DESIGN OF UI/UX PROTOTYPE WEBSITE IUSRSTYLE USING METHOD OF USER CENTERED DESIGN

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ABSTRACT

Technological developments have changed the way people shop and interact with clothing products.Conventional clothing stores such as Iusrstyle have experienced several problems with limited prospective buyers getting Iusrstyle information via the internet, the need for UI/UX to find out the needs of owners and prospective buyers. The user centered design (UCD) method was chosen in the UI/UX design process so as to produce an Iusrstyle website design prototype that can be tried on a laptop or Personal Computer (PC). The Iusrstyle website design prototype needs to be evaluated and recommended using usability testing and blackbox testing. The results of the evaluation of usability testing by distributing questionnaires to 25 respondents showed that the percentage index interval was at 80% - 100%, namely the presentation index of 83.68% which strongly agreed regarding the prototype design of the Iusrstyle website, besides that the results of blackbox testing showed that all pages had been successful and as expected. The results of usability testing and blackbox testing that have been carried out can be said to provide solutions in overcoming the constraints felt by users from the final evaluation that went well.

Keywords : *UI/UX, User Interface, User Experience, User Centered Design, dan Figma.*

PREFACE

Since the COVID-19 pandemic, Deputy Minister Angela said that people's behavior has become more technology-oriented. In 2021, there was a big increase in Indonesia, as many as 52% of people used shopping applications [1]. The implementation of an e-commerce website for clothing stores will be something that supports buying and selling activities between producers and consumers in the current digital era.

Iusrstyle uses the WhatsApp platform as a medium for sales. Problems often occur when customers ask one by one and repeatedly regarding product discounts, product availability and product estimates to customers. Iusrstyle serves 10-15 people a day and often asks the same thing, so this sometimes hinders the buying and selling process. The owner of Iusrstyle plans to create a website from the problems that have

been experienced in the hope of helping customers obtain information related to the products sold by Iusrstyle.

The website can be said to be good when viewed from the User Interface (UI) and User Experience (UX) aspects, such as the website displays navigation that is clearly visible and provides

comfort for website visitors. User interface (UI) is when the user and the system can interact with each other through commands such as entering data, while user experience (UX) is the user experience that includes the user's reactions, perceptions, behaviors, emotions, and thoughts when using the system [2].

UI/UX design has several methods including Design Thinking, User Centered Design (UCD), Human Centered Design (HCD), and Activity Centered Design (ACD). The User Centered Design (UCD) method is used to design a website-based e-commerce system. The system developed will produce a user-friendly software product by using this method to optimize the desire for a product that will be given by the end user [3]. The purpose of using the UCD method is to produce a product with a high usability value [4].

Previous research related to UCD, namely the Design and Evaluation of the Responsive User Interface of the MyITS Connect Job Marketplace Module Using the User- Centered Design Methodology [5] shows the design of the MyITS Connect application user interface using the User Centered Design methodology by conducting Usability Evaluation and Heuristic Evaluation tests. Usability Evaluation resulted in an increase in the success rate of the evaluation of the job seeker role from 94.76% to 99.52%, for the company role from 92.42% to 98.15%. The average decrease in the completion time of the test for the job seeker role from 344 seconds to 278 seconds, and for the company role from 272 seconds to 129 seconds. Heuristic Evaluation resulted in the design of the MyITS connect application user interface that met the heuristic principle, then in the UI/UX Analysis for the Ginger Store Website Design with the User Centered Design (UCD) Method [6] showed that the results of this study obtained the results of the Ginger Store website user interface design based on user needs in the form of a prototype using the figma application so that it can be used as a consideration if the Ginger Store owner wants to develop a website. The final evaluation results of the design using questionnaires and blackbox testing, for the results of the questionnaire using usability testing obtained 87% of users strongly agree and the results of the blackbox testing carried out on all website menu buttons were all successful as expected, then in the Design and Construction of the Thesis Guidance Application Using the User Centered Design (UCD) Method [7] shows that the User Centered Design Method used in the Design and Construction of the Thesis Guidance Application produces an application that has been built that provides convenience for students in carrying out thesis guidance activities with their respective supervisors. Based on the background description that has been described above, a study was conducted to design UI/UX using the User Centered Design (UCD) method on the Iusrstyle website.

RESEARCH METHODS

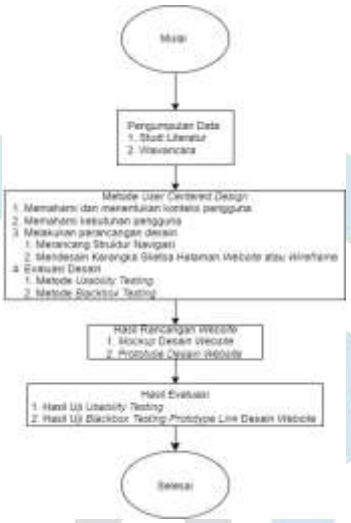


Figure 1. Research Flow
[source : Yoseu Herawati, 2023]

1. Data collection

The interview was conducted with the owner of Iusrstyle. The interview was conducted on April 10, 2023, at South Tangerang City, Pamulang District, Banten Province, 15418.

Table 1. Interview Questions

No	Questions
1	What is the owner's motivation for building Iusrstyle?
2	In what year was Iusrstyle established?
3	Is Iusrstyle's address listed on Google Maps?
4	What products does Iusrstyle sell?
5	What is the price range for the products sold by Iusrstyle?
6	Who usually buys Iusrstyle products?
7	How do you market and sell Iusrstyle products to buyers?
8	What obstacles are experienced when selling products in the current way?
9	What kind of website do you want?
10	What do you want to display on the website that will be created?

2. Method of *User Centered Design*

2. 1 Understand and determine user context

The stage of understanding and determining the user context is included in the identification stage, this identification stage is obtained from the results of previous interviews. This identification is related to the interview questions in table 1 numbers 1-5 and question number 10 to find out details about Iusrstyle and what products are sold and website information, question number 6 to find out users who use the website, and questionsnumber 7-9 to find out the purpose of the website being designed.

2. 2 Understanding user needs

The stage of understanding user needs is analyzing user needs to the owner of Iusrstyle and the functions on each page of the website that will be displayed. The pages displayed include the login page to enter the website if you already have an account, the sign up page for those who do not have an account so they are required to register first, the products page to find out what products are sold and the prices listed on the Iusrstyle website, the chart page to put products into the user's cart so that it is easy when they want to make a product purchase, the about page to find out the history of the store and the vision and mission of Iusrstyle.

2. 3 Doing Design Planning

The process of designing the Iusrstyle website design is divided into two stages, including the stage of designing the navigation structure and the stage of designing the sketch framework of each website page layout or wireframe. The first stage is designing the navigation structure.

Figure2. Navigation Structure of Website Iusrstyle
[source : Yoseu Herawati, 2023]

The second stage is to design a sketch framework for each website page layout or wireframe. There are six wireframes designed according to each page in the navigation structure, including the home page, products page, about page, login page, sign up page, chart page.

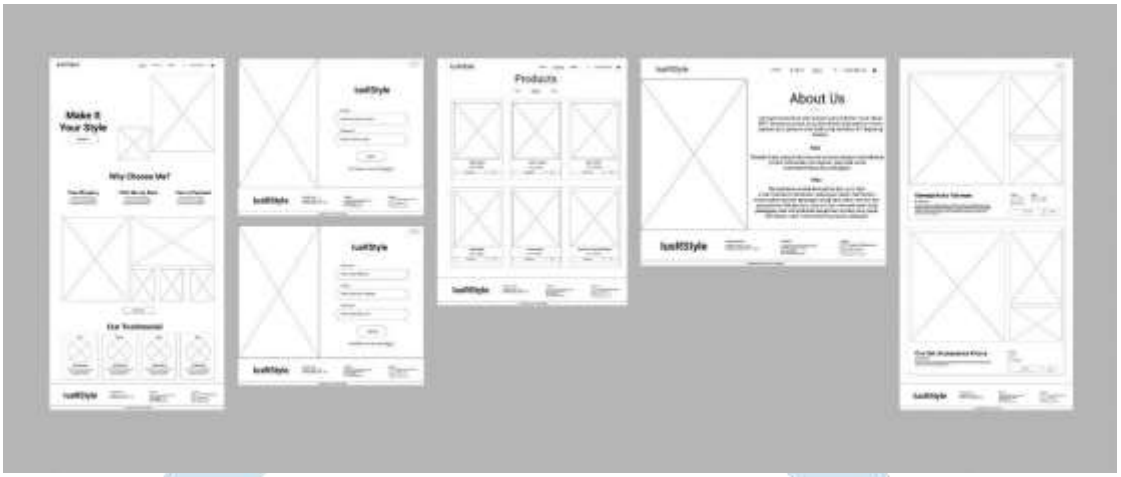


Figure 3. *Wireframe Website* Iusrstyle
[source : Yoseu Herawati, 2023]

2. 4 Design Evaluation

The usability testing method is carried out by giving 10 questions to respondents via Google Form who have seen the design and tried the design prototype. The blackbox testing method is carried out by checking the design prototype on the hyperlink between pages with existing features in the Figma application whether it works well and then the truth table is used as a table of the results of the check where there are valid and invalid statements related to the test results.

RESULTS AND DISCUSSION

1. Understand and determine user context

The interview results in table 1 with the question of who usually buys Iusrstyle products and the obstacles experienced when selling products in the current way, it was concluded that for the owner's side, which currently can only reach buyers in the area around the store, so it is hoped that in the future Iusrstyle can reach buyers outside the area as buyers or resellers of Iusrstyle products, and the obstacles encountered are often that the owner is late in receiving message notifications for several minutes or hours via online chats such as WhatsApp asking about products so that this makes prospective buyers not reply back in the online chat. These obstacles hinder the decision of prospective buyers when they want to buy Iusrstyle products. The interview results in table 1 with the question of how the owner sells their products and the obstacles faced when selling products to prospective buyers currently concluded that for the user side, so far the process of selling products carried out by Iusrstyle can only be done conventionally with prospective buyers buying products directly to the place, or through online chat applications such as WhatsApp. The buying and selling process in this way has obstacles in the form of slow responses from the owner of Iusrstyle and the difficulty of prospective buyers in getting information regarding product availability, size, and color.

2. Understanding User Needs

The stage of understanding user needs from the owner's side and the prospective buyer's side is related to the functionality of the website design display according to user needs. These user needs are home pages, login, sign up, products, and charts.

3. Website Design Results 3.

1 *Mockup of Website* Design

The Iusrstyle *website design of mockup uses a color scheme that can be seen below.*

Figure 4. Scheme of Colour (Yoseu Herawati, 2023) [sumber : Yoseu Herawati, 2023]

Figure 5. Font Roboto [s : Yoseu Herawati, 2023]

The font selection used is "Roboto" chosen because the font design is simple and clear when implemented into the website design. Mockups of the home page design, login, sign up, products, about, and chart of the Iusrstyle website are displayed in the form of a laptop or PC.

Figure 6. *Mockup of* Iusrstyle *Website*
[source : Yoseu Herawati, 2023]

3. 2 Prototype of Website Design

The prototype stage of this website design is made from the design mockup that has been made. The creation of the prototype and design mockup is made using figma software, the prototype is made so that users can try the design that has been made by accessing the navigation, buttons, and hyperlinks of the pages on the Iusrstyle website. The prototype can be accessed via the following link: https://bit.ly/3NRJaS2.

4. Evaluation Results

Usability Testing stage by distributing questionnaires to respondents using the Likert scale method for calculating the questionnaire and the results of the respondents collected as many as 25 respondent answers. The results obtained from the total calculation using the Likert score are 1046. The determination of the maximum score obtained is 1250 where the calculation multiplies the largest Likert score, the number of respondents, and the number of questions.

Maximum score = (5 x number of respondents) x number of questions Maximum score = (5 x 25) x 10

Maximum score = 1250

The results of the total score above 1250 will be recalculated to obtain the final result, namely the percentage index. The percentage index is obtained from the calculation:

$$\text{percentage } (\%) = \frac{ttoottmmtt \text{ of } sscore}{ssc_{oooo}e \text{ of } mmmmmss} \times 100$$

$$\text{percentage } (\%) = \frac{1046}{1250} \times 100$$

Presentase(%) = 83, 68 % (Strongly agree)

The calculation results above can be concluded that respondents strongly agree with the percentage index results of 83.68% according to table 3. 3 percentage index intervals on the Iusrstyle website design that have met all the information needs of the owners and prospective buyers of Iusrstyle.

The Blackbox testing stage was carried out on a prototype that had been created using figma with prototype links for the home page, products, about, login, sign up, and chart. The results of the blackbox testing can be seen in table 4.2, table 4.3, table 4.4, table 4.5, table 4.6, and table 4.7.

Table 2. Blackbox Testing Results Home Page

No	Test Scenario	Test Case	Expected results	Test Results
1	Access the products page	Clicking on products navigation	Displaying the products page	Successfully displayed the products page
2	Access the page of about	Clicking on the navigation of about	Displaying the page of about	Successfully displayed the page of *about*
3	Access the page login/sign up	Clicking on navigation of *login/sign up*	Displaying page of *login*	Successfully displayed the page of *login*
4	Accessing the page of *chart*	Clicking on the icon of *chart*	Displaying page of *chart*	Successfully displayed the page of *chart*

Table 3. The Test Result of *Blackbox Testing of Login Page*

No	Test Scenario	Test Case	Expected results	Test Results
1	Access the home page	Clicking on the navigation of *back*	Displaying the *home page*	Successfully displayed the *home page*
2	Access the page of *sign up*	Clicking on the navigation of *sign up*	Displaying the page of *sign up*	Successfully displayed the page of *sign up*

Table 4. Test Result of *Blackbox Testing* of *Sign Up* Page

No	Test Scenario	Test Case	Expected results	Test Results
1	Access the home page	Clicking on the navigation of *back*	Displaying the *home page*	Successfully displayed the *home page*
2	Access the page of l*ogin*	Clicking on the navigation of *sign in*	Displaying the page of *login*	Successfully displayed the page of *login*

Table 5. Test Result of *Blackbox Testing* of *Products Page*

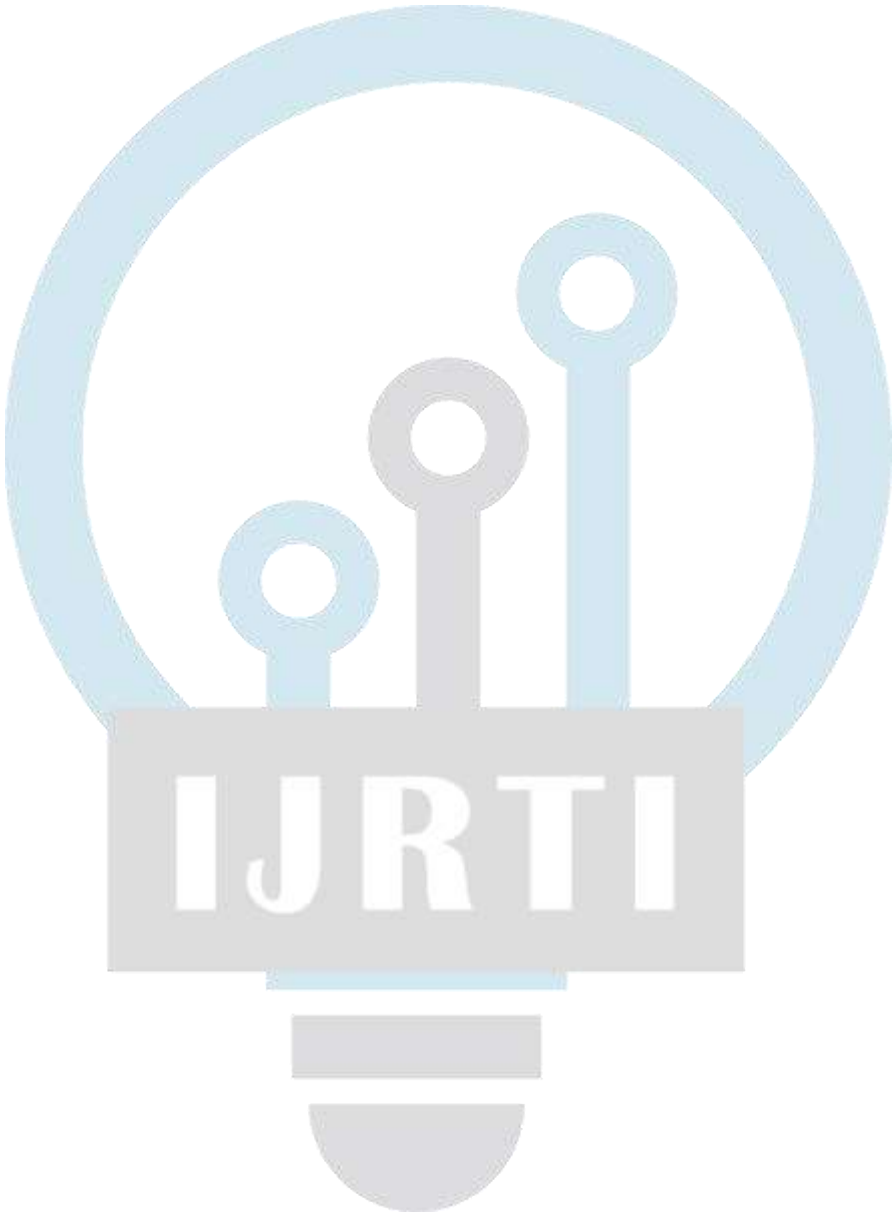
No	Test Scenario	Test Case	Expected results	Test Results
1	Access the home page	Clicking on the navigation of *home*	Displaying the *home page*	Successfully displayed the *home page*
2	Access the page of *about*	Clicking on the navigation of *about*	Displaying the page of *about*	Successfully displayed the page of *about*
4	Access the page of *login/sign up*	Clicking on the navigation of *login/sign up*	Displaying the page of *login*	Successfully displayed the page of *login*
5	Access the page of *chart*	Clicking on the icon of *chart*	Displaying the page of *chart*	Successfully displayed the page of *chart*
6	Access the page of *women*	Clicking on the navigation of *women*	Displaying the page of *women*	Successfully displayed the page of *women*

Table 6. Test Result of *Blackbox Testing* of *About Page*

No	Test Scenario	Test Case	Expected results	Test Results
1	Access the home page	Clicking on the navigation of *home*	Displaying the *home page*	Successfully displayed the *home page*
2	Access the page of *products*	Clicking on the navigation of *products*	Displaying the page of *products*	Successfully displayed the page of *products*
4	Access the page of *login/sign up*	Clicking on the navigation of *login/sign up*	Displaying the page of *login*	Successfully displayed the page of *login*
5	Access the page of *chart*	Clicking on the icon of *chart*	Displaying the page of *chart*	Successfully displayed the page *of chart*

Table 7. Test Result of *Blackbox Testing* of *Chart Page*

No	Test Scenario	Test Case	Expected results	Test Results
1	Access the home page	Clicking on the navigation of *back*	Displaying the *home page*	Successfully displayed the *home page*



Conclusion

The design of the user interface (UI) and user experience (UX) with the user centered design (UCD) method produces a design prototype of the Iusrstyle website. The design prototype of the Iusrstyle website that has been created contains a home page, login, sign up, products, about, chart so that it provides convenience for users and Iusrstyle owners in the process of buying and selling products based on the results of the usability testing and blackbox testing evaluations. The design prototype that has been created can be tried via a laptop or Personal Computer (PC) by accessing the url address: https://bit.ly/3NRJaS2. The results of the usability testing evaluation by distributing questionnaires to 25 respondents showed that the percentage index interval was at 80% - 100%, namely a presentation index of 83.68% which strongly agreed regarding the design prototype of the Iusrstyle website, in addition, the results of blackbox testing showed that all pages had been successful and as expected. The results of the usability testing and blackbox testing that have been carried out can be said to provide solutions in overcoming the obstacles felt by users from the final evaluation that went well.

Suggestion

This research can still be developed using other UI/UX design methods such as Design Thinking, Human Centered Design (HCD), and Activity Centered Design (ACD). The final evaluation stage in the design can also be added to the number of samples taken so that the information obtained later is more valid in meeting user needs regarding what needs to be fixed so that features can be added.

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