

## Development of a Website-Based Rubber Tender System for Cooperatives Tanjung Telang Village

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### ABSTRACT

*The development of technology in today's modern era is progressing very rapidly, where everyone can find various technologies in various fields around human life, one of which is information technology. The existence of information technology can simplify and speed up data processing, information technology that is often used by an agency or organization is information system technology. Tanjung Telang Village Cooperative is a village engaged in processing and selling rubber residents. Currently, the promotional process carried out by the Village Cooperative only uses via telephone, resulting in very limited competition for the sale of rubber residents. The purpose of this research is to build a website-based rubber tender system that is expected to be more efficient and transparent to residents. This research uses descriptive quantitative and uses User Centered Design (UCD) system development. And the results obtained in this research are the creation of an online-based tender system that can be used by the Tanjung Telang Village Cooperative in the auction process to prospective buyers in the South Sumatra region.*

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### INTRODUCTION

Technological development is an inevitable phenomenon in human life. Technology has changed the way we live, work and interact with each other.

In a general sense, technological development refers to advances in science and engineering that result in new discoveries, better applications, and continued progress.

Nowadays, humans use information technology to perform various tasks. Information can be produced according to demands and decisions can be made quickly using appropriate information technology. For the rapid production and exchange of information for business strategy applications, such as marketing, sales, and customer support, information systems must be used. Like wise for rent. It is possible to benefit from the rapid growth of information systems (Yustiana Indra, 2023).

Before the existence of social media and digital technology as it is today, process adequate selection of service providers difficult for project owners. This matter due to lack of references and service provider information.

In previous research, especially in the Prabumulih city area, similar research was carried out by Tolip Fisika with the title Design and Development of a Jungai Village Rubber Tender Information System using the waterfall method. In that research there were several similarities and differences. The similarities in this research include: building a web-based system and using the code igniter framework. Meanwhile, the differences between this research and previous research are in the objects, design and programming language used.

Tanjung Telang Village Cooperative is a village engaged in rubber processing. The village cooperative is located on Tanjung Telang street in West Prabumulih. The rubber tender system is a system where several business units bid on the price of rubber and the highest bid is the winner of the auction or tender and sale of goods open to the public with written and / or oral price offers increasing or decreasing to reach the highest price, which is preceded by an auction announcement.

Cooperatives are service institutions that carry out an activity or business and provide services

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to the community with the main objective being to improve the welfare of members in particular and society in general as well as contributing to building a national economic order in order to create an advanced, just and prosperous society based on Pancasila and the 1945 Constitution (UUD 1945). Law No. 25 of 1992 article 3) (Silawati Samosir, 2022).

The auction system is one way to create a competitive market through certain rules and transaction systems in order to form the highest price transparently. The auction system is one of the marketing systems chosen by rubber farmers to sell their products with a number of considerations, namely 1) Nature of the Buyer, 2) Nature of the Product, 3) Nature of Competitors and 4) Nature of Marketing Intermediaries. Generally, the auction system is divided into two, namely open auctions and closed auctions. An open auction means that commodity prices are offered in front of bidders, while a closed auction means that commodity price offers are made by filling out forms or envelopes. The commodity being auctioned belongs to the rubber farmers. This auction system has three objectives to first provide greater added value for rubber farmers as cooperative members compared to rubber sellers outside the cooperative. Second, the welfare of Tanjung Telang Village cooperative members. Third, to encourage rural economic growth (Suryawan Agus, 2022).

Sales systems really make it easier and help people in finding and processing information, for example a sales information system, this is a procedure that implements, designs, records, calculates, creates documents, and sales information for the needs of management and other interested parties, from from the start of a sales order until the transaction is executed. The Sales Information System is a Business Information Sub System, other Business Sub Systems can be marketing, human resources, accounting finance and manufacturing production (Selay et al., 2023).

Sales is one of the most important parts of a company which is very influential in various aspects (Alfonsius et al., 2023).

Sales made on the website can be accessed by anyone who has an internet connection so sales transactions are also more flexible, unlike the traditional method of having to meet the seller first (Ismayanti, 2024).

The Tanjung Telang Village Cooperative in West Prabumulih Sub-district, Prabumulih City, was chosen because it has a Rubber Auction Place (TPK) reaching out to surrounding villages. The TPK management consists of rubber farmers and people from prabik. Rubber sap is one of the main sources of income for the Tanjung Telang Village Community.

The auction system carried out by the Village Cooperative is still very conventional, where the current auction system uses telephone media and has not been computerized. So that in terms of recording and processing reports it is not efficient and optimal.

## RESEARCH METHOD

Qualitative descriptive research is the type of research used by the author in preparing this research (Prastowo et al., 2023). This research uses a case study approach.

Research method is a systematic investigation to increase a certain amount of knowledge, it is also a systematic and organized effort to investigate certain problems that require answers. Basically, it is a scientific way to get data with specific purposes and uses. In this study the authors used a qualitative descriptive method, namely information data in the form of verbal sentences not in the form of numerical symbols or numbers (Sugiono, 2020).

### a. Data Type

#### 1. Qualitative Data

Qualitative data is data that is in a form other than numbers. Qualitative data can be collected by interviews, document analysis, observation, pictures or video recording.

Qualitative research is research that is descriptive and analytical in nature. Descriptive in qualitative research means describing and describing events, the phenomena and social situations studied (Waruwu Marinu, 2023).

#### 2. Quantitative Data

Quantitative data is data in the form of numbers or numbers, quantitative data is usually used as the basis for any statistical problems obtained from mathematical calculation techniques.

By conducting a quantitative analysis that integrates aspects of verbal and nonverbal communication in business negotiations, this research aims to provide a comprehensive understanding of how these types of communication interact and influence negotiation success, offering valuable insights for negotiators and business professionals (Rakhmaniar, 2024).

### b. Data Source

Data based on how it is obtained can be divided into two, namely:

#### 1. Primary Data

Primary data is data that refers to information obtained from first hand by the researcher relating to the variables of interest for specific objectives of the study (Mawaddah Warahmah, 2023).

#### 2. Secondary Data

Secondary data is data obtained from other existing sources, in the form of documents, where the author does not get it directly from the object under study.

In this study the authors used all of the above data sources, because there is data obtained directly from the object of research and there is also data obtained from other sources.

Secondary facts are facts obtained indirectly or analyzing data that contains outside activities (Indah et al., 2022).

c. Data Collection Methods

1. Observation

Observation is carried out by making direct observations or reviews at the Tanjung Telang Village Cooperative.

Make direct observations on library to processes running on there, especially in the process of managing data members, book data, transactions and creation ongoing report (Dinar Ismunandar, n.d.).

2. Interview

An interview or interview is a verbal question and answer activity to obtain information information. The form of information received can be recorded in writing or in form audiovisual or audiovisual. Interviews are the main activity of observational research. Interviews can be direct or indirect. Question and answer exchange of information and ideas aimed at understanding a particular topic. Interviews are used in research to overcome the weaknesses of observational methods in data collection (Darlin et al., 2023).

Interviews are a process of direct question and answer with related parties, in this case researchers conducted interviews with the chairman of the Village Cooperative and several members of the Village Cooperative to obtain information related to the history of the Village Cooperative, the tender system and the data management system.

Interview is an investigation method using questions questions are given in writing, then in the interview the questions given orally. Therefore, between interviews and questionnaires there are things that are different the same despite the differences (Satriyanto & Parnawi, n.d.).

3. Documentation

Documentation is intended to obtain data directly from the research site including reports activities, photos, films, documentaries, and data relevant to research (Wijaya, n.d.).

The documentation technique is used to find sources of information that are related to existing research, in the form of photo documents and documents of the Tanjung Telang Village Cooperative. Through documentation techniques, researchers can study document materials related to the rubber tender information system material at the Tanjung Telang Village Cooperative.

4. Literature Study

Literature study is a data collection technique with literature review and books, journals and

references that are relevant to the research being conducted.

In this case the author also carried out library research by studying books to collect library data, starting from reading, taking notes and managing materials relating to research topics (Pratama & Wijaya, 2022).

d. System Developmnet Tools

The tool that researchers use is the Unified Modeling Language (UML) is a standard specification language used to document, specify and build software. UML has lots of diagrams, including use case diagrams, activity diagrams, class diagrams, and sequences diagram (Annisa Tri Hidayati et al., 2023).

UML ability to visualize models in a detailed and structured manner makes it an ideal tool to support the process of designing and building object-oriented software (Pranoto et al., n.d.).

Unified Modeling Language (UML) is a graphic modeling language used to design, document, and understand software systems (Mahardika et al., 2023)

e. System Development Method

The system development method used in this research is at this stage, system development is carried out using User Centered Design (UCD), it aims to develop systems based on existing problems and has work procedures and concepts in accordance with the rules regarding correct information.

UCD (User Centered Design) is a new method for system development. UCD is a language that is widely used in describing designs. Draft UCD is the user as central to the system development process, and goals, the system environment is entirely based on user experience (Priyatna et al., n.d.).

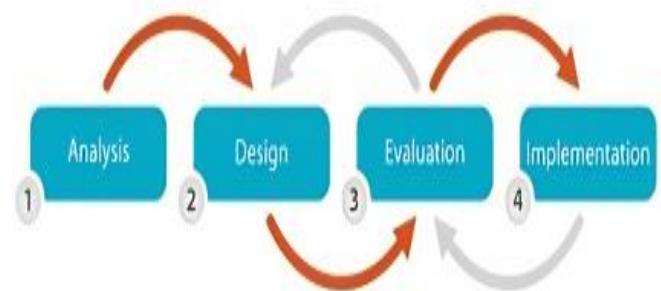


Figure 1. Ucer Centred Design (UCD) System Development Method.

Figure 1 explains the stages carried out by researchers using UCD development which consists of Analysis, Design, Evaluation and Implementation.

## RESULTS AND DISCUSSION

### Proposed System Design

The proposed system design can be seen in the figure below:

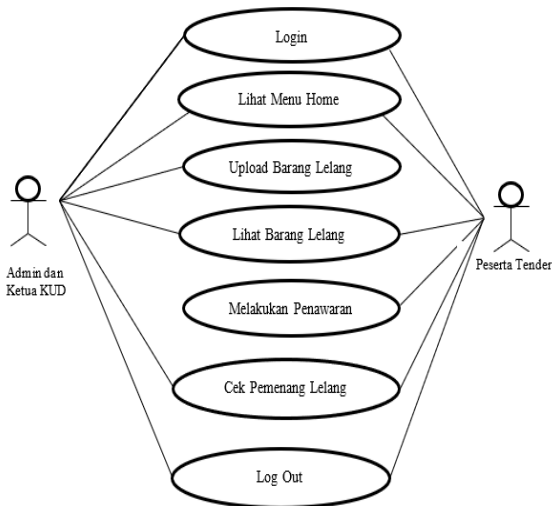


Figure 2. Design of the proposed system  
The figure 2 above explains the system flow starting from logging in, logging in, and viewing the admin and participant user home menu.

## 2. Home Page Display



Figure 3. Home Page Display

Figure 3 This initial page is the initial page when opening a Tanjung Telang village unit cooperative website. Where admins and users can know that this website is a website created specifically for cooperatives, just look at the slider photo on this home page.

## 3. Home Form Display

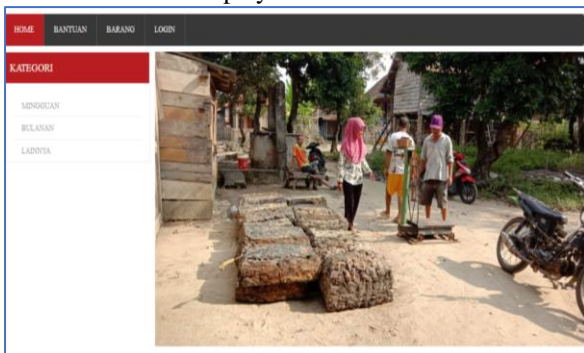


Figure 4. Home Form Display

Figure 4 above explains that this home display is the home page display where admins and users can enter the main page and interact with each other in the auction process.

## 4. Help Page Display



Figure 5. Help Page Display

In figure 5, this is a help page for users (buyers) and will be directly connected to the admin on this tender system application.

## 5. Display Of Auction Items Page

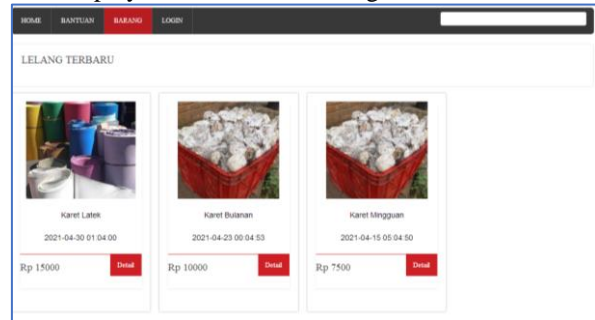


Figure 6. Display of auction items page

In figure 6 there is the main page for users or participants who have logged in correctly. On this page, users can select the menu in the sidebar provided on the main page.

## 6. Login View

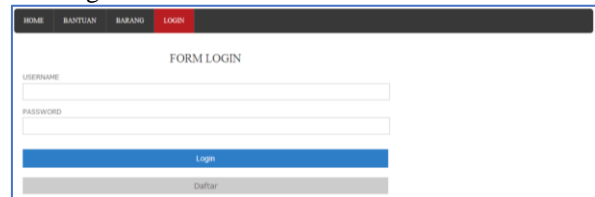
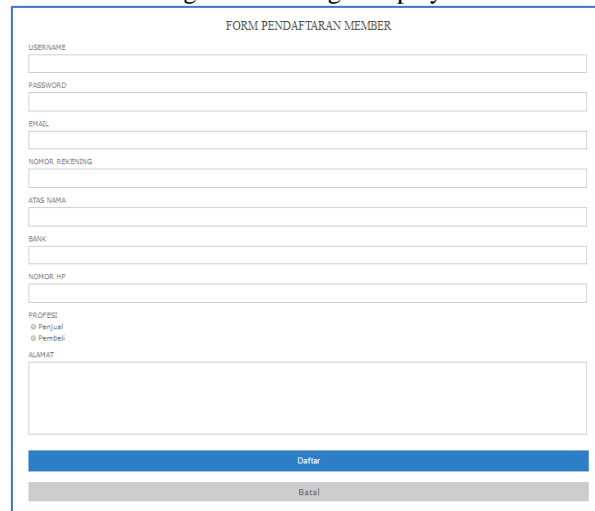


Figure 7. Login View

In the figure 7 above explains the login page display that already has an account on this application. users who log in to this application are admins, users (community), and users (buyers).

## 7. Member Registration Page Display





### 15. Seller Page View

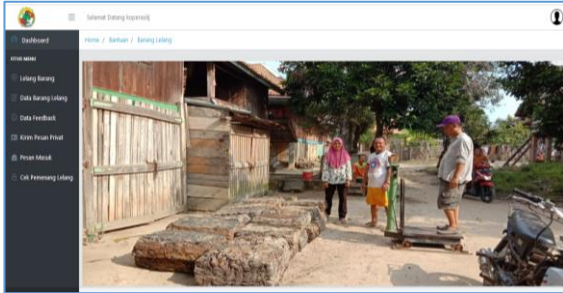


Figure 16. Seller Page View

In figure 16 On the Seller Page Display on this page is a page of Overall Administration Data on the User Page. Users can view all payment administration data by selecting the seller page menu.

### 16. Display of auction item posting form

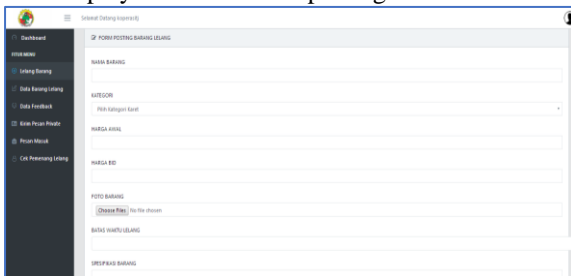


Figure 17. Display of auction item posting form

In figure 17 On the Display of the Auction Item Posting Form on the Admin Page, this is an auction item data input form page on the admin page. Admins can input data by selecting the payment input menu and filling out the form on the page.

### 17. Display of auction items

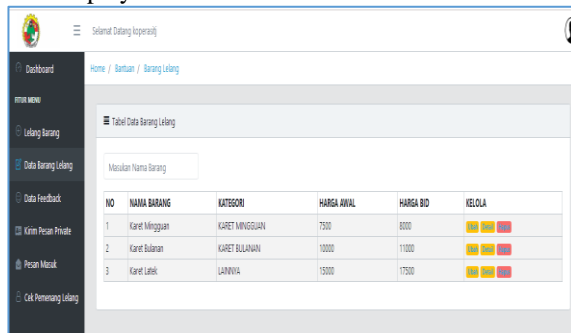


Figure 18. Display of auction items

In figure 18 the item menu view, the user can see the price information displayed on the item name until the bid price is listed. Users will make a price offer according to what is listed.

### 18. Feedback Data Display

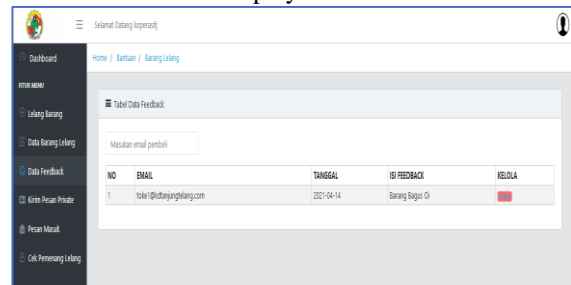


Figure 19. Feedback Data

Figure 19 explains the assessment made by buyers on the quality of goods (rubber) that have been purchased. and both seller and admin users can see the results of this assessment.

### 19. Send Message

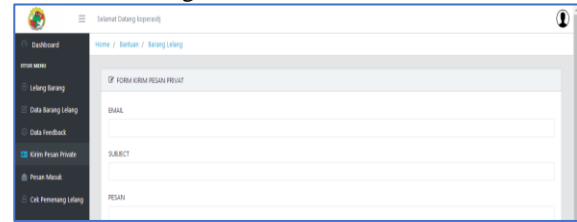


Figure 20. Send Message

In figure 20 is the message sending page that can be done by buyers and sellers. admin can control the message sending process in the application

### 20. Auction Winner View

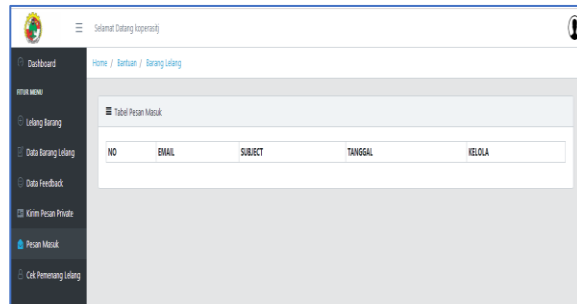


Figure 21. Auction Winner

Figure 21 explains that buyers who have won the auction will receive a message from this application.

### 21. Auction Item Detail View

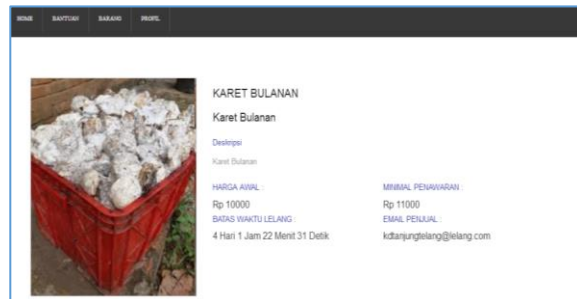


Figure 22. Auction item detail

In Figure 24 above, the types of rubber and the amount of rubber that will be sold by the village cooperative are shown.

### 22. Comment View

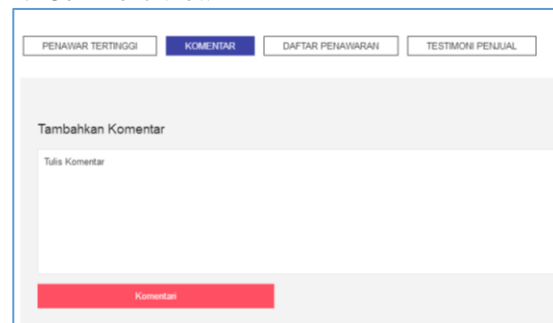


Figure 23. Comment View

Figure 23 explains that buyers can provide comments

on the quality of rubber sold by the village cooperative.

### 23. Completed Auction View



Figure 24. Completed Auction View

Figure 24 explains the Completed Auction List on the Admin Page, this is the page where when the Auction display ends, the auction is considered complete.

### 24. Buyer Page View



Figure 25. Buyer Page

In Figure 25, this Buyer Page View has the Overall Administration Data page on the User Page. Users can view all payment administration data by selecting the purchase page menu.

### 25. Balance Top Up

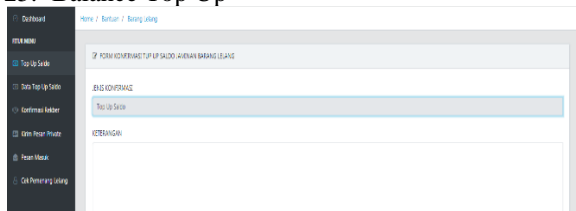


Figure 26. Balance Top Up

Figure 26 above explains the balance top up process or payments made by buyers to this application.

## CONCLUSION

Based on the analysis, software design and implementation and discussion, a conclusion can be drawn from this research, namely that currently the rubber auction system in the Tanjung Telang village cooperative is still conventional (manual) so that the construction of an online-based tender system will make the rubber auction process more effective, efficient and broader in the auction process carried out by the Tanjung Telang Village Cooperative. By making this online transition, transparency will be created in the auction rubber process between the cooperative and residents or rubber farmers.

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