Prototype of Sales Information System Based on Educational Book Consultan Data and Senior Educational Book Consultant

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ABSTRACT

The purpose of this study is to provide a solution to the problem of the risk of loss of sales data and EBC personal data and the possibility of data duplication that results in incompatible data points for each EBC, faster data retrieval than before the manual becomes computerized, simplifies data processing, and means for leaders to get realtime sales information. The study was conducted with a qualitative approach that emphasizes a deep understanding of a particular problem. This study chooses the type of research design with primary and secondary data. Primary data sources obtained from observations on KudeStation. Secondary data sources were obtained from literature studies related to the research conducted. The system development method used is the prototype method. The results showed that the problem of the risk of losing sales data and EBC personal data can be solved by using data stored in the database. With the application information system, data search becomes faster than before (manual) compared to after computerized with the data search feature. They are simplifying data processing by creating a sales information system. Provide a means for leaders to get realtime sales information by selecting a web-based sales information system so that after hosting this sales information system, all data can be accessed from anywhere in realtime.

Keywords: Sales Information System, Educational Book Consultan, Senior Educational Book Consultan.

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INTRODUCTION

Analyzing the needs of the information system that is built is a must because there are differences from each company in implementing policies and workflows. This has also been experienced by KudeStation, which has several times built and used different applications for data management at sales. Still, these applications cannot be fully a solution for sales data management, so the company decided not to use these applications. One application that was used was the Zahir application which is a business and financial management software[1]. Zahir's application is not in accordance with the growing process flow in KudeStation. Initially, there was only one product, but now there are several products that are marketed. When viewed from the definition of an application is a computer program created to do and carry out special tasks from users that include a series of activities or commands to be executed by the computer[2]. So that if the application is applied, it will only produce special output according to its function. While information systems are procedures that are interconnected to carry out certain activities in order to obtain information that is useful for recipients of information, from the two definitions above, it can be concluded that KudeStation should have started developing information systems and not using standard applications anymore[3].

Along with the development of information technology, especially the internet today, is very helpful in displaying information in realtime[4]. The existence of information technology such as the internet has opened the eyes of the world to a new world, new interactions, and has supported the effectiveness and efficiency in its role as a means of communication[5]. The publication is also a means to obtain various information needed[6]. With the internet, information flow is easily obtained, where websites are the main choice for internet use[7]. The ease of accessing the internet is what makes Admin's job easier. This can allow Admins and Leaders to access sales information faster and can be seen without being constrained by time or place[8].

One example of duplicating data processing between the sales admin and the shipping department is processing data orders. Sales admins have an interest in processing orders and checking payments to the financial admin and filing the order data. As for the shipping department, it is necessary to prepare the shipment according to the order data, submit the shipping documents and receipts to the Financial Admin and record the status of the order to the SP OK Register. If this process is done manually separately or using a particular application, the linkage of this process cannot be connected. However, it is different if this process is entered into the information system, where each user can perform his work function more effectively because the data is already available from the Sales Admin input and no re-input is needed for the same data[9]. Therefore, we need a sales information system that can process sales data based on the uniqueness of the system that is already running in the Company.

In the process of processing sales data, Educational Book Consultant (EBC) and Senior Educational Book Consultant (SEBC) as marketing freelance at KudeStation have not been well-archived. Where the processing system is still carried out conventionally and in each sales transaction is stored in the form of archives. This is felt to cause problems, including the risk of huge data loss, the slow process of finding data because it involves a lot of documents, the complexity of data processing, and also the possibility of duplication of data. So if the Chairman needs the sales report, the Administration feels difficult, and the information provided cannot be used to support decision making for the Chairman.

Related to some understanding of sales data processing problems, EBC data, and SEBC as marketing freelance at KudeStation have not been well-archived, this research was conducted to provide solutions to the problem of the risk of loss of sales data and EBC personal data and the possibility of data duplication that results in incompatible data points for each EBC, faster data retrieval than before the manual becomes computerized, simplifies data processing, and means for leaders to get realtime sales information.

LITERATURE REVIEW

This research is an attempt to develop a sales information system in KudeStation that suits your needs so that as a reference tool, it needs data from previous studies as a comparison and study material. Previous researches that become references cannot be separated from research topics, namely the Sales Information System at KudeStation using a web-based clustering method.

Based on the results of research conducted by[10], where this research focuses on providing convenience to customers in accessing the website as a means to interact during product purchases. The web-based sales information system in CV Permata uses the PHP programming language and MySQL database using the Rational Unified Process (RUP) method. RUP is an iterative approach to software development, focused on architecture (architecture-centric), and is more directed based on use case driven. With four phases of system development, namely the inception phase, the elaboration phase (expansion/planning), the construction phase (construction), and the transition phase (transition). To identify problems that arise in CV Permata, the writer uses the problem-solving framework with the Fishbone framework. The Fishbone Framework is used to categorize the issues found in accordance with the data collected. The conclusion of this study is based on the results of a web-based sales information system analysis on CV Permata, that with the delivery of web-based sales information system media, it is expected that customers can use the website as an alternative medium for making sales transactions, and can interact and communicate when making transactions through the website and make it easier for customers to get product information and news about the company both member and non-member[10].

Based on the results of research conducted by [11], which directs research to the means to expand market share through the transformation of business processes towards digitisation, capital mobility, and product and service liberalisation. This sales information system uses the Apache webserver, the Hypertext Preprocessor (PHP) programming language and the MySQL database. In making a website-based sales information system, this begins with a search process to identify and analyse all needs related to the content and features needed. This activity is carried out to obtain all the information needs of each business process so that the application model and sales procedures are compatible with conventional business processes. Restructuring sales activities through digitisation media. This can offer a new opportunity and at the same time, be a solution to a number of restrictions on the company by considering the procedures and standardisation of the company's operations. The goal is to produce a sales digitisation process online without being dependent on location and being bound by the time of a business transaction. This sales digitisation system provides a number of operational advantages such as data processing that is easier to trace, payment systems are more accurate and have no receivables, inventory information is more reliable, can build personalised relationships with customers so that it is closer and this is one of the company's competitiveness[11].

Based on the results of research conducted by [12], explains that from the results of the analysis of the grouping of bird dispersal data using K-Means Clustering, three clusters of bird dispersion areas were formed, namely cluster one with a total of 345 items where the distribution of birds originated from the Jambi area with the aim West Java and East Java regions, cluster two with a total of 703 items where in addition to the area of origin of the distribution of Jambi birds is also a transit area for bird shipments to other regions such as DKI Jakarta and Central Java and cluster three with a total of 257 items where the distribution of birds originates from Jambi and Jambi areas are also transit areas for bird shipments with shipping destinations for DKI Jakarta, Central Java and East Java. Counselling methods for prevention of bird flu can be implemented well based on the cluster formed so that the community can avoid bird flu and can anticipate them well[12].

In this research, the data mining process was carried out. The process of data mining is the process of finding interesting patterns or information in selected data using certain techniques, methods or algorithms in accordance with the objectives of the overall process. At the data evaluation stage (Evaluation Data) is carried out to test the quality of the data, whether the pattern or information found is in accordance with or contradicting the previous facts. Then proceed to test the results. The results testing phase is a technique used to determine that the application of the method used has been able to solve the problem. After all, stages have completed a conclusion can be drawn whether the information found is in accordance with previous facts or not, so that new knowledge will be obtained as contained in the conclusions of this study[12].

Based on the results of research conducted by [13], the results of the analysis, design, and testing can be obtained, it can be concluded that 1) the application of Data Mining by using applications that are built can help PT Indomarco as an illustration for company decision making in order to obtain sales patterns products, 2) Data processing can produce enough information to be further analyzed, and 3) Applications that are built can reduce the accumulation of data that was underused before[13].

METHODOLOGY

The study was conducted with a qualitative approach that emphasises a deep understanding of a particular problem[14]. This study chooses the type of research design with primary and secondary data. Primary data sources obtained from observations on KudeStation. Secondary data sources were obtained from literature studies related to the research conducted. The system development method used is the prototype method. This is done to provide a unique data process solution from the KudeStation company so that the sales information system is built according to the needs. The research process cycle will be carried out, namely (1) system requirements analysis, (2) system design, (3) prototype development, (4) prototype testing and improvement, and (5) implementation.

RESULTS AND DISCUSSION

System Analysis

System requirements analysis aims to identify problems and specific system requirements obtained from the processing of sales data at KudeStation. To get the data and information needed, observation is carried out by making direct observations on KudeStation and Library Studies by reading books, journals, documentation, and the internet. From the results of the needs analysis, we get an overview of the sales flow that is currently running at KudeStation. The current sales flow reveals inefficiencies, as the processing time for each part is not aligned with the fast-paced and practical demands of the digital era. The system design process begins by collecting data to model the system, which is the initial step in identifying the strengths and weaknesses of the existing processes. The analysis then focuses on the data flow to create a data flow diagram. This approach is based on the principle that data and knowledge are valuable company resources that need to be carefully planned and maintained.

System requirements analysis must define specific system requirements such as system input (input), the output produced (output), operations performed (process), data sources handled, and control (control). These components are explained in accordance with Figure 2. Inputs needed by the system based on Figure 2 are the order letter and its completeness, where Middle Manager as EBC and SEBC supervision will be assisted by the admin to be able to input the order letter. Admin selection to input order letters is an effort so that incoming data can still be controlled properly so that incomplete data input can be avoided. Another thing to consider is training in the use of information systems in the future if the old Middle Manager is replaced with a new Middle Manager.

If you look again at the sales process flow column 2 of the sales department, there is an indirect relationship between the order letter and the finance department which means that the process must be carried out internally within the sales department. From some of the considerations above, the author decides to make the admin as the user who inputs the order letter and its completeness to this sales information system. Inputs needed by the system include delivery receipt, order letter register, commission transfer, and sending proof of transfer email to Middle Manager. To simplify the sales department, finance section, and delivery section, it was decided to grant access rights to each section to the sales information system in accordance with the function in Figure 2.

Judging from the data processed in the form of personal data and other important information both owned by Middle Manager, EBC and SEBC, as well as customers, maintaining data confidentiality is very important to be a priority as a form of corporate protection. The confidentiality of this data also impacts the level of trust of Middle Manager, EBC, and SEBC, and KudeStation customers. When viewed from the interests of the company, the personal data is the company's assets that must be maintained so that the company's goals of profit can be achieved. As for the output produced (output) from the flow that is sending data, receiving commission data, and some other related data such as EBC and SEBC points.

System Design

After the data is obtained in full, then it will be classified into the appropriate groups. At this time, the Clustering method can be applied to the data generated from observing the old system. At this stage, the system design and user interface design of the application will be built. The design is made using object orientation, namely, Unified Modeling Language (UML). The diagrams created are Use Case Diagrams and Activity Diagrams. Use Case Diagrams illustrate the interaction that occurs between the actor and the system that will be created during the ordering process or processing sales data. While the Activity Diagram illustrates the flow of activities that can be carried out by actors from the beginning to the end of a use case. After the system design is complete, it continues with the stages of prototype development.

Based on available data, there is a need for a proposed system that is able to describe the system to be created. This proposed system will provide information on the parts of the manual system that are changed into the system that was made. The related users are Customer Service, Sales, Delivery, and

Finance. The proposed system is based on the flow of processes that occur in the field, where Customer Service plays a role in inputting order letters that were previously united with the Admin user. User delivery still has a manual process in accordance with shipping procedures and participates in the system when inputting receipts according to their authority. For financial users, they still have a process that is mostly done manually and is done outside the system, and this is related to the confidentiality of the company relating to financial data.

In this sales information system, five actors enter the system, namely, Super Admin, Management, Sales Admin, Financial Admin, and Admin Delivery. These five actors have their respective activities according to access rights. Super admin actor can access all system pages. Namely, login page, start page, order page, marketing data page, book data page, commission page, receipt page, and report page. The following description of the use case diagram can be seen in Figure 1.
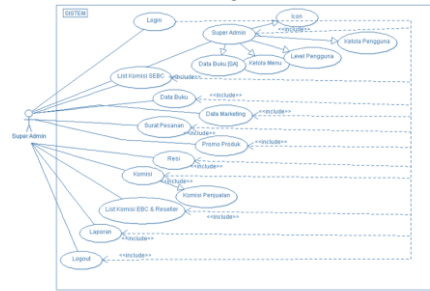

Figure 1. Use Case Diagram

From the use case that has been made, then the activity diagram is modelled. In all use case actors, there is login as the initial entry to the system. The following is the login activity diagram that applies to all actors.
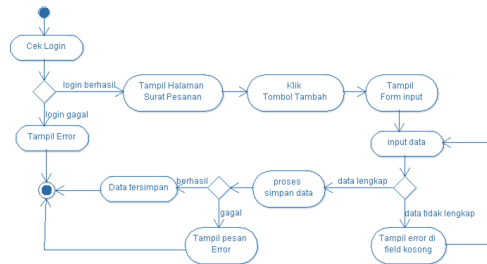

Figure 2. Activity Diagram of Order

In the class diagram, the relationship that occurs can be in accordance with the controller on the existing CodeIgniter or table. The following is the class diagram used can be seen in Figure 3.
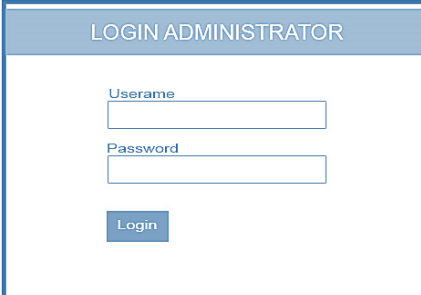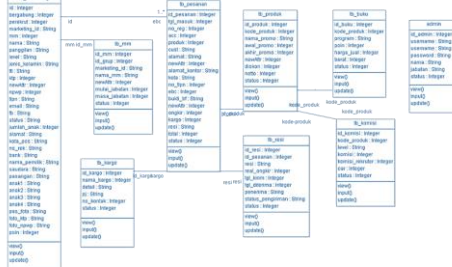

Figure 3. Class Diagram

Interface Design

When the system is accessed, the overall layout or design of the interface is displayed. Additionally, a specific design is provided for the login page. The development of prototypes begins with translating the system design that has been analyzed into the programming language. The user will evaluate this prototype and will be continued to the next stage, namely prototype testing and improvement. The

programming language used is open source such as PHP, HTML, Javascript, CSS, and Jquery. Similarly, database development, using the MariaDB database. The development of sales information systems at KudeStation uses the Code Igniter framework, supported by other components. In addition to the development of the system, the data are grouped according to the appropriate similarity so that connections that were not initially visible can be obtained and the patterns of distribution of the data as a whole can be clearly illustrated.

LOGIN ADMINISTRATOR

Userame

Password

Login

**Figure 4. Login Page Interface Design**

The development of prototypes begins by translating the analyzed system design into the appropriate programming languages. This prototype undergoes user evaluation before proceeding to subsequent stages, which include prototype testing and iterative improvements. The programming languages employed in this process are open-source, including PHP, HTML, JavaScript, CSS, and jQuery. Additionally, database development utilizes the MariaDB database. For the development of the sales information system at KudeStation, the CodeIgniter framework is used, supported by various other components. In conjunction with system development, data are categorized according to their similarities, enabling the identification of initially invisible connections and clearly illustrating overall data distribution patterns.

Once the prototype is developed, it advances to the system testing stage. The produced system is rigorously tested, implemented, evaluated, and modified repeatedly until it meets user acceptance criteria. System testing is crucial for identifying errors and facilitating necessary revisions, ensuring the system is error-free. Upon error correction, the system is ready for user implementation. The following sections detail the stages of prototype development, beginning with the scope and limitations, followed by prototype requirements, design using Notepad++, and the resulting prototype.

The website is accessible to everyone, but system access requires a user login. Data processing focuses solely on order data or letters, using sample data for prototype development. The system is initially developing, concentrating on current workflow processes without additional features. System users include Super Admin, Management, Sales Admin, Financial Admin, and Delivery Admin. Data display is restricted to users with appropriate access rights based on their data relevance. Financial matters are limited due to the author's constraints in obtaining comprehensive data and information. The system does not offer item inventory calculations or comprehensive reporting. The report page serves only as a record until the order process is complete.

Prototype Results

The implementation of the system utilizes a combination of HTML, CSS, and PHP programming languages, all of which are orchestrated through the CodeIgniter framework to ensure efficient and structured development. The following image illustrates the initial page display as rendered in the Google Chrome browser, showcasing the meticulous integration of these technologies to produce a seamless and user-friendly interface.
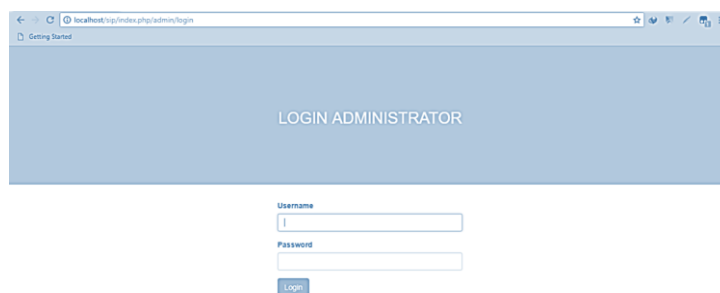
Figure 5. Login Page Prototype Results

CONCLUSION

Based on the data analysis and discussion regarding the development of the sales information system for the Educational Book Data Consultant (EBC) and Senior Educational Book Consultant (SEBC) at KudeStation, several conclusions can be drawn. Firstly, the system mitigates the risk of losing sales data and personal data of EBCs by implementing a robust database storage system. Secondly, it enhances data search efficiency by replacing manual processes with computerized search features. Thirdly, it simplifies data processing through the proposed system, facilitating the creation and management of sales information. Lastly, the system provides real-time sales information to leaders via a web-based platform, enabling data access from any location post-implementation.

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