

Analysis and Design of Online Based Plastic Sales Information System with User Acceptance Testing Method

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Abstract

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The purpose of this research is to design applications that can be directly used by customers to help speed up the selection of plastic products according to the criteria and desires of customers and to expand the sales area of plastic shops that have not been reached. The method used in this study is UAT is one of the most innovative methodologies to prevent IT project failure. The UAT process begins by providing documentation of business requirements, then continues with business processes (workflows) or scenarios and finally tests using data. Effectiveness in testing is needed in the development of an application or information system so that the product can arrive at the user on time and according to the user's needs. Tests carried out on the built system are divided into two mechanism tests, namely alpha testing using the black box method and beta testing using a Likert scale. The results obtained from this research are that this e-commerce website can be used directly by customers to help speed up the selection of rice products according to the criteria and wishes of customers, this online sales website is also very helpful in marketing plastic products in a wide area coverage and test results with user acceptance testing getting an average result of 94.67% it can be concluded that E-Commerce is made for UD customers. Various Plastics are in accordance with user needs.

I. INTRODUCTION

Improvements in human resources have made rapid developments in technology and information. The development of technology and information accompanied by the development of the internet mutually support each other so as to create an information technology concept. Technological developments are currently growing rapidly, almost all aspects of human activity and life depend on technology to facilitate the activities carried out. Whereas in the business sector, technological developments play an important role and have a very significant impact on the systems that work in this business sector, especially in sales, data processing and improving services provided to customers [1]. Today, there are still many companies or trading businesses that have not used technology, causing limitations in the marketing and sales of the company's own products, because marketing does not cover many areas and is limited. One way to increase the area of marketing is by using internet technology which can cover many areas. At UD. Aneka Plastik, the absence of online marketing makes it difficult for buyers to see directly the available plastic products apart from having to come to UD. Aneka Plastics, and because they haven't used online marketing marketing carried out by UD. Aneka Plastik does not yet cover a large enough area.

With internet technology, people from many areas can connect easily and quickly. The Internet itself is a collection of global networks that are connected to each other for the means of disseminating information with a set of protocols. The internet is also a network between people and information so that it is very possible for the internet to be used as a medium for doing business and running a business. The use of internet technology is not only limited to the utilization and dissemination of information between people, but can also be used as a medium or means to carry out a trade transaction called e-commerce. E-commerce is the distribution, buying, selling, marketing of goods and services through electronic systems such as the internet or television, www, or electronic data exchange networks, automated inventory management systems, and automated data collection systems. Based on the references obtained, E-Commerce is electronic commerce, is a collection of technologies

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and businesses that connect companies or individuals as consumers to carry out electronic transactions, exchange of goods, and exchange of information on the internet or television, or other computer networks [2].

UAT is one of the most innovative methodologies to prevent IT project failures. The UAT process begins by providing documentation of business requirements, then continues with business processes (workflows) or scenarios and finally tests using data. Effectiveness in testing is needed in the development of an application or information system so that the product can arrive at the user on time and according to the user's needs. Tests carried out on the built system are divided into two mechanism tests, namely alpha testing using the black box method and beta testing using a Likert scale. Black box testing is focused on system testing activities that are built to see how far each function in the application has been running correctly, as expected and free of errors. Apart from testing the application from a functional point of view, system testing is also carried out by users who will take advantage of the application. Beta testing to determine acceptance of the use of the application is carried out with a questionnaire to obtain conclusions about the acceptance of the use of the application from the user's side [3]. Based on the background contained above, a research was carried out "Analysis And Design Of Online Based Plastic Sales Information System Using User Acceptance Testing Method".

II. METHODS

2.1 Plastics

The definition of a plastic is a type of macromolecule that is formed by a polymerization process. Polymerization is the process of combining several simple molecules (monomers) through chemical processes to become large molecules (polymers or macromolecules) [4].

2.2 User Acceptance Testing

UAT is one of the most innovative methodologies to prevent IT project failures [3].

2.3 E-Commerce

E-commerce is the distribution, purchase, sale, marketing of goods and services through electronic systems such as the internet or television, www, or electronic data exchange networks, automated inventory management systems, and automated data collection systems [2].

2.4 Sales

Sales is a system of the company's main activities for trading goods and services that the company produces [5].

2.5 Databases

A database is a collection of connected data (interrelated data) that are stored together on a medium, without looking at each other or without the need for a data framework (controlled redundancy) in a certain way so that it is easy to use or reproduced [6].

2.6 Hypertext Preprocessor

PHP is a programming language for creating website-based applications, PHP is also often known as a hypertext preprocessor which is a high-level scripting language that is installed in HTML documents [7].

2.7 Frameworks

In simple terms, it can be explained that a framework is a collection of functions (libraries) so that a programmer no longer needs to create functions from scratch and is usually called a collection of libraries [8].

2.8 MySQL

MySQL is a useful system for managing collections of data structures (databases), which include both the creation process and the database management process [9].

2.9 PHPMyAdmin

PhpMyAdmin is an application that can be used to create databases, users, modify tables, and send databases quickly and easily without having to use SQL commands [10].

2.10 Visual Studio Code

Visual studio is an IDE (integrated development environment) that you can use to develop windows applications [11].

2.11 XAMPP

XAMPP is an open source software which is the development of LAMP (Linux, Apache, MySQL, PHP and Perl) [12].

2.12 UML (Unified Modeling Language)

UML stands for (unified modeling language) which means standard modeling language. UML has syntax and semantics [13].

2.13 Black Box Testing

Black box testing is a type of testing that treats software whose internal performance is unknown. So that the testers view the software as like a "Black Box" which is not important to see the contents, but enough to be recognized by the testing process on the outside [14].

III. RESULTS

3.1 Use Case Diagram

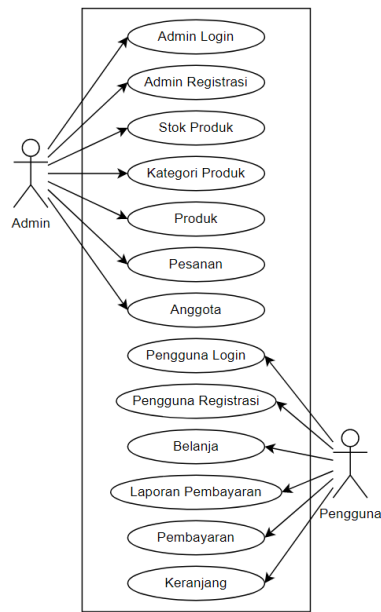


Fig. 1 Use case Diagram

3.2 Activity Diagram

1. Activity Diagram Login

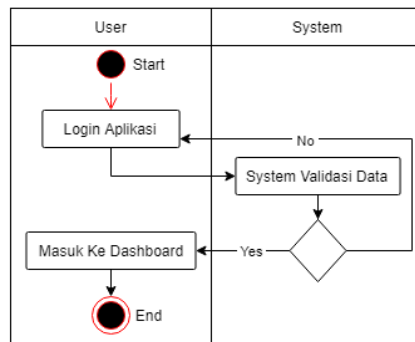


Fig. 2 Activity Diagram Login

2. Activity Diagram Registrasi

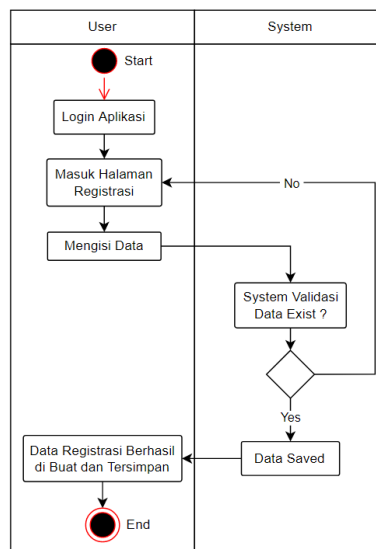


Fig. 3 Activity Diagram Registrasi

3. Purchase Activity Diagram

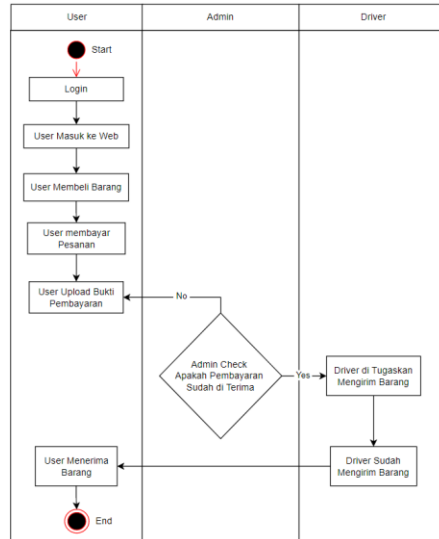


Fig. 4 Purchase Activity Diagram

3.3 Program View

1. Login Page

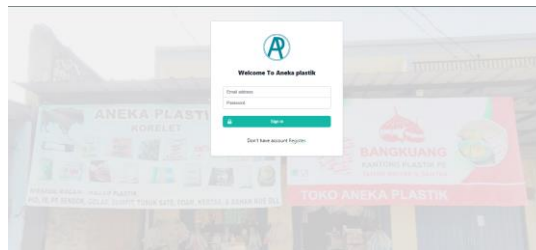


Fig. 5 Display of the Login Page

The login page is the page to enter the main page by entering the user's email and password.

2. Main User Page



Fig. 6 Display of the User Main Page

The user's main page is the initial page when the user successfully logs in.

3. Product List page

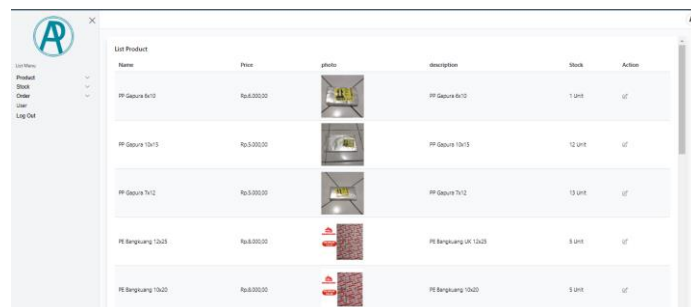


Fig. 7 Product List Page Display

The product list page is a page for changing and adding products.

4. Shop page

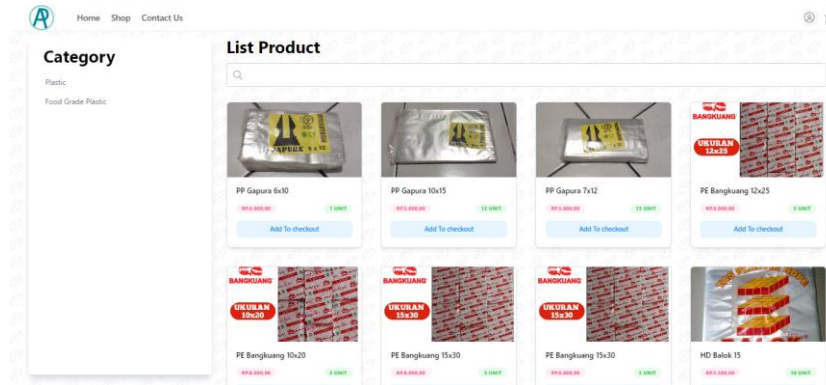


Fig. 8 Shop page display

The shop page is a page for shopping for the product you want.

3.4 System Testing Using the User Acceptance Testing (UAT) Method

Testing was carried out by giving 10 questions to 10 respondents to find out responses to the system to be implemented. Answers can be selected from the following levels:

TABLE 1
List of User Acceptance Testing Respondent Profiles

No	Name	Position
1	Darmadi	owner
2	Sherly	Admin
3	Gugun	Warehouse Section
4	Luky	Delivery Department
5	Desi	Warehouse Employee
6	Tian	Warehouse Employee
7	Tedi	customers
8	Riki	customers
9	Robi	customers
10	Upung	customers

TABLE 2
User Acceptance Testing answer choices

No	Answer Choices	Information
1	A	Strongly agree
2	B	Agree
3	C	Neutral
4	D	Don't agree
5	E	Strongly Disagree

TABLE 3
User Acceptance Testing Response Value Weight

No	Answer	Weight
1	Strongly agree	5
2	Agree	4
3	Neutral	3
4	Don't agree	2
5	Strongly Disagree	1

TABLE 4
User Acceptance Testing Questionnaire Question Data

NO	Question	Answer					Percentage				
1	Is the application easy to operate?	6	3	0	1	0	60%	30%	0%	10%	0%
2	Is this application easy to use?	7	2	0	1	0	70%	20%	0%	10%	0%
3	Is the application useful for users?	8	1	1	0	0	80%	10%	10%	0%	0%
4	Does this application suit your needs?	5	4	1	0	0	50%	40%	10%	0%	0%
5	Is the application comfortable to use?	7	1	1	0	1	70%	10%	10%	0%	10%
6	Is the use of the menu or menu application features easy to use?	6	2	1	1	0	60%	20%	10%	10%	0%
7	Is the menu in the application complete enough?	7	2	1	0	0	70%	20%	10%	0%	0%
8	Are the results displayed by the application according to your needs / desires?	8	0	2	0	0	80%	0%	20%	0%	0%
9	Is the information provided by the application easy to understand?	8	0	1	0	1	80%	0%	10%	0%	10%
10	Overall is the use of this application satisfactory? Is the application easy to operate?	8	0	1	0	1	80%	0%	10%	0%	10%

TABLE 5
Weight Value Answer User Acceptance Testing

NO	Question	Score					Total
		A x 5	B x 4	C x 3	D x 2	E x 1	
1	Is the application easy to operate?	30	12	0	2	0	44
2	Is this application easy to use?	35	8	0	2	0	45
3	Is the application useful for users?	40	4	3	0	0	47
4	Does this application suit your needs?	25	16	3	0	0	44
5	Is the application comfortable to use?	35	4	3	0	1	43
6	Is the use of the menu or menu application features easy to use?	30	8	3	2	0	43
7	Is the menu in the application complete enough?	35	8	3	0	0	46
8	Are the results displayed by the application according to your needs / desires?	40	0	6	0	0	46
9	Is the information provided by the application easy to understand?	40	0	3	0	1	44
10	Overall is the use of this application satisfactory?	40	0	3	0	1	44

1. Analysis of the first question as follows: From the table above it can be seen that the total score of the 10 respondents for the first question is 44. The average value is $44/10 = 4.4$. The percentage value is $4.4/5 \times 100 = 88\%$.
2. Analysis of the second question is as follows: From the table above it can be seen that the total score of 10 respondents for the first question is 45. The average value is $45/10 = 4.5$. The percentage value is $4.5/5 \times 100 = 90\%$.
3. Analysis of the third question as follows: From the table above it can be seen that the total value of the 10 respondents for the first question is 47. The average value is $47/10 = 4.7$. The percentage value is $4.7/5 \times 100 = 94\%$.
4. Analysis of the fourth question as follows: From the table above it can be seen that the total score of the 10 respondents for the first question is 44. The average value is $44/10 = 4.4$. The percentage value is $4.4/5 \times 100 = 88\%$.
5. Analysis of the fifth question as follows: From the table above it can be seen that the total score of the 10 respondents for the first question is 43. The average value is $43/10 = 4.3$. The percentage value is $4.3/5 \times 100 = 86\%$.
6. Analysis of the sixth question as follows: From the table above it can be seen that the total score of 10 respondents for the first question is 43. The average value is $43/10 = 4.3$. The percentage value is $4.3/5 \times 100 = 86\%$.
7. Analysis of the seventh question as follows: From the table above it can be seen that the total score of the 10 respondents for the first question is 46. The average value is $46/10 = 4.6$. The percentage value is $4.6/5 \times 100 = 92\%$.
8. Analysis of the eighth question is as follows: From the table above it can be seen that the total score of the 10 respondents for the first question is 46. The average value is $46/10 = 4.6$. The percentage value is $4.6/5 \times 100 = 92\%$.

9. Analysis of the ninth question as follows: From the table above it can be seen that the total score of 10 respondents for the first question is 44. The average value is $44/10 = 4.4$. The percentage value is $4.4/5 \times 100 = 88\%$.
10. The analysis of the tenth question is as follows: From the table above it can be seen that the total score of the 10 respondents for the first question is 44. The average value is $44/10 = 4.4$. The percentage value is $4.4/5 \times 100 = 88\%$.

TABLE 6
 User Acceptance Testing Average Value

Percentage	Question
1	88%
2	90%
3	94%
4	88%
5	86%
6	86%
7	92%
8	92%
9	88%
10	88%
Total	89,2%

From the data above, it can be concluded that the sales information system for online-based plastic sales using the User Acceptance Testing method is in accordance with user needs.

3.5 BlackBox Testing

TABLE 7
 Result BlackBox Testing

No	Page	Testing	Expected results	Test result
1	Sign In	Sign In	The system can login with the correct email and password	Valid (As desired)
2	Main User	Main User	The system can display the user's main page	Valid (As desired)
3	Product List	Product List	The system can display the product list page	Valid (As desired)
4	shop	shop	The system can display the shop page	Valid (As desired)
5	Confirm Order	Confirm Order	The system can display the confirm order page	Valid (As desired)
6	List of Stocks	List of Stocks	The system can display the stock list page	Valid (As desired)
7	List Categories	List Categories	The system can display the product category list page	Valid (As desired)
8	Report Order Finish	Report Order Finish	The system can display the report order finish page	Valid (As desired)

IV. CONCLUSIONS

Based on the results obtained in this writing, the following conclusions are obtained:

1. The created e-commerce website can assist customers in speeding up the selection of plastic products according to their criteria and desires.
2. The e-commerce website created can help UD. Aneka Plastik in marketing plastic products to a wider area.

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