

## Web-Based Print Order Information System at Duta Printing and Copy Sidoarjo

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### ABSTRACT

**Objective:** This study aims to develop a web-based printing ordering information system to improve the efficiency and service quality of Duta Printing & Copy, a business that previously relied on manual order recording methods. **Method:** The research applies a system development approach using PHP as the programming language and a MySQL database to manage order, payment, and customer data. The system design follows the waterfall model, including analysis, design, implementation, and testing stages to ensure reliability and usability. **Results:** The developed web-based system successfully accelerates the ordering process, minimizes human error, and provides real-time access to payment and order status information. This improvement enhances operational efficiency and customer satisfaction. **Novelty:** The study presents an integrated digital solution tailored for small-scale printing businesses, bridging the gap between traditional manual services and digital automation, thereby offering a practical model for digital transformation in local service enterprises.

## INTRODUCTION

In today's digital era, information technology has become an integral aspect of human life [1]. The role of information systems in the era of globalization is very important in various aspects of life because information technology supports the exchange of data and information quickly and accurately without limits and supports global integration in various fields, for example in the printing business [2]. The printing business is one of the profitable businesses because it has great opportunities to grow even bigger [3]. Currently, it cannot be denied that many people need printing for their daily lives, from students, employees, to companies. The public's need for printing drives the development of the printing or digital printing business to be more rapid [4]. With an integrated information system, the printing business can be more efficient, responsive to customer needs, and easier to manage [1].

Duta Printing & Copy is a business that provides printing and photocopying services, including tape binding, softcover, hardcover, spiral, and booklet printing. It is located at Jl. Jenggolo No. 62, Sidoarjo, East Java. Duta Printing & Copy is a frequently sought-after printing service due to its reputation for excellent, fast, and satisfying service. However, despite its advanced capabilities, the business still provides services manually, writing down customer orders on paper notes, which is time-consuming. Furthermore, information on paid and unpaid orders is unavailable, making it impossible to determine which orders are outstanding. This issue presents a drawback

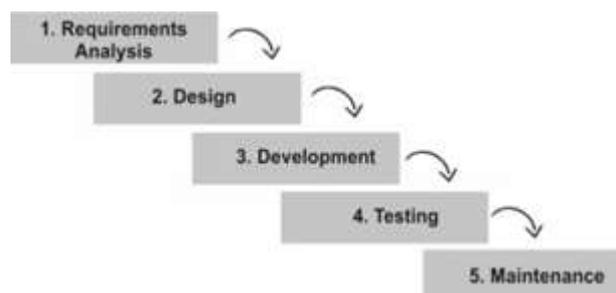
for Duta Printing & Copy in this era of globalization, where they must compete with other businesses.

The authors conducted data research on relevant previous research and concluded as follows: Nurmalasari, Mayanti, Dewi Ayu Safitri, and Kamal Reza created an information system that serves as a resource for information on printing products and services [5]. Aryo Nur Utomo & Muhammad Alfaridzi created a printing ordering website at Citra Kencana Printing with PHP as the programming language and MySQL as the database using the spiral method [6]. Riyadi & Rouf created an information system that can be accessed via the internet for ordering printing services at CV Mitra Jaya using extreme programming as the development method [7].

The web-based printing ordering information system at Duta Printing & Copy Sidoarjo is an information system that is useful for input, ordering and payment processes and is only limited to the scope of the website. PHP MySQL used in this information system is version 7.2 / 8.0 and this system can be accessed on browsers such as Google Chrome, or Microsoft Edge. The Waterfall model is applied in designing this printing information system, this model applies an organized and sequential approach and is also very popular in various applications [8]. It is hoped that through the designed information system, it can speed up and simplify performance at Duta Printing & Copy.

## RESEARCH METHOD

Research methods are needed in information systems research to produce an appropriate solution [9]. In this study, the author applies the waterfall method as an approach in developing information systems. The waterfall method is a method in software engineering that adopts a structured and gradual approach and this model is also very popular in various applications, and has five stages [10].



**Figure 1.** Waterfall Metode

The first step is the analysis that employees need for their information system is very important, employees say they need a system that can help input customer data, order price data and orders ordered by customers to the form of note output.

After knowing the needs of Duta employees, the next stage is the system design required from the system framework, customer data input flow, order input flow and interface design of the system. The system is started based on a previously prepared flow

[11]. The coding stage begins with the creation of a database, login menu, and dashboard menu, a process that takes several weeks.

## RESULTS AND DISCUSSION

This process is carried out to understand employee needs and determine the system specifications that must be developed to support the Duta Printing & Copy Sidoarjo printing business process with the aim that the information system that has been created can be appropriate and efficient. The first step taken is to conduct observations by directly coming to the location to observe directly the object being studied, until obtaining sufficiently accurate data. Interviews were conducted directly with Duta Printing & Copy Sidoarjo employees who have been employees for 10 years named Adist Septiani to obtain accurate information, according to Adist, the service order input process is still done by writing manually on notes then information about orders that have been paid or not yet paid is not available, so this business cannot know which orders have not been paid. Literature study is the collection of data and theories by reading scientific sources [13], which are obtained from books, articles, journals and lecture materials as supporting printing information systems.

A use case diagram is a diagram that functions as a depiction of the interaction between users and an information system [14]. To display the information system model that has been designed.

This diagram illustrates the steps an admin takes while using this order information system, including logging in as an admin, managing order data, managing customer data, verifying payments, managing cashier data, processing order transactions, and managing material data.

The display of the printing ordering information system at Duta Printing and Copy is designed using a website with the Php programming language and VS Code as the source code editor. There are username and password fields, so employees and admins can enter their username and password to log in before entering the system. When employees log in, the admin will provide a username and password so they can enter orders. The dashboard page displays a list of entered orders. At the front, you can add materials, add customers, and view unpaid and unpaid orders. On the left side, you'll find the orders, payment verification, master, and settings menus.

is the add material page where the admin can add materials or products available in the shop, by inputting the price and unit. Add customer page where the admin can edit or add customer data by entering the customer's name, address and telephone number. Add account page, where the admin can add employee data who access the information system by inputting name, username and password. on the add order page, employees and admins enter customer data, order date and orders ordered by the customer. Payment verification page where the admin can verify the payment by viewing the proof of transfer that has been uploaded. If the proof of transfer matches the total order, the payment is valid and the receipt can be printed.

the order has been paid page where the order data that has been entered into the system by the employee or admin has been processed and paid for by the customer. Unpaid orders page which displays orders that have been entered into the system but have not been paid by the customer. is an order note where the note can be printed if the customer has made payment according to the total order.

The system testing or testing used in this system uses the Black Box testing method [19]. With this method, the tester checks whether the system functions according to the provisions and produces appropriate output based on the input provided [20]. Based on the test results in the table above, it can be concluded that the system successfully met its specified functions and requirements. This indicates that the system successfully provided the expected response.

The developed system is ready to be activated and used after the system is installed on the target device [21]. After the system is implemented on the device, a maintenance process is carried out to ensure the system continues to function optimally and is error-free during its use. Maintenance includes regular monitoring, software updates, and handling potential problems that arise during system use. Consistent maintenance aims to maintain optimal system performance.

## CONCLUSION

**Fundamental Finding :** The development of the web-based printing ordering system at Duta Printing & Copy has been successfully implemented, meeting functional requirements such as managing material, customer, and order data, as well as facilitating order input and payment verification with no detected system errors. **Implication :** This system significantly enhances operational efficiency by reducing manual workload, minimizing errors in order recording, and providing accurate financial tracking, thereby improving overall service quality and business management. **Limitation :** However, the system is still limited in terms of scalability and advanced analytical features, such as automated reporting or integration with online payment gateways. **Future Research :** Further studies should focus on expanding the system's functionality, enhancing user interface design, implementing stronger data security measures, and conducting broader testing to ensure system reliability and adaptability to diverse business environments.

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