Information System Design for Tracking Progress and Book Order Status Using the Prototyping Method

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Abstract

The progress and status tracking system is a way to increase the writer's service satisfaction to track the progress of books to be published. Unfortunately, this tracking system has not been widely used by book publishers. There are still publishers who only use messaging applications such as WhatsApp and e-mail to inform them of the book's progress. It is not effective in providing information to the author. Therefore, the information system for tracking the progress and status of this book order was designed by applying the prototyping method. This method is considered effective in providing solutions because of its superior communication between the customers and the system developer. The progress and status tracking information system provides information on the progress of book printing to the delivery of books to authors. All information is equipped with progress graphics and update date information. With the implementation of this progress and status tracking information system, the process of conveying information about the progress of book publishing will be more effective and efficient. This will increase satisfaction for the author.

Keywords: Progress Tracking; Tracking Status; Book Publishing; Website

1 Introduction

The current development of information systems makes all activities easier and more efficient. This is inseparable from using the system to provide information related to tracking a gradual activity or project. By providing a project development information system (order tracking), customers will find it easier to receive information about the progress of their orders (Purbaya, 2021). One example of implementing this system is tracking progress and status in book printing.

However, book publishers have not widely used the system for tracking the progress and printing status of this book. One of the publishers that has not implemented this system is PT. Kaizen Media Publishing Bandung. The printing admin will periodically inform the progress of book publishing to authors through messaging applications such as WhatsApp or e-mail. This was felt ineffective in providing information to the author because the author could not see the progress of the work on the book, its status, and the work timeline. For publishers, no system records book publishing progress and status.

Because of this, this progress and status tracking system was designed. The progress and status tracking system is an effort to increase service satisfaction to writers to track the progress of books to be published. This system is designed to satisfy customers by applying the prototyping method, where intense communication between system developers and users is prioritized. Developers and system users will work together in communicating the system design step by step so that the system will be built according to user needs

in a shorter time and with minimal errors (Kurniawan et al., 2020).

With the implementation of this system, information about the book publishing project can be detected, and its status is known. Authors can monitor how far the book is being processed without asking the publisher. Authors can monitor progress more effectively with complete information. Authors can see a timeline of bookwork and other note information from publishers.

2 Methodology

The methodology used in this study includes the following:

2.1 Collecting Data Method

This research was conducted by applying a qualitative analysis method using a descriptive approach. The qualitative research method is a method that examines and analyzes the in-depth nature of data in the field by applying descriptive aspects (Kaharuddin, 2020). This descriptive research is research that produces reports with various forms of circumstances (Sulastri et al., 2023).

There are the steps taken in collecting research data:
a. Interview

Interviews are stages in research with the question, response, and narrative stimulation techniques to collect the required data about a topic (Saputra et al., 2023). In this study, interviews were conducted to determine the flow of the running system and what was expected by both the author and the publisher in the progress tracking system and book order status. Interviews were conducted with publishers and writers at PT. Kaizen Media Publishing Bandung.

b. Literature Review

A literature study is a research data collection method by collecting information related to topics by research sourced from literature, books, notes, and previous research (Fadilah et al., 2021). In this research, information, and research data were found based on references from previous studies in published journals.

2.2 Development System Method

Prototyping is a software development method that describes the physical working model of the system and its functions as an initial version of the system (Purnomo, 2017). This method has the advantage of intense communication between the customer and the system developer to assist analysts in determining customer needs and minimizing misperceptions (Rosi Subhiyakto & Wahyu Utomo, 2017). Prototypes can be removed or added as needed so that they are by the planning and analysis carried out by the system developer (Kurniawan et al., 2020). If, according to Aditya et al., prototyping is an incomplete method, it must be evaluated and modified again (Aditya et al., 2021). The stages in the prototyping method can be seen in Figure 1.
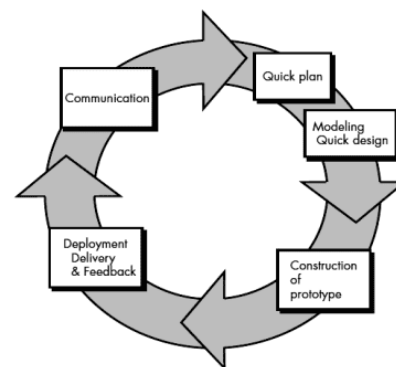

Figure 1. Prototyping Method (Pressman & Maxim, 2014)

There are five main stages in the prototyping method (Aditya et al., 2021):
a. Communication. Communication is the stage of analyzing the system requirements required by the user. System developers and customers will meet and determine system design goals at this stage. The system designer records and describes the desired requirements, which will be directly consulted with the customer (Kurniati, 2021).
b. Quick plan. In this stage, needs planning is carried out based on the results of the analysis carried out in the previous stage. This is the primary planning stage before the interface design (Kurniati, 2021).
c. Modeling quick design. According to Sauda and Agustini, quick design modeling translates user needs and desires into interface designs. The function of making

this interface design is that users understand the system design more quickly (Sauda & Agustini, 2020).

d. Construction of prototype. In this stage, the framework or design of the system to be built is carried out (Kurniati, 2021). At this stage also carried out testing and refinement (Aditya et al., 2021).

e. Development delivery and feedback. This stage is the evaluation stage of the system that has been built. In this stage, system adjustments will also be made to user needs. At this stage, improvements are also made based on the evaluation that has been carried out so that the system is ready to be used by users (Pradipta et al., 2015).

3 Result and Discussion

The results of the research according to the prototyping method applied are described as follows:

c. Communication

In the communication stage, interviews are conducted with users to obtain information about the needs in designing information systems. In designing this tracking information system, interviews were conducted with two users, namely the publisher and the author. The results of interviews regarding the system seen from the point of view of publishers and writers will be different because they have different needs. This result makes them need to be involved in this communication stage.

d. Quick Plan

Quick plan is an initial plan carried out by conducting a needs analysis. This analysis stage will describe system requirements, including technology and user analysis. The first step taken in this stage is to identify the needs in designing the application. This step will determine the required input specifications, the expected outputs, and the processes needed to manage the inputs to become the appropriate outputs.

Users involved in this tracking information system are regulated based on user access rights, whereas in this system, there are two users, namely publisher, and author. The new system process in the process tracking information system and book order status is illustrated with a flowchart, as shown in Figure 2.
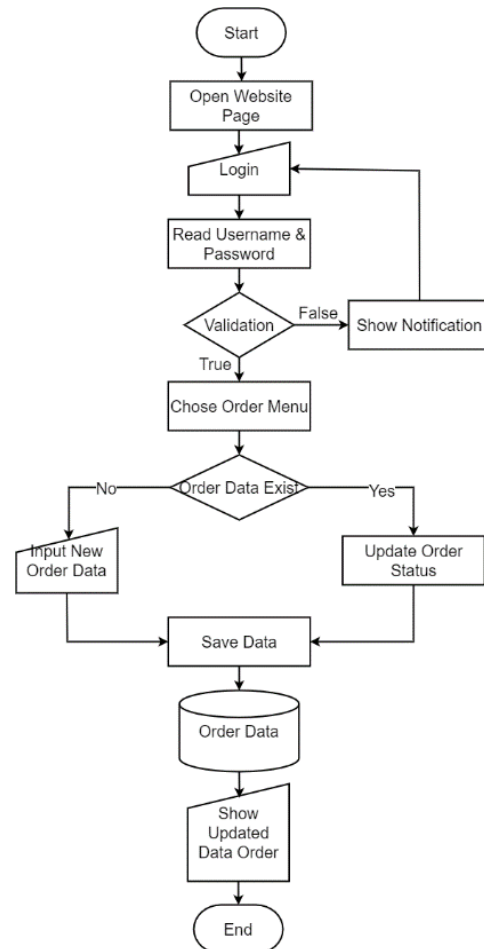

Figure 2. System Plan Flowchart

e. Modeling Quick Design

Quick design modeling produces an overview of the application workflow, the actors involved, and the interaction processes provided by the system. This modeling is described in the diagram Unified Modeling Language (UML), which can be seen in the Figure 3-5.
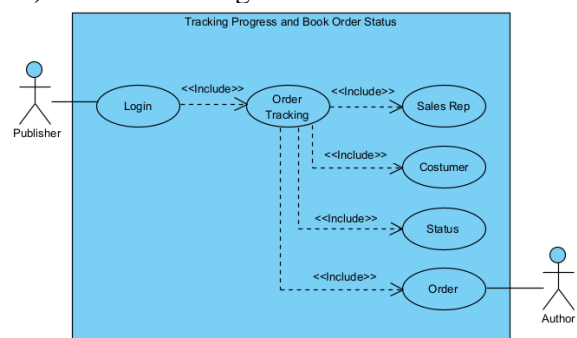
1) Use Case Diagram

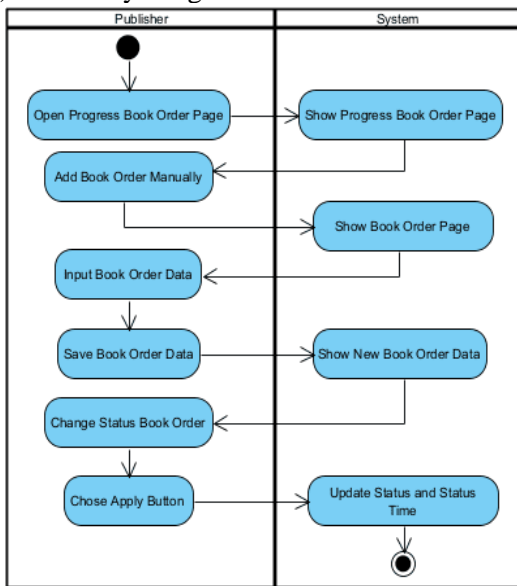Figure 3. Use Case Diagram Publish Book

2) Activity Diagram

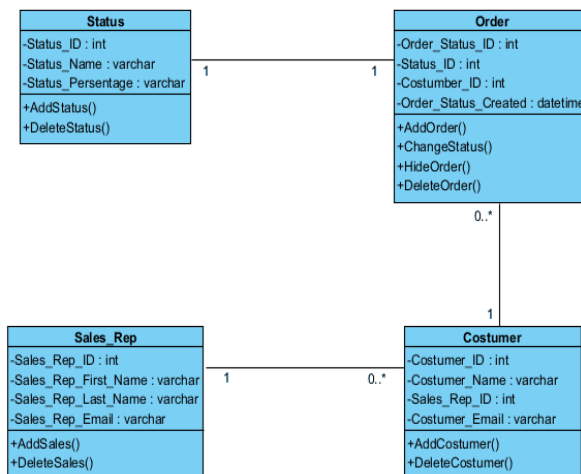

Figure 4. Activity Diagram Publish Book

3) Class Diagram

Figure 5. Class Diagram Publish Book

f. Construction of Prototype

After carrying out the analysis and design, the next stage is forming a prototype. At this stage, the prototype design is implemented in the form of a program, where the tracking information system uses the PHP programming language and MySQL database. The results of implementing the progress tracking information system and the status of book orders can be seen in Figures 6 – 10.
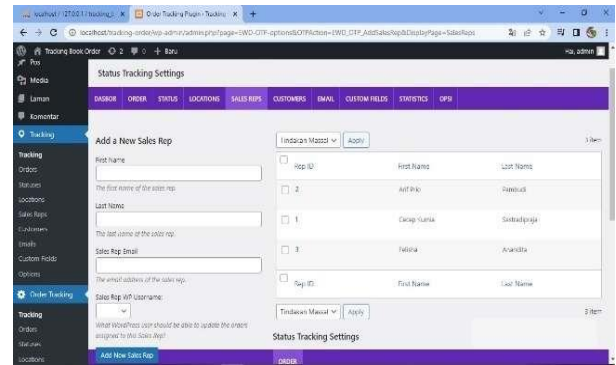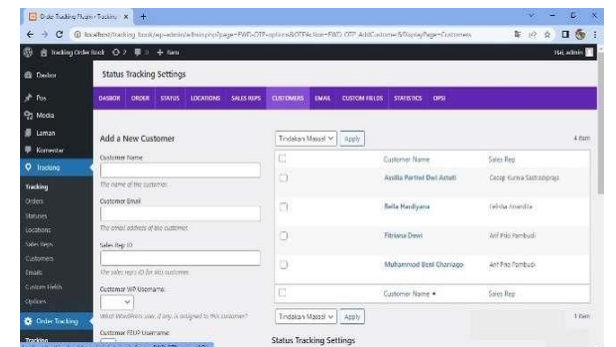

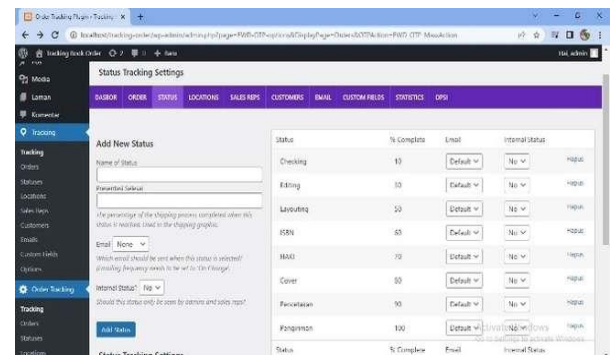Figure 6. Sales Representative Page

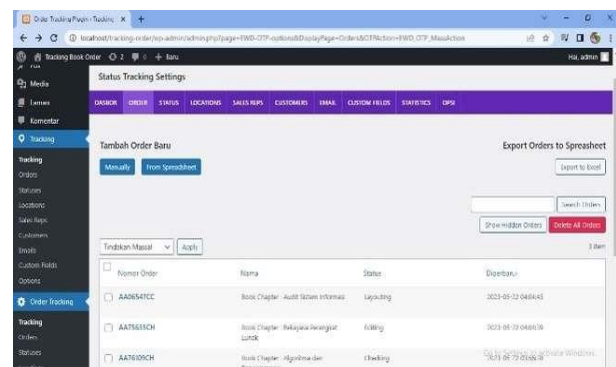Figure 7. Customer Page

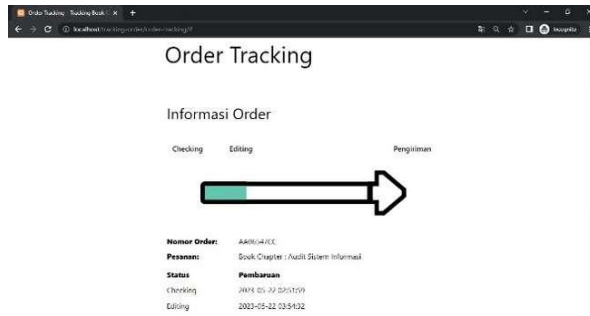Figure 8. Status Page

Figure 9. Order Page

Figure 10. Tracking Progress and Order

At this stage, testing is carried out to ensure the built information system is in accordance with the needs and goals of the user. The testing method used in this study is the blackbox method. The black box method is carried out by making cases that try all the functions provided in the system that has been designed. These black box test results indicate whether the function is appropriate (Aditya et al., 2021).

The test results using the black box method can be shown in Table 1.

g. Deployment delivery and feedback

Table 1. Blackbox testing information system for tracking progress and book order status

Test ID	Description	Expected Result	Test Result	Conclusion
T-1	Login: - Enter the correct username and password	Successfully logged into the system	Successfully logged into the system	Valid
T-2	Login: - Entered the wrong username and or password	- Failed to log in to the system - Displays a wrong username or password notification	- Failed to log in to the system - Displays a wrong username or password notification	Valid
T-3	Add sales representative data: - Enter sales representative data - Save sales representative data	- Displays a notification that data has been successfully saved - Successfully displays sales representative data that has been saved	- Displays a notification that data has been successfully saved - Successfully displays Sales Representative data that has been saved	Valid
T-4	Add customer data: - Enter customer data - Save customer data	- Displays a notification that data has been successfully saved - Successfully displays the customer data that has been saved	- Displays a notification that data has been successfully saved - Successfully displays the customer data that has been saved	Valid
T-5	Added status data: - Enter Status data along with its percentage - Save Status data	- Displays a notification that data has been successfully saved - Successfully displays the status data that has been saved	- Displays a notification that data has been successfully saved - Successfully displays the status data that has been saved	Valid
T-6	Add order data: - Enter the order data and its percentage - Save order data	- Displays a notification that data has been successfully saved - Successfully displays order data that has been stored	- Displays a notification that data has been successfully saved - Successfully displays order data that has been stored	Valid
T-7	Looking for information on the progress and status of the book: - Enter the book order number in the search field - Search order data	Displays the complete information of progress and book order status	Displays the complete information of progress and book order status	Valid

4 Conclusion

Research has concluded that an information system for tracking the progress and order status of books has been designed by applying the prototyping method. This system can make it easy for publishers to inform the progress and status of book printing work. Notes regarding this progress are well documented in the system so that reporting by publishers will be easier.

As for writers, this progress and status tracking system can make it easy to find out how far work on the book has gone without waiting for information via WhatsApp or e-mail messages. Authors can also observe progress through the timeline displayed in the system. This can increase the satisfaction of the author's service to the publisher.

5 Future Work

The system designed using the prototyping method is not perfect. It still needs a lot of development, such as:

1. The system that is designed relies on plugins from the WordPress CMS. The menus available are still too many and not understandable by publishers as users. For the development of this system, it is hoped that later there will be views from publisher users that are more practical and easy to understand.

2. In recording status, there are still deficiencies in terms of prerequisite stages. For example, to change the printing status to Layouting, the publisher should go through the Checking and Editing stages first, but in this system, the publisher can immediately change the status to Layouting without going through the following steps. This is felt to be less reliable.

3. The author's user interface is still straightforward. It is necessary to develop its interface design.

4. The author has not been able to send the text through the system. The sending of the text by the author is still carried out via the messaging application WhatsApp and e-mail. In future research, it is hoped that there will be a feature for uploading text for authors so that the entire process of ordering and printing books is carried out from the system.

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