

Design And Development of Car Sparepart Sales Information System For Web-Based Using RAD Method On UMKM Sinar Seroja

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ABSTRAK

UMKM Sinar Seroja merupakan perusahaan yang bergerak di bidang asesoris dan suku cadang mobil. UMKM Sinar Seroja ingin membangun sistem yang terintegrasi, karena sering terjadi kesalahan dalam pendataan dan pengolahan data transaksi penjualan tradisional yang dilakukan yaitu data inventory dengan data transaksi penjualan pada sistem tradisional dan tidak terintegrasi. Hal ini menimbulkan kesulitan dalam pencatatan dan pengolahan informasi tentang transaksi penjualan dan persediaan. Pembuatan sistem informasi penjualan terintegrasi berbasis web ini diimplementasikan dengan menggunakan metode *Rapid Application Development* (RAD). Hal ini terbukti setelah dilakukan Uji Black Box testing dengan hasil rata-rata 88,3% menunjukkan telah berhasil diimplementasi Aplikasi berbasis web. Dengan adanya sistem informasi penjualan berbasis web yang terintegrasi maka pelanggan dapat mengatasi permasalahan yang ada sehingga lebih mudah dalam menyimpan dan mengolah data transaksi penjualan dan gudang. Sinar Seroja juga membutuhkan sistem yang dibuat sebagai media penyimpanan data transaksi, karena menghindari korupsi dan kehilangan data dibandingkan dengan dokumen fisik.

ABSTRACT

UMKM A business that deals in auto accessories and parts is called Sinar Seroja. UMKM Sinar Seroja wishes to create an integrated system because errors frequently occur in the data collection and processing of traditional sales transaction data, namely inventory data with sales transaction data in a traditional system that is not integrated. This makes it tough to record and process data regarding inventory and sales transactions. Rapid Application Development (RAD) is a technique used to create a web-based integrated sales information system. This was proven after the Black Box testing was carried out with an average result of 88.3% indicating that the web-based application had been successfully implemented. Customers may get around current issues so that it is simpler to save and handle sales and warehousing transaction data with an integrated web-based sales information system. Additionally, Sinar Seroja needs a system to be developed as a medium for transaction data storage because it.

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INTRODUCTION

There have been many changes in the current era, and these changes occur very quickly. Differences that exist require humans to adapt and follow the changes that occur (Nuh, 2021). Changes occur very quickly. The most significant are changes in Technology and Information (Asrinadia Kurniati et al., 2019). Information technology has developed so that all activities carried out by humans require information technology (Yusuf & Wijanarko, 2019).

One area that requires information technology in the current era is a company engaged in trading (Nuryasin et al., 2021). A company needs information in the form of sales that have been made to make a decision, and this decision will be helpful in forecasting sales. Of course not limited to sales, where the existing information system can also be used for purchasing, finance, and inventory in a company. The information provided on the website makes it easy for internet users to search for information (Najwaini et al., 2020).

The previous research was conducted by J.R Sagala with a research entitled Rapid Application Development (Rad) Model in the Development of Teaching and Learning Scheduling Information Systems. The method used in system design and development is Rapid Application Development (RAD). (J.R Sagal et al, 2018). The research was conducted by Rudi Sutomo and Johny Hizkia with the title Design and Build of Web-Based Drug Stock Management Applications with the DSS Approach Moora's method shows the existence of drug stock management using application development using RAD and from this research it became an idea to conduct management research on sales and supply transactions in SMEs Sinar Seroja. (R. Sutomo et al., 2022).

Sinar Seroja is a business engaged in the field of car equipment and car spare parts. Sinar Seroja is one of the car spare parts selling agents that has done a lot of transactions. Sinar Seroja has suppliers from various factories from Palembang, Lampung, and Jakarta for the supply and purchase process. To make a purchase, you must place an order in advance for the car spare parts you want. For the sales process, Sinar Seroja records every transaction that has been made, and the sales record will be used as a sales archive. For supplies, Sinar Seroja checks manually on existing goods, if the stock of goods is exhausted and the minimum is limited, the responsible section will record the existing stock and will inform the responsible department so that as a result data processing will take a long time. Of course, data processing such as inventory is very important for the company. With the increasing number of incoming goods data, the more sales will occur, so it is necessary to create an information system for recording data for sales and inventory.

Therefore, we need an information system, where the information system to be created is a connected and integrated application. To form a good information system, an application will be built using PHP. The developed information system will be networked and integrated, making it simple for businesses to record and handle sales transaction data. Due to this, a web-based information system application must be created. In order to do this, MySQL will be used as the design database, and PHP will be utilized to create the apps. Based on this background, it will be easier for companies to handle the inventory data collection process, where the system to be created will be integrated with each other. With the creation of a new system, it will be easier for companies to collect data in sales, purchases and inventory. Where the system to be made is interconnected and integrated with each other.

RESEARCH METHODS

A company called Sinar Seroja specialises in the automotive equipment and spare parts industries. One of the companies that sell auto parts and have already completed a significant number of transactions is Sinar Seroja. To make a purchase, you must place an order in advance for the car spare parts you want. For the sales process, Sinar Seroja records every transaction that has been made, where the sales record will be used as a sales archive. For supplies, Sinar Seroja checks manually on existing goods, if the stock of goods is exhausted and the minimum is limited, the responsible section will record the existing stock and will inform the responsible department

so that it can make purchases through suppliers. Because of frequent mistakes made when sales personnel manually records and processes sales transaction data, as well as a lack of integration between inventory data and sales transaction data in the system, Sinar Seroja wishes to establish an integrated system.

Rapid Application Development (RAD)

In making the system the author uses the Rapid Application Development (RAD) method to create and develop the system, because the application to be developed is a simple application and can be produced quickly, complying with the RAD technique used for applications created with a long-term outlook. short time. The following is an image of the application development using the RAD model (Rudi Sutomo et al., 2022).

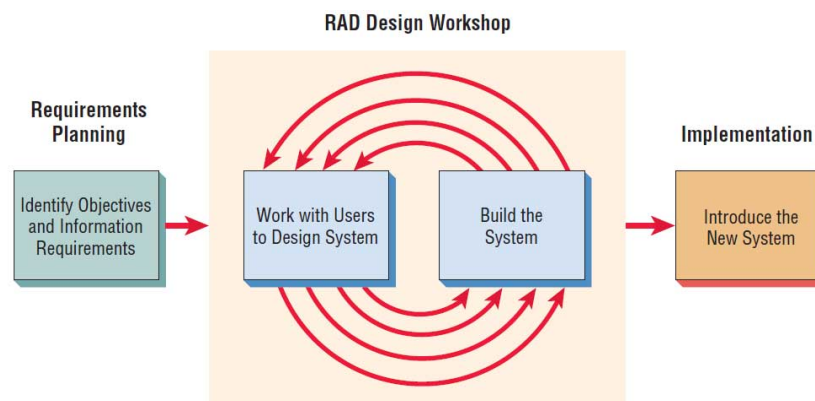


Figure 1. Rapid Application Development

1. **Requirement Planning**
Requirements Planning in this planning stage, Sinar Seroja will conduct interviews and observations to find out the needs and desired features in making this information system. The interview will be conducted with Mr. Ruslan as the business owner of Sinar Seroja.
2. **Design System**
Design System in this design stage, the development and Workflow for the design of the information system will be implemented. The creation and development of workflows will be carried out using use case diagrams, activity diagrams, class diagrams, and mockups.
3. **Construction**
Construction: In this stage, the creation of an information system will begin. In this stage will create a database design, data dictionary, and coding
4. **Implementation**
Implementation: In this stage, after the planning, system design, and construction stages, the implementation stage will be carried out where in this stage the application and user acceptance will be implemented

Research Framework

In making this information system using the Rapid Application Development (RAD) method, where in the RAD method there are four stages as in the research framework above. The four stages that must be carried out for the manufacture of this information system are starting with the requirements planning stage, the design stage where in this stage the manufacture is carried out such as use case diagrams, activity diagrams, and class diagrams. After that, there is a construction stage where programming is carried out at this stage. The last stage is the stage of introducing the system.

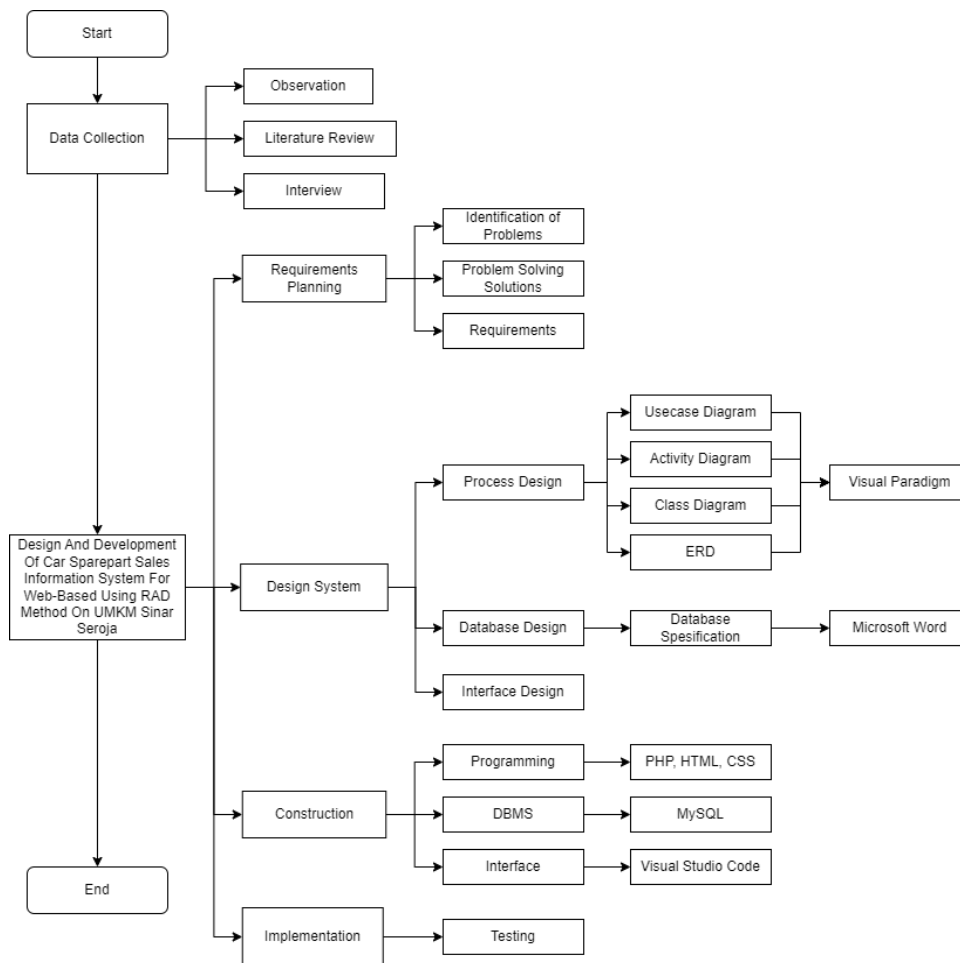


Figure 2. Research Framework

ANALYSIS & RESEARCH RESULT

Requirement Planning

In this stage, to find out the problem needs and user requirements in this study, an interview was conducted with Sinar Seroja. The interview process was carried out with Mr. Ruslan as the business owner of the Sinar Seroja so that the needs needed to make the system run according to the required needs. After conducting interviews with business owners, the question and results are in table 1.

Table 1. Result of the Interview with The Owner of Sinar Seroja

| Question | Answer |
|--|---|
| What system do you use to collect and process information about sales and inventory at this company? | In recording and processing sales data and stock of goods, they still use it manually, where recording sales and stock of goods still uses bookkeeping and handwriting. |
| For recording and processing stock items, what data are usually recorded? | For stock items, we usually only record a list of existing items, the number of items that are still available, and the number of items sold. |

What are the obstacles in your company when carrying out the process of recording and processing sales and stock data?

The problem is usually the recording and processing of data is wrong or inaccurate, for example in the stock of goods, for example there are 3 remaining in stock but only 5 are recorded, due to lack of attention to employees. In addition, if the process of recording and processing data is done manually like this it takes a long time too.

What if an existing notebook is lost or damaged?

If the notebook is lost or damaged, you are forced to buy a new book and re-record it, because if the book is lost or damaged the notes are definitely lost, so you have to re-record them. We also do not have a backup notebook so we have to re-record again.

What kind of system do you need for this company?

To ensure that there are no errors in the recording and processing of data on sales transactions and stock items, a system that can record and process stock data as well as sales data is required.

Are you willing if the system to be made is a web-based system?

What's the difference between a web-based system and the others? Besides, what are the advantages if the system is web-based?

Yes, the difference with other systems is that the system can only be accessed via a web browser. The advantage for the web-based system itself will be easier if you want to develop it further and also the system and data will be easier to integrate.

If so, I don't mind if the system is web-based.

System Analysis & Design

In this case, From the design of the information system, a workflow will be developed and created. The creation and development of workflows will be carried out using use case diagrams, activity diagrams, and class diagrams (A. Y. Sita Ratnaningsih et al., 2019).

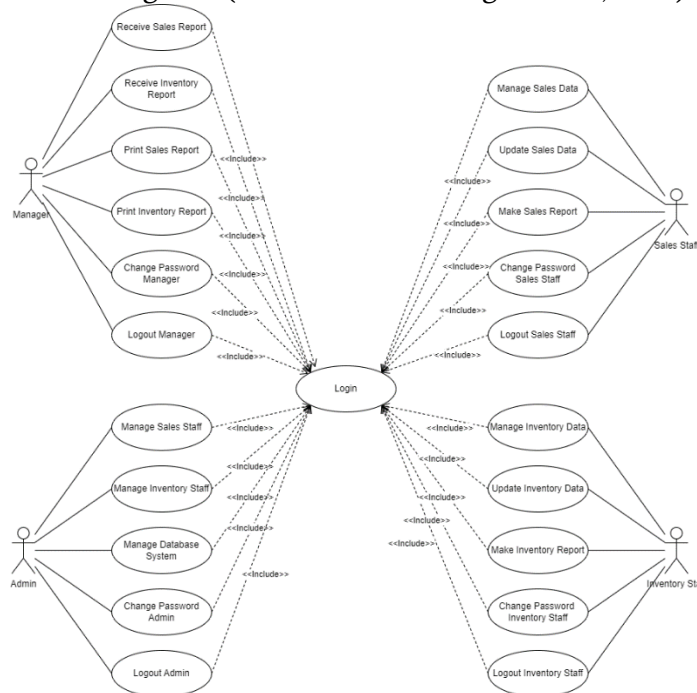


Figure 3. Use Case Diagram

Figure 3 shows a use case diagram, where through the use case diagram above, it can be seen what a series of scenarios can be done by managers, admins, sales staff, and goods staff.

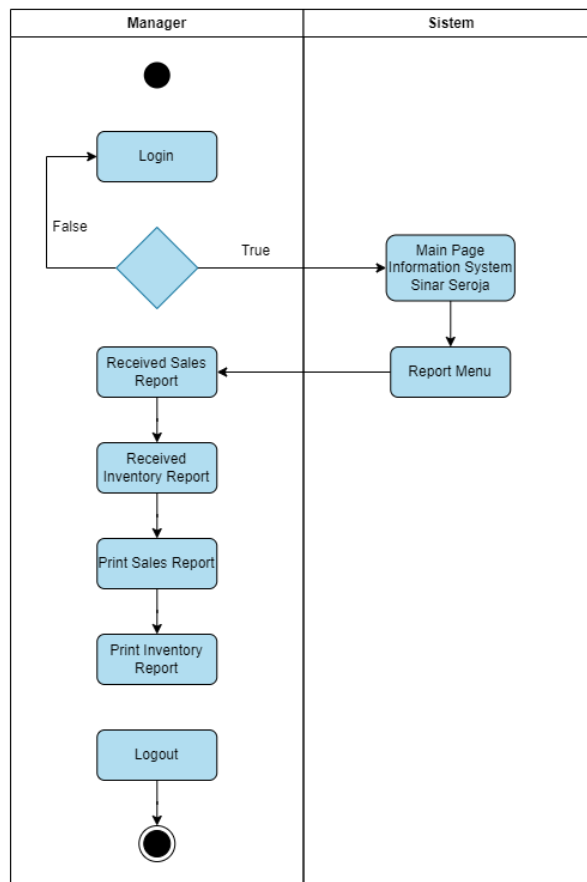


Figure 4. Activity Diagram Manager

Figure 4 shows the activity diagram manager. In this case it can be seen that the manager can see reports that have been made by staff, namely sales reports and also stock reports. In addition, the manager can also print sales reports and inventory reports, if there are no errors in the report.

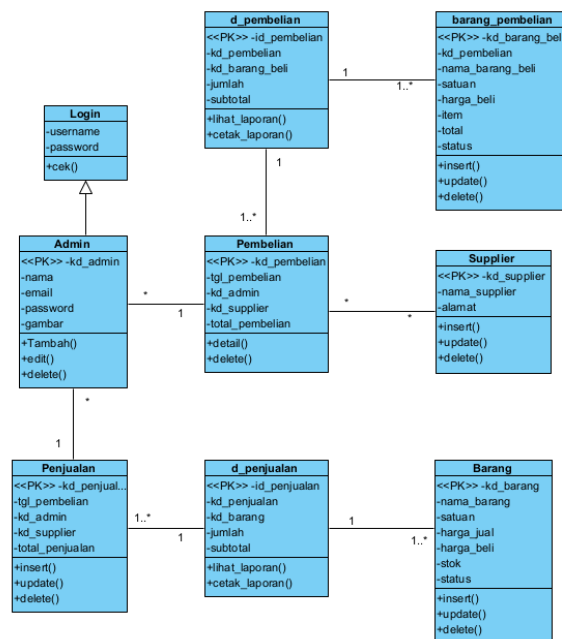


Figure 5. Class Diagram

In Figure 5 shows class diagram. Can be seen in the diagram above illustrates a relationship between objects in a web-based Seroja sales information system.

Construction Phase

The result of this research is an information system website for the Sinar Seroja which is able to do data recording and process transaction sales data and inventory of goods. The following is a screenshot from the Sinar Seroja information system website that has been successfully created.

| No | Id Penjualan | Tgl Penjualan | Item | Total Penjualan | Aksi |
|----|--------------|---------------|------|-----------------|------------------------|
| 1 | PEN00002 | 2022-05-29 | 1 | Rp. 150.000 | Detail |
| 2 | PEN00001 | 2016-05-13 | 1 | Rp. 2.250.000 | Detail |

Figure 6. Website Sales Data Page

On the sales data menu, you can see sales transactions that have been made to Sinar Seroja. Where on this page will display a table containing the sales code, date of sale, number of items, and total sales price. In addition, on this page there is one action, namely details, where if you press the details button it will display a sales invoice that has been made.

| No | Kode Penjualan | Tgl Penjualan | Barang | Satuan | Jumlah | Harga | Total |
|-------|----------------|---------------|-----------------------|--------|--------|-------------|---------------|
| 1 | PEN00001 | 13-05-2016 | Fiber Di Bawah PS 100 | PC | 5 | Rp. 450.000 | Rp. 2.250.000 |
| 2 | PEN00002 | 29-05-2022 | Oh Medoran 5 x L | BTU | 5 | Rp. 30.000 | Rp. 150.000 |
| TOTAL | | | | | | | Rp. 2.400.000 |

Figure 7. Website Sales Report Page

The sales report menu will display all sales reports that have been made. Sales reports can be viewed monthly, weekly or daily. Users can also view all existing sales reports by pressing the All Data button. After that the existing sales report can be printed by pressing the print button.

Figure 7. Website Inventory Page

In this information system, there is also an item menu, which on this page displays the name of the item and the number of items in stock at Sinar Seroja. On this page, you can do two actions, namely edit and delete. In the edit action, the user can change or update the data of items in Sinar Seroja. Users can update the selling price, purchase price, and stock of goods. Delete action is performed if the user wants to delete existing item data.

Testing Result

After the information system has been successfully created, the next step that needs to be done is testing. Where is the stage of testing the information system that has been made to see if there are bugs or errors in the information system (N. M. D. Febriyanti et al, 2021).

Table 2. Black Box Testing Result

| Description | Case | Percentage | Status |
|--------------------|--|------------|--------|
| Login page | Can input email and password, then if login successful it will display the home page | 90% | Pass |
| Home Page | The landing page of the website has successfully created and the users can access the website | 89% | Pass |
| Purchase Data Page | Can see the purchase invoice by pressing the detail button. Can delete purchase data by pressing the delete button. | 86% | Pass |
| Sales Data Page | Can see sales invoices that have been made by pressing the detail button. | 87% | Pass |
| Inventory Page | Can update and change the item data by pressing the edit button. Item data can be deleted by pressing the delete button. | 90% | Pass |
| Sales Report Page | Can display sales data on a monthly, weekly, and daily basis. Can print sales reports by pressing the print button | 88% | Pass |

CONCLUSION AND SUGGESTION

Conclusion

After going through the stages of designing an information system website for the Sinar Seroja the following conclusions can be drawn:

1. This was proven after the Black Box Testing was carried out with an average result of 88.3% indicating that the web-based application had been successfully implemented.
2. Existing issues can be resolved with the use of this integrated sales information system, which also makes it simpler for Sinar Seroja to track and process sales transaction data and stock goods.

3. In order to reduce errors in collecting and processing data on sales and stock transactions, this system has a report feature that allows you to print and create reports of transactions that have been completed.
4. As a result, that it will prevent damage and data loss in comparison to physical papers, the system that has been developed also supports Sinar Seroja as a medium for storing transaction data.

Suggestion

Based on the information system that has been made of course the making of this information system is not perfect where, the information system that has been made can be developed even better. To develop an information system to be even better, the suggestions that can be given are as follows:

1. It is recommended that the information system that has been created can be developed into a better system for the future, both in terms of design, appearance, and also functions in the information system.
2. It is recommended for the future that processes such as employee attendance can be applied to this information system.
3. It is recommended that in the future the security of this information system can be further developed to maintain data and security in the information system so that there is no intervention from outsiders.

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