Website Based Floor Plan Design for Henricus Constant and Mikael Unika Soegijapranata Buildings

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Abstract— This study explains how influential technological progress is in several aspects, in this study it refers to aspects of education, knowledge, and facilities for students regarding floor plans. And with existing technological advancements, it doesn't make it difficult for students to find information boards or bulletin boards.

There are several methods of analysis, namely, Primary Data Sources and Secondary Data Sources. The second uses the Data Collection method in this method which is also divided into several sections, namely: Collection of Questionnaires or Questionnaires, Literature Study and Interviews. The third uses the Testing method which is divided into several tests, namely: Application Testing, Testing Model Development, Methodology Flowchart, Framework of Mind.

Keywords— technological, education, knowledge, and facilities.

I. INTRODUCTION

1.1 Background

The development of this technology also has an impact on routes and plans, with routes or plans that have been modified in such a way as to keep up with technological developments, it is increasingly easier for people to find the location of the place they want.

Soegijapranata Catholic University has several buildings, each of which has various faculties and rooms on each floor that are useful for lecture activities.

Therefore, it is urgently needed a floor plan that has been designed to keep up with the times to help Soegijapranata Catholic University students.

With this floor plan, it will be easier for students to get to know the Henricus Constant building at Soegijapranata University. And with this plan, students are expected to no longer be confused if there is a need for the Henricus Constant and Mikael buildings.

1.2 Problem Formulation

Based on the background above, the formulation of the problem can be taken as follows:

1. How can the Soegijapranata Catholic University students use this website-based floor plan?
2. How can students understand this website-based plan?
3. What is the impact of this website-based floor plan for the convenience of Soegijapranata Catholic University students?

1.3 Problem Limitation

Limitations of problems in the design of this system are:

1. Website-Based Floor Plan Application Design for the Henricus Constant and Mikael Unika Soegijapranata Buildings is intended for Unika students to make it easier for students to find a room to go to or look for.
2. This application is designed using the web base method.
3. This system only focuses on visualizing the Henricus Constant and Mikael building plans.

1.4 Research Objectives

Based on the formulation of the problem above, it can be interpreted that the research objectives obtained are
1. This website-based floor plan has a User Interface that is easy for students to understand.
2. This website-based floor plan can make it easier for students in lecture activities.
3. This website-based floor plan can increase students’ knowledge of the Henricus Constant and Mikael buildings.

II. METHOD

2.1 Data Sources

a. Primary Data Sources
   The primary data source used is by conducting interviews with students at the Soegijapranata Catholic University.

b. Secondary Data Sources
   Secondary data sources are obtained through journals or wikipedia available on the internet related to the topic of this application design.

2.2 Data Collection Techniques

2.2.1 Questionnaire or Questionnaire
   This questionnaire or questionnaire data collection technique utilizes a feature that exists on Google, namely the Google form, namely by creating and designing a questionnaire or questionnaire form and then distributing the form through social media services to make it easier to reach respondents.

2.2.2 Literature Study
   Library research is a data collection technique through written information sources, for example, scientific journals, written works, and online journals.

2.3 System Development Analysis

System Development Analysis is conducting a survey and assessing the feasibility of developing the system to be designed, and analyzing the needs of the system to be designed.

Image 2.1 Variable Image

2.4 Methodology Flowchart

A methodology flowchart is a diagram that explains how to describe the flow of problem solving aimed at gathering information and data on the object to be studied.

Image 2.2 Methodology Flowchart Image

2.4.1 Framework of Mind

Image 2.3 Frame of Mind Image
Image Frame of Mind below explains that the initial condition is that students are not familiar with the contents of the rooms in buildings other than the buildings students occupy, therefore many of the students who want to carry out activities or have an interest in going to rooms in other buildings do not know the location where the target room is located.

The final condition is the implementation of the website application, with the aim that it can be used as expected.

Henricus Constant and Mikael buildings so that students are not confused about finding the room they are going to. So this system will be made with a simple User Interface (UI), and an easy-to-understand User Experience (UX) with the aim that students can easily use it.

3.1.1 Use Case Diagram Design

In the use case diagram above it explains that the website-based plan has 2 actors, namely students (users) and editors (admin). Students will only display the building and its room information, on the editor page it will display room data which aims to update the existing data on the website plan.

3.1.2 Entity Relationship Diagram Design

The admin table has a one to many relationship with the room table which means one admin can edit a lot of room data.
3.1.3 Activity Diagrams

After designing use case diagrams and ERD, then carry out the stage of making the core process flow of the website that will be made. Image below will explain the core process flow of a website-based plan. From the activity picture below it is explained that the admin will display a page with the contents of the building and room data, each of which can be edited or added data if needed.

4.1.4 Website User Interface Design

4.2 System Implementation

4.2.1 Home Menu Interface Implementation

3.2.2 Building Menu Interface Implementation

3.2.3 Implementation of Map Display Interface in Buildings

3.2.4 Implementation of the Admin Login Display Interface

3.3 Respondent Data Analysis

1. Validity Test

The validity test functions to test the variables tested on the questionnaire, and to test the extent to which the tested variables are valid in carrying out their functions.

Table of First Validity Test Results
In the table above is the first validity test, the data above shows that the IQ3 variable does not reach the validity score of 0.279. Then it is necessary to re-test again by eliminating the IQ3 variable.

<table>
<thead>
<tr>
<th>Rotated Component Matrix</th>
<th>Component 1</th>
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<th>Component 3</th>
<th>Component 4</th>
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Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

In the table above is the second validity test, the data above shows that the IQ3 variable does not reach the validity score of 0.279. Then it is necessary to re-test again by eliminating the IQ3 variable.

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Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

Table of Second Validity Test Results

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Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

The reliability test in the table above shows that the results of Cronbach's Alpha .826, when referring to the reliability value range table, indicate that the results of this reliability test have qualified at the GOOD value so that these variables can be accounted for.

3. Correlation Test

The correlation test has the function of looking for relationships and testing between variables in the form of questionnaires or quantitative ones like what researchers do. Following are the results of the correlation test:
Correlation Test Table

Based on the correlation test above, correlated data is marked with a significant value (2-tailed) which is less than 0.5, so from the table above it can be concluded that:

a. The EE variable correlates with the BI variable with a significance value of less than 0.5 and is marked with an asterisk.
b. The PE variable correlates with the BI variable with a significant (2-tailed) value that is less than 0.5, and is marked with an asterisk.
c. The IQ variable correlates with the BI variable with a significant (2-tailed) value that is less than 0.5, and is marked with an asterisk.

4. Analysis of Statistical Test Results

Based on the statistical tests that have been carried out, it can be concluded that this website-based floor plan can help users to find a location they are looking for, this is reinforced by 32 respondents strongly agree out of 51 respondents. This website is also easy to view anytime and anywhere, this is reinforced by 30 respondents strongly agree. This website can also be useful for finding or knowing a location, this is reinforced by 30 respondents who strongly agreed, and 24 respondents who strongly agreed to use this website-based plan in the future.

IV. ACKNOWLEDGEMENT

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REFERENCES


