HEURISTIC EVALUATION ANALYSIS USING THE 10 NIELSEN RULE USABILITY METHOD ON THE KAI ACCESS APPLICATION

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ARTICLE INFO	ABSTRACT
Received: Revised: Approved:	*KAI Access is the official application owned by PT Kereta Api Indonesia (Persero) for ticket cancellations, changing ticket schedules, purchasing local trains, purchasing train tickets 1 hour before departure, e-boarding passes. Based on the user rating on the Play store, which is 3.3 out of 5 stars. In this study using 10 Nielsen's usability rules, with the aim of analyzing whether the KAI Access application can be said to be good or not. Task Analysis which is classified as efficient enough because the value of the lost ness level is only 0.26651869414146. It was found that from 6 of 10 Jacob Nielsen heuristic evaluations, errors were found to minimize the users memory load, feedback, shortcuts, prevent errors, help and documentation, consistency. The 10 principles of usability that need to be improved in this KAI Access application are the Minimize the users memory load type and the Minimize the users memory load type with the same severity rating 3, namely major with a fixed rating of 2, requiring some effort to fix*
KEYWORDS	KAI Access, 10 Nielsen's Rule Usability

INTRODUCTION

To improve the standard of living of humans to do their work, it is necessary to have activities to achieve various human needs. The activities carried out with these various things aim to achieve the continuity of harmonious and prosperous human life by fulfilling all needs. Everything to achieve it cannot be separated from the movement from one place to another. The transfer is to be more effective and efficient as expected, it is necessary to have adequate means of transportation. Transportation is the transfer of passengers and goods from one place to another (Hadihardaja). Transportation has two important elements, namely movement and the occurrence of displacement of goods and passengers with or without transportation equipment to other places.

The types of transportation are divided into 3 types, namely, land, sea and air transportation. This type of land transportation is a vehicle that can operate and be used across roads or rail roads. This type of land transportation is widely used by the community for various needs for mobilization to go to work, recreation and so on. Train is one of the types of land transportation that has many enthusiasts besides the low accident risk and the price offered is relatively affordable. According to Law Number 23 of 2007 concerning Railways, a train is a railway facility with movable power, either running alone or in combination with other railway facilities, which will or are moving on the rail road related to train travel. The high public interest in using transportation services managed by PT Kereta Api Indonesia (Persero) needs to be balanced with facilities and services to increase passenger satisfaction.

Service quality in the transportation industry is important to increase public trust. PT Kereta Api Indonesia (Persero) to achieve this requires continuous improvement to increase user satisfaction. According (Parasuraman et al.) service quality is influenced by two main factors. The first is the expected service or expected service. Both services are perceived or perceived or perceived service. The assessment criteria are if the perceived service is in accordance with the expected service, then the service quality is perceived to be good or positive. If the perceived service exceeds the expected service, then the service quality is perceived as ideal quality. On the other hand, if the perceived service is worse than the expected service, the service quality is perceived as bad (Tjiptono).

Usability is a factor that affects an application can be said to be good or not. According to (Nielsen) usability as an attribute of the assessment of how easy the application can be used. Good interface design will have an impact on ease of interaction. In addition, it can increase the value in terms of user satisfaction. There are 3 aspects of usability measurement, namely effectiveness, efficiency, and satisfaction (ISO). The basis of usability assessment is the user experience when using the application. The ten components of quality according to Jacob Nielsen are: system status visibility; compatibility between the system and the real world; user control and freedom; consistency and standards; error prevention; acknowledgment instead of remembering; user flexibility and efficiency; aesthetic and minimalist design; help users identify, diagnose, and recover from errors; and help and documentation.

PT. Kereta Api Indonesia (Persero) has launched an official application, namely KAI Access. This application is the official application of KAI which was launched in 2014 which can be easily and free of charge downloaded through the play store with the keyword KAI access. We can see whether the application is good or not from the rating given by the user of the application with a maximum rating of 5.0. This KAI Access application has a rating of 3.3, which can be seen in Figure 1. This shows that the rating for this application is quite low. The rating on the application is a measure of customer satisfaction when using the application service. This study aims to analyze whether the KAI Access application can be said to be good or not.
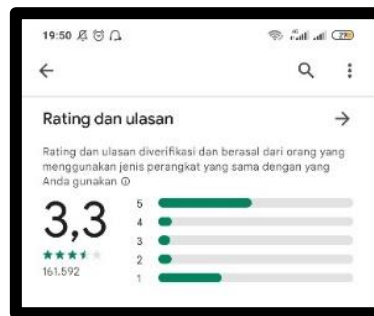

Figure 1. KAI Access Rating

LITERATURE RIVIEW

In his research (Putra et al.) on Usability Evaluation and User Interface Improvement in the KRL Access Application Using the Human Centered Design (HCD) Method and the Post-Study System Usability Questionnaire (PSSUQ). This study uses the method used by Human Centered Design (HCD) and Post-Study System Usability Questionnaire (PSSUQ). The results in this study can find out how effective the design improvement from the initial design on the KRL Access application is different from this study which looks at the user interface.

other applications Edlink Mobile Apps Usability Analysis Using Heuristic Evaluation (Fatihahsari and Darujati). The method used in this study is Heuristic Evaluation of the results in this study. Knowing specific usability conditions and providing recommendations for improvement according to the priority of problem findings is different from research (Dewi et al.) Usability Analysis of Mobile Applications Ordering Prime Taxi Services Using the Webuse Method And Heuristic Evaluation. The method used is Webuse and Heuristic Evaluation. The results obtained show that the overall appearance of the application has a usability level of "GOOD" but there are still usability problems related to content, buttons and navigation so it is necessary to evaluate to increase the usability level.

Usability Analysis of User Interface Design on the Tokopedia Website Using the Heuristics Evaluation Method (Aziza) the method used Heuristics Evaluation Evaluating the TOKOPEDIA website in the interface design aspect. Application of Usability in PENTAS Applications Using the SYSTEM USABILITY SCALE (SUS) Method with the

System Usability Scale (Sus) method (Aziza) the results of the PENTAS application are still in the category of not being good to use and there must be further improvements. In a study entitled Usability Analysis and Improvement of the KAI Access Application with the Usability Testing and Use Questionnaire Methods (Hadi et al.) using the Usability Testing and Use Questionnaire method, it was obtained Knowing how easy it is to use the KAI Access application interface. In these studies the methods used are different, this research uses 10 Nielsen's Rule Usability

RESEARCH METHOD

These parameters according to ISO 9241-11 (ISO) include: Effectiveness, namely Accuracy and completeness of user accuracy in achieving a certain goal and can complete the task. This criterion is measured based on the number of errors that occur when the user uses the application. Efficient, namely the effort or power the user does to achieve certain goals. Usually for this criterion it is measured in units of time. Satisfaction is freedom from discomfort and positive behavior from a product.

The method used in this study is Nielsen's 10 Rules in Usability on the KAI ACCESS application. The basis of the usability assessment is the user experience when using the application. Here are ten components of quality according to by Jakob Nielsen:

1. System State Visibility
   The system should always keep users informed of what is happening, through appropriate feedback in a reasonable time.
2. Match Between System and Real World
   The system should speak the user's language, with words, phrases and concepts that are familiar to the user, not system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.
3. User Control and Freedom
   Users often select system functions by accident and will need a clearly marked "emergency exit" to leave unwanted states without having to go through extended dialogs. Supports undo and redo.
4. Consistency and Standard
   Users don't have to wonder if different words, situations, or actions mean the same thing. Follow platform conventions.
5. Error Prevention
   Even better than a good error message is a careful design that prevents the problem from happening in the first place.
6. Confession Instead of Remembering
   Make objects, actions, and options visible. The user does not have to memorize information from one section of the dialog to another. Instructions for using the system should be visible or easy to retrieve whenever needed.
7. Flexibility and Efficiency of Use

Accelerators invisible to novice users - may often speed up interaction for expert users so that the system can cater to both experienced and inexperienced users. Allow users to customize frequently performed actions

8. Aesthetic and Minimalist Design

   Dialogue should not contain irrelevant or rarely needed information. Each additional unit of information in the dialog competes with the relevant unit of information and reduces its relative visibility.

9. Users Recognize, Diagnose and Recover from Errors

   Error messages should be stated in plain language (no code), pinpoint the problem, and constructively suggest solutions.

10. Help and Documentation

    While it is better if the system can be used without documentation, it may be necessary to provide assistance and documentation. Any such information should be easy to find, focused on the user's task, a list of concrete steps to take, and not too large.

    Loss level formula:

$$LL = \sqrt{\left(\frac{N}{S} - 1\right)^2 + \left(\frac{R}{N} - 1\right)^2}$$

Figure 2. Lostness Level Formula

N = Number of pages
S = Number of steps

R = Ideal number of steps

RESULT AND DISCUSSION

Task Analysis To Determine Or Design Scenarios And Tasks To Be Tested

Task Analysis in using the KAI Access Application in conditions of booking tickets from Yogyakarta to Jakarta where red numbers indicate normal, black numbers indicate errors
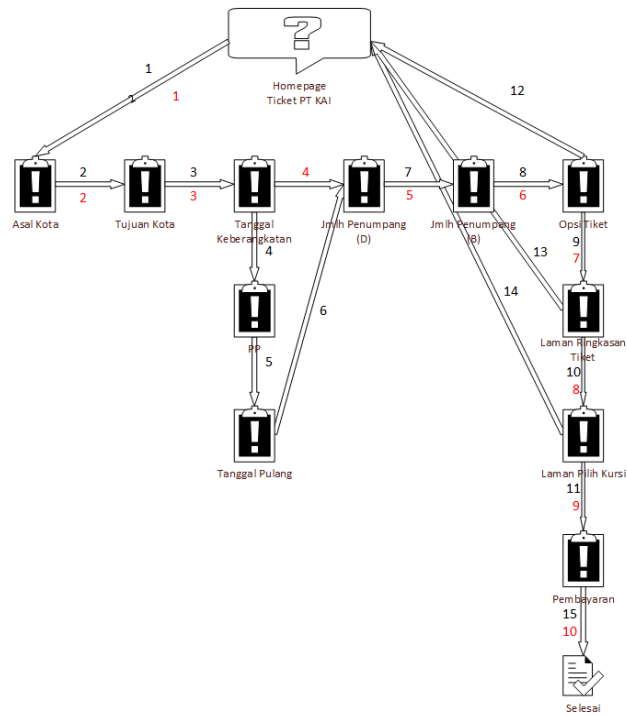
Figure 3. Task Analysis of the KAI Access Application in booking tickets from Yogyakarta to Jakarta

KAI Access application for booking tickets from Yogyakarta to Jakarta
1. Open the App
2. Intercity Trains / Local Trains "Swipe Right/Left"
3. After specifying, then Click Origin
4. Scroll until you find "Yogyakarta"
5. There is an option for Yogyakarta Station "Show All/Tugu Jogja"
6. Select what you want to use in the search
7. Homepage
8. Then set a Goal
9. Scroll until you find "Jakarta"
10. There is an option for Jakarta Station "Show All/Monday Market"
11. Choose what you want to use in the search
12. Homepage
13. Adjust departure date
14. Homepage
15. What Is Round Trip? If yes, swipe the symbol
16. Adjust Return date
17. Homepage
18. Number of Adult Passengers "Only 4 people".
19. Homepage
20. Number of Infant Passengers? "Only 1 Baby"
21. Homepage

22. Click Search "Search for trains and tickets"
23. Train and Ticketing Pages
24. Scroll to desired Train / Using Filter
25. After the Train is selected
26. Ticket Summary Page
27. Click "details" for more details
28. Homepage Summary
29. If you want to add passengers, you have to go back from the first step
30. Choose a seat
31. Select seat page, specify
32. Save
33. Order summary homepage
34. If it feels right then check the policy
35. Pay now
36. Select Payment options
37. Atm
38. Bank BR*
39. Payment Steps
40. Continue, Exit Payment Code
41. To go back click, Back Home
42. To view history, Click Ticket
43. And click the train list
44. Back to Payment Code
45. Done

Lostness From Kai Access Application In Booking Tickets Yogyakarta To Jakarta

In the activity of using the KAI Access application, after the next analysis task, which is to determine the level of Lostness, which is to measure the value of Lostness, conclusions can be drawn using the formula for the level of lostness to be inefficient, already efficient or quite efficient. The following formula for the lostness level is shown in Figure 2. below:

Is known:
Number of pages (N) = 13
Number of steps (S) = 15
The ideal number of steps (R) = 10
So,

$$LL = (-0.1333333333)2 + (0.230769231)2$$
$$= 0.01777777 + 0.053254437$$
$$= 0.0710322147$$
$$= 0.26651869484146$$

Conclusion

Completion of task analysis is efficient enough because the lostness value is only 0.26651869484146

Heuristic Evaluation of the Kai Access application along with the repairs and types of errors to improve the level of usability

In the KAI Access application, the Yogyakarta to Jakarta ticket orderer found that from 6 of 10 Jacob Nielsen's heuristic evaluations, errors were found. Among them are: minimize the users memory load, feedback, shortcuts, prevent errors, help and
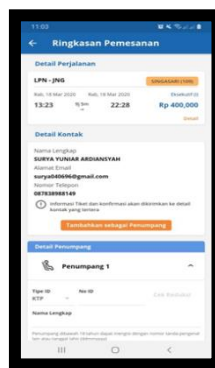
documentation, consistency. Here below is the description:

Figure 4. Minimize the users memory load error type

Ordering KAI Access tickets must include identification including no. ID and name. When canceling or ordering a new ticket, it must be filled again, it cannot automatically fill in the number. Ktp and name of the customer. Improvements that can be made are to improve the system so that by logging in the KAI member access indirectly when the ticket message is automatically filled with the name and number. ID card. This type of usability error is classified as a severity rating error of 2 which is minor with a fixed rating of 1 easy to fix, making the user have to repeat again when already canceling an order, especially a user who does not memorize the number. Ktp so you have to look for kk or ktp.
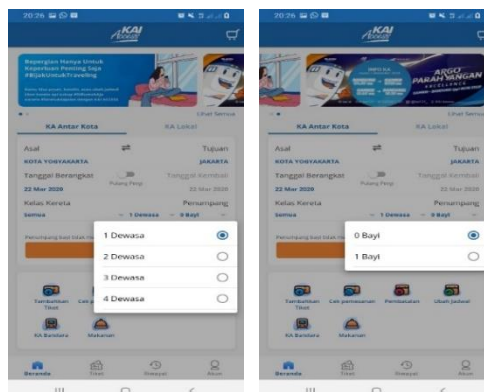
Figure 5. Minimize the users memory load type error

In terms of choosing the number of passengers, you can't choose more than 1 baby passenger, so you have to order again and adult passengers can only book 4 seats. Improvements that can be made Added options for the number of adult and infant passengers. This type of error is classified as a severity rating 3 error, namely a major with a fixed rating of 2 requiring some effort to fix, because you have to order 2 times or
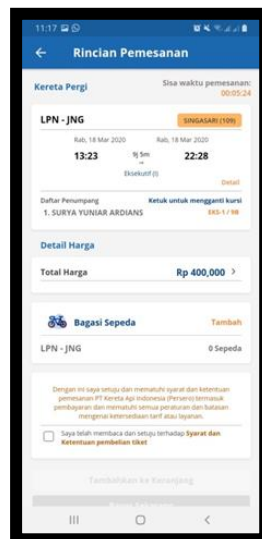
3 times or even more when the number of passengers exceeds the limit.

Figure 6. Feed back type error

When you want to add passengers, you can't add them directly. However, by repeating from the beginning of the message. Improvements that can be given are adding a column for adding passengers. This type of error is classified as a severity rating 3 error, namely a major with a fixed rating of 2 requiring some effort to fix, because it has to be reordered from the beginning.
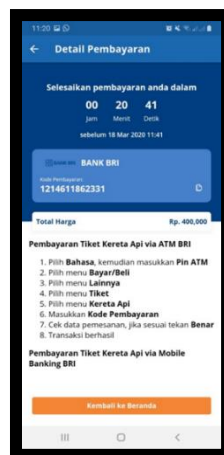
Figure 7. Feedback Type Error and Minimize the users memory load

After making a payment, it is not directly connected to the application, but must be via email for verification and then continue to be applied. Repairs that can be provided do not require verification in the email to make it simpler. This type of error is classified as a severity rating error 2 which is minor with a fixed rating of 1 easy to fix, making the user have to do several steps not in one process.
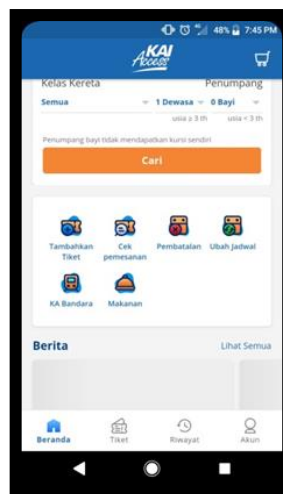

Figure 8. Shortcut Type Error

In the menu options, the initial appearance of the items is less attractive and the differences are not significant, so you have to be careful in choosing which ones to search. Improvements that can be given change the item and color to make the item clearer. This type of error is classified as a severity rating error of 2 which is minor with a fixed rating of 1 easy to fix, there are still errors in choosing the item.
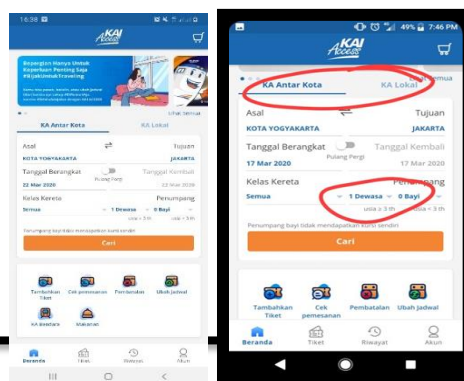
Figure 9. Errors of type Prevent Errors

Prevent errors in ordering tickets for local trains and intercity trains. When there is no significant difference between local trains and intercity trains, users often make mistakes in ordering tickets. Improvements that can be given are given a different color and in the application there is a limit of options on local trains because there is no differentiator with inter-city trains. This type of error is classified as a severity rating error 3, namely a major with a fixed rating of 0 extremely easy to fix, users are often deceived because when localized, between cities can still be selected.
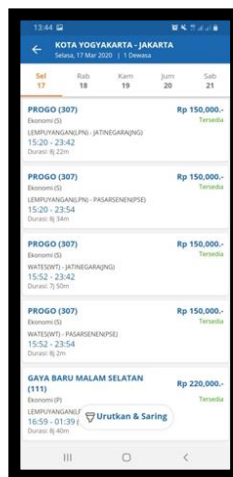

Figure 10. Error Type Help and documentation

There is no recommendation assistance in choosing a train, there is only the name of the train, type and price, it does not display all the options in the train so the user has to scroll to find the desired train. Improvements that can be given by providing a help menu in the form of "searching". This type of error is classified as a severity rating 2 error, which is minor with a fixed rating of 1 easy to fix, people are too tired to scroll through the ticket options given. Because there is no search engine menu.

Figure 11. Consistency Type Error

When exiting the KAI Access application, they are given a yes or no choice and in this application the placement is reversed and positioned to the yes option, if the user is not observant, one clicks out of the application and then is surprised to choose yes, finally having to repeat the order. Improvements that can be made are placing the exit yes on the left and no on the right and the initial positioned points on the no. This type of error is classified as a severity rating error 3, namely a major with a fixed rating of 0 extremely easy to fix, because it is in a hurry or wrong press to cause the application to exit and the marker is directed to the yes menu on the right, not in general, which causes the user to repeat the ticket message.

CONCLUSION

The completion of the task analysis on the KAI Access application for the trip from Yogyakarta to Jakarta shows positive things. In the Task Analysis which is classified as efficient enough because the value of the lostness level is only 0.26651869414146.

In the KAI Access application, the Yogyakarta to Jakarta ticket orderer found that from 6 of 10 Jacob Nielsen's heuristic evaluations, errors were found. Among them are: minimize the users memory load, feedback, shortcuts, prevent errors, help and documentation, consistency.

Of the 10 principles of usability that need to be improved on this KAI Access application, the Minimize the users memory load type and the Minimize the users memory load type with the same severity rating 3, namely major with a fixed rating of 2 require some effort to fix.

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