exams. (UAS), as well as incomplete notes or material owned by students, also teaching lecturers who rarely provide material, and others. Often students are fooled by the questions they receive when facing exams, which turn out to be very different from the material or learning references they have prepared, so that can be detrimental to these students, where considerable time is wasted in finding and mastering the material, and getting less grades. satisfactory because it has been wrong in choosing learning references. Many students do not realize that most lecturers and instructors in making questions for exams have similarities every year, but not the same as a whole. Thus, this can be used by students in finding appropriate learning materials or references, when preparing students for exams, through questions from the previous year or the nearest year that already exist in each subject being tested. Based on this, we need a service that can be a place for all questions in a university from year to year which provides complete information on questions from each subject in assisting students in preparing learning materials or references when preparing for exams. especially at the Catholic University of St. Thomas.

2. METHOD

The research method used in the Question Bank Application is the waterfall method. The waterfall method is a systematic and sequential design and development model for information systems and software. The stages in the waterfall method are as follows.

1) Requirements analysis and definition

The needs analysis and definition stage is the stage in which data is collected from users on applications that are designed or developed and form the basis for the requirements and specifications of the system or software to be created.

2) System and software design

The system and software design stage is the process of developing or designing a system design using diagrams such as UML and software design, namely the interface display of the system to be designed or developed

3) Implementation and unit testing

At the implementation stage, the process of implementing all system designs and software that has been made into software that has been made and can be used is carried out. After that, testing of the software that has been implemented is carried out so that all units can work according to their goals.

4) Integration and system testing

In the integration and system testing stage, the software testing process is carried out in more detail on the software that has been implemented, by ensuring whether all units in the software have no bugs and achieve their goals. After successful testing, the software can be provided to the customer.

5) Operation and maintenance

This stage is the maintenance stage of the software that has been designed or developed previously which has gone through the 4 previous stages. One of the maintenance activities carried out is bug fixes and significant improvements to system units and services.

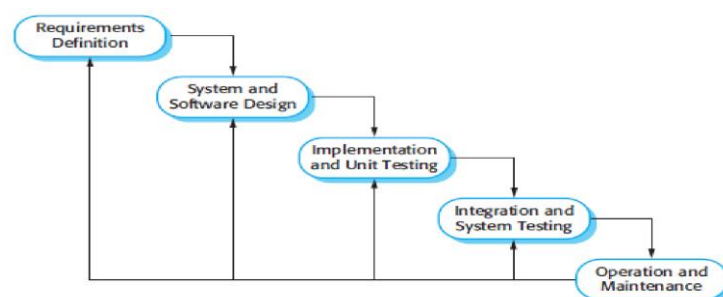


Figure1. Method Waterfalls

Figure 1. Above is the method that will be used in this study.

3. RESULTS AND DISCUSSION

The following are the results and discussion of the Question Bank Application research for Website-Based Saint Thomas Catholic University Students.

3.1. System Requirements Analysis

The Question Bank application aims to be a forum for information on questions that exist at Santo Thomas Catholic University from year to year which makes it easy for students to find references to their learning materials in order to achieve good grades in every course taken and studied. test it. The application engineering needs for this question bank consist of software and hardware. These devices are used to create and run programs such as computers, browsers, and the internet.

3.2. System Design

System design can be defined as the preparation of a new system to replace the previous system or as a whole serves to correct the deficiencies contained in the previous system. In the process of designing the system design the author uses the Unified Modeling Language (UML). Unified Modeling Language (UML) is a visual language that functions to explain, design, and document aspects that exist in a system. In system design, the Question Bank Application activities that present information about online questions are using Use case Diagrams, Activity Diagrams and Class Diagrams.

3.2.1. Use Case Diagrams

The following is an illustration of the use case diagram that occurs in the Question Bank Application, where there are question seekers, question makers and admins as users, where question seekers and makers are students:

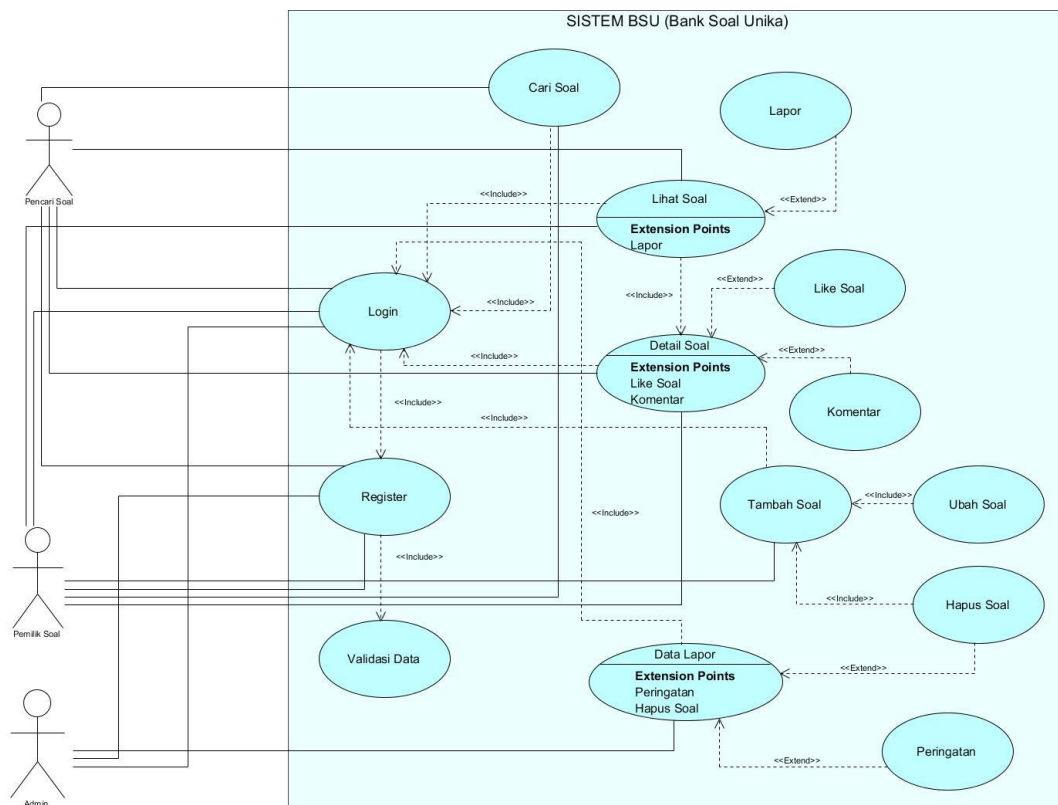


Figure 2. Use Case Diagram Question Bank Application

3.2.2. Class Diagrams

The following is an overview of the class diagrams used in the Question Bank Application to achieve the goals and benefits of this application:

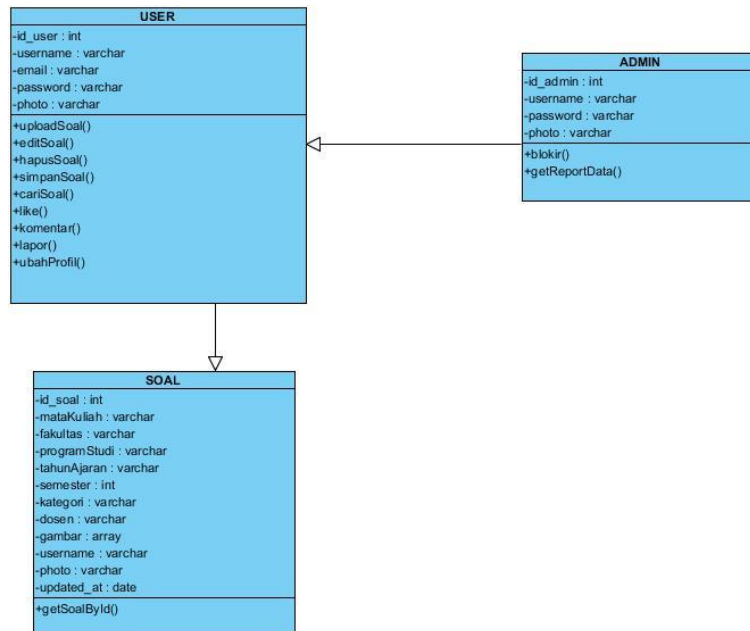


Figure 3. Question Bank Application Class Diagram

3.2.3. Model Relational Diagrams

The following is a relational diagram model that is applied to the Question Bank Application, which aims to be the basis for business processes that occur in this application and data storage for this application:

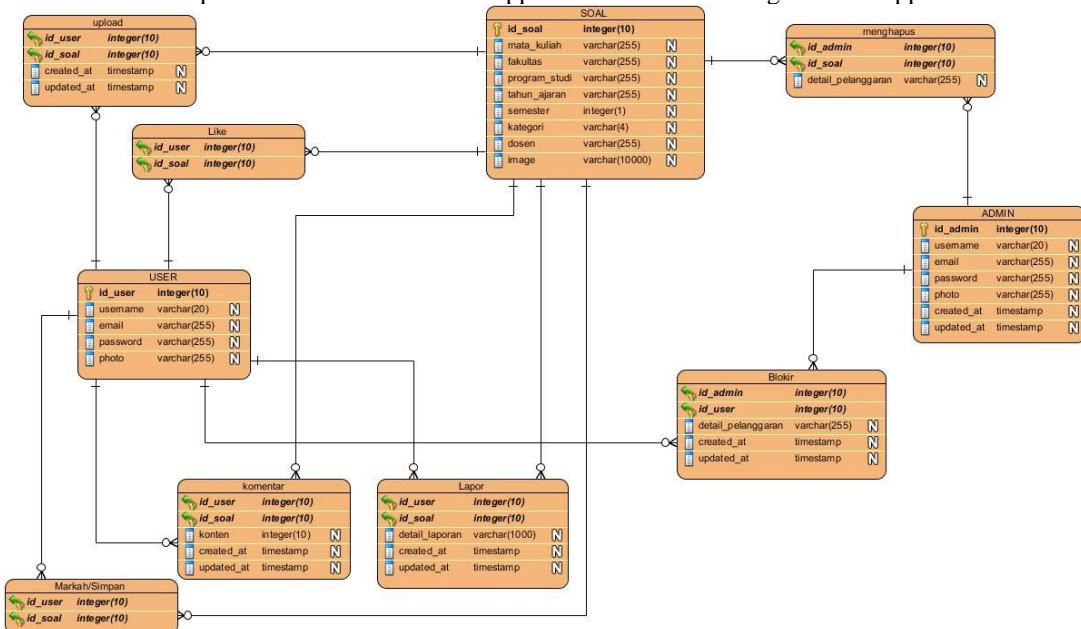


Figure 4. Question Bank Application Relational Model

3.3. Interface Design Plan

This Question Bank application is a service application that aims to assist students in finding question references. So that students want to use this application, a good interface is needed in appearance, usability and user experience, so that users, namely students, are comfortable and satisfied using this Question Bank Application. Therefore, the following is the entire interface design of the Question Bank Application in the form of a figma link.

3.4. Implementation

The following is an implementation of all the system designs and interface designs that have been made before, which form the basis for the process of making the Question Bank Application software usable.

3.4.1. Login Page Display

The following is the display of the Login page which will appear the first time when visiting the Question Bank website page. If the user doesn't have an account to log in, they can register an account first by pressing the yellow register text and the system will direct the user to the registration page.

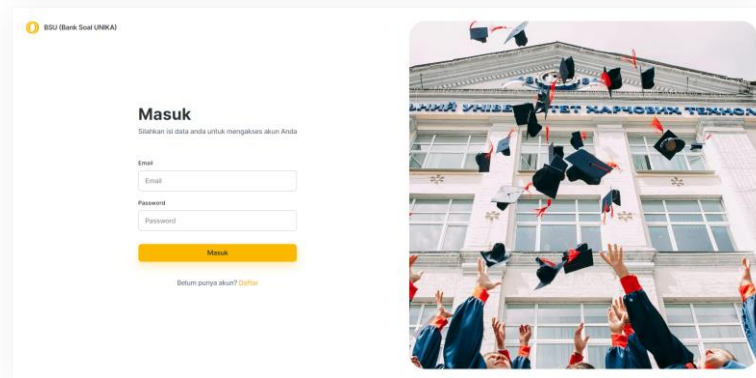


Figure 5. Login Page Display

3.4.2. Register Page Display

The register page is a page that is useful for creating a new Question Bank Application account for users, namely students, so they can access the contents, benefits and other pages available in this application.

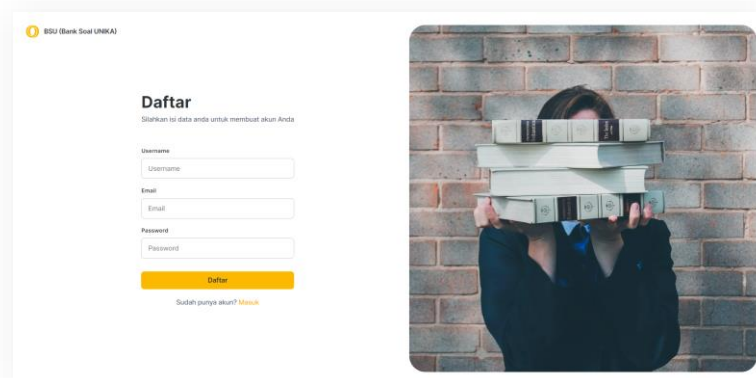


Figure 6. Register Page Display

3.4.3. Main Page Display

The main page is a page that displays all the questions that have been registered in the Question Bank Application in an orderly manner starting from the most recent questions in card form.

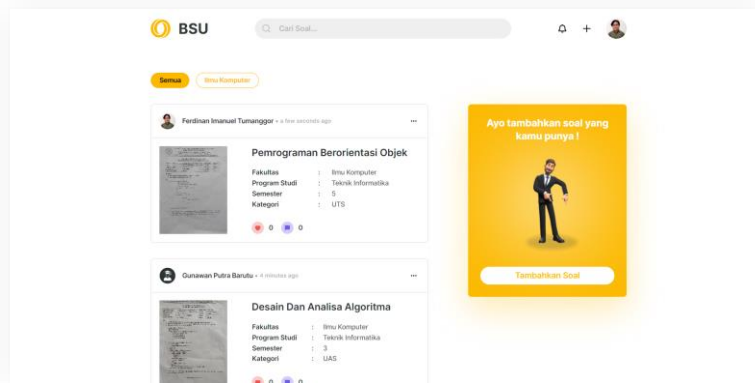


Figure 7.Main Page Display

3.4.4. Question Detail Page Display

The following is a question detail page that can be accessed if the user presses one of the question cards on the main page which displays detailed question information based on the question card pressed. On this page there are several features or uses, namely comments, likes, and question marks, which make it easier for users to find the most appropriate reference.

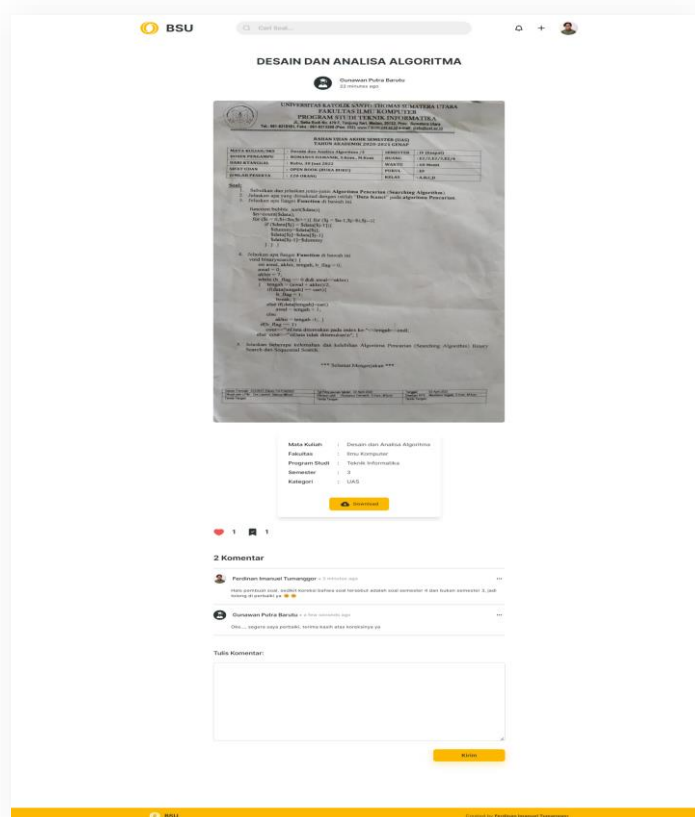


Figure 8.Question Detail Page Display

3.4.5. View the Add Question page

The Add Questions page is a page that functions to send the questions we have to the Question Bank Application by filling in some information in the form of questions in the form of photos and detailed information about the questions.

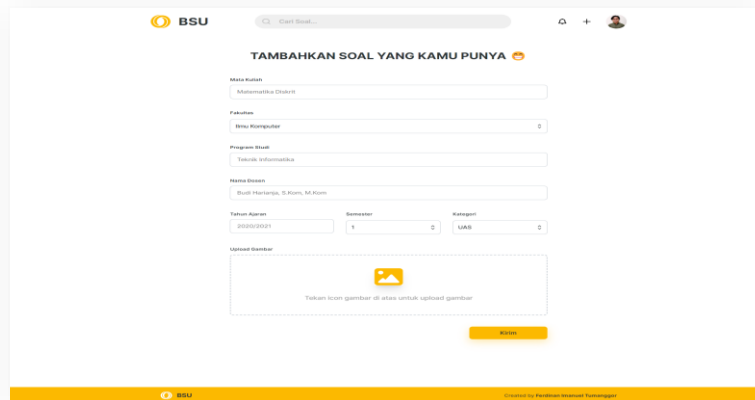


Figure 9. View the Add Question page

3.4.6. Change Problem Page Display

The Change Question page is a page that can only be accessed by users who have made the question before which functions to change data or supporting photos of the questions that have been made.

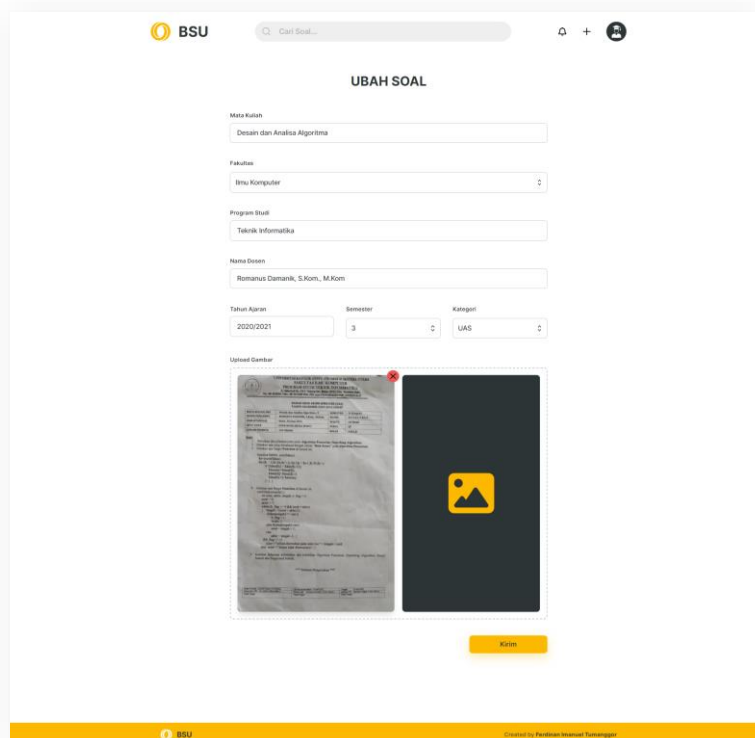


Figure 10. Change Question View

3.4.7. Notification Page Display

The following is a notification page that is useful for informing users about other users' responses to questions they have created, such as notifying users who comment or give likes.

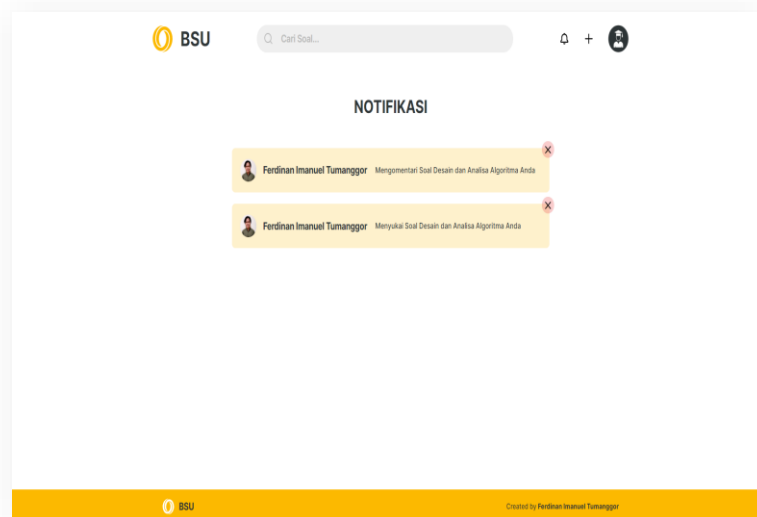


Figure 11. Notification Page Display

3.4.8. Display of the Problem Report Page

The Report Question page is a page that is useful for reporting questions that have been made by other people that are deemed wrong and may not be published.

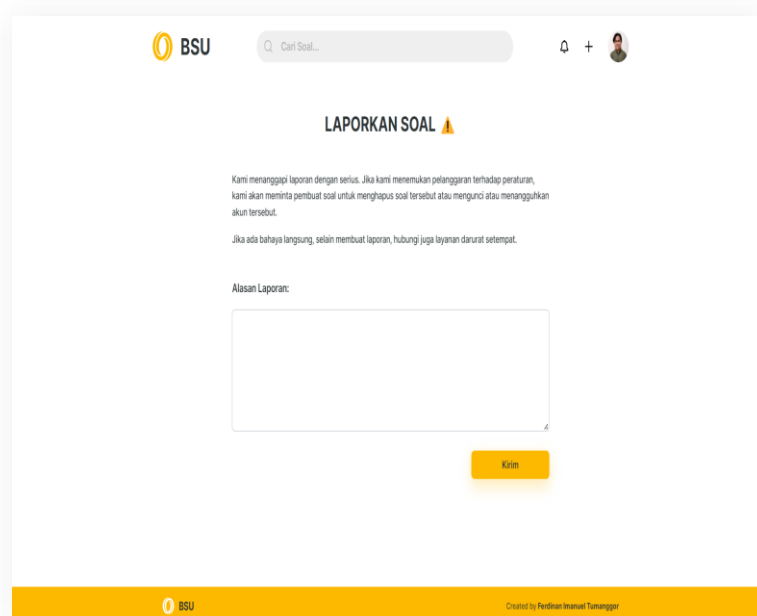


Figure 12. Display of the Problem Report Page

3.4.9. View Profile Page

The following is a profile page that has many features and uses, namely exiting the application, changing account data, viewing all questions that have been created by the user and viewing all questions that have been marked by him.

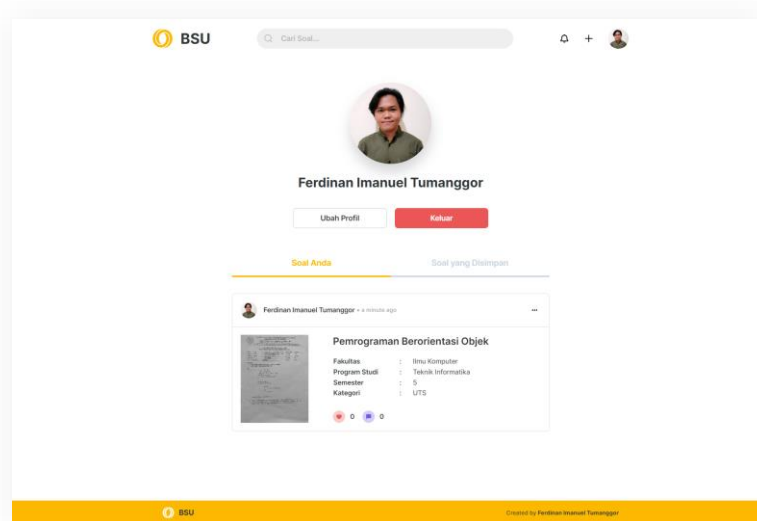


Figure 13.View Profile Page

In order to achieve the goal of the Question Bank application, which is to help students who need questions as their reference, it is necessary for users or students who have questions to be uploaded into the application in the form of images and provide detailed information about the uploaded questions, so that this information can be information for students who are looking for questions in finding the right references quickly and easily. The questions must be uploaded in the form of an image so that the question owner can easily provide the question and the question seeker can easily view and download the questions. Students who are looking for questions are also required to provide responses such as likes or comments on the questions they have used,

4. CONCLUSION

Based on the research above, it can be concluded as follows: With the question bank application for students at St. at the end of the semester (UAS) based on the questions available in the application which show the level of accuracy of the questions based on the responses of other users in order to get and improve the grades of the students of St. Thomas Catholic University for the better.

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