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IMPLEMENTATION OF THE SELECTION SORT ALGORITHM IN THE APPLICATION OF WEB-BASED NETWORK INSTALLATION ORDERING AND REPAIR SERVICE OFFERINGS AT PT ARYA PERSADA UTAMA

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ABSTRACT

Along with the rapid advancement of internet technology and the ease of access to the use of this technology today, it raises the idea of its utilization in helping project managers who in this case represent the owner (owner) in order to supervise and control the projects under their auspices.

(owner) in order to be able to supervise and control the projects under his auspices. In terms of working time, project managers have limitations, especially for supervising and controlling because the projects they handle are often more than 1 (one), whose activity times run simultaneously. So that the existing information system can be stored and easily accessed at any time by the project owner (owner), a web server is needed that can accommodate the data and information that has been done. Information in the existing database is not only intended for the project owner (owner) but can also be accessed by other parties who have a certain interest in the project. The availability of an integrated project performance report system and project work status information, can facilitate and speed up the reporting process to the project owner (owner). Development of the latest project management information system using the web-based Selection Sort Algorithm Method which is one of the methods in project management that is widely used, especially for companies engaged in software development. This application can provide real-time data or information through the Dashboard

page provided by the manager. All activity history both problems and solutions during project implementation are recorded in this application through the reports provided, so that it can be a reference for planning and implementing similar projects later.

INTRODUCTION

The rapid advancement of technology today is evident in the sophistication of various devices and features found in computers, laptops, smartphones, and other gadgets we use daily. In providing various repair services to customers, many still use manual systems, resulting in inefficiencies as customers are required to visit the location to request repairs. This makes it difficult for customers who are far from the location to access information and make reservations. To visit the location, users will naturally need more time to arrive. With repair and network installation services available online, users can access information and make reservations anytime and anywhere. This makes it easier for users to order repair and network installation services online according to their needs, accessible without time and location constraints.

The research problem formulation in this study is how to build an Website-based repair service booking application, and also how to implement the selection sort algorithm in the Android-based repair booking application. The aim of this research is to examine the results of implementing the selection sort algorithm in an Android-based repair service booking application.

LITERATURE REVIEW

A. Application

An application is a computer program that can be used on a variety of electronic devices, especially on a computer or laptop or mobile phone (Larasati et al., 2021). Having an application on a device will make it easier for humans to complete their tasks according to the development of the application. The convenience provided by the application will adapt to the needs of its users so that in its implementation will facilitate the goal that will be achieved by its users.

An application is software that integrates various specific features in a way that is accessible to users. With millions of applications available in the App Store and Google Play Store, application services have become a key component of the mobile economy. Since the launch of the iPhone in 2007 and the App Store in 2008, applications have become the primary means for users to engage in the smartphone revolution. Additionally, applications have led to the emergence of several billion-dollar industries. For example, revenue from mobile games now exceeds $30 billion per year, while applications from social media companies like Facebook significantly

contribute to their multi-billion-dollar revenue each quarter. This surge in popularity has a direct impact on advertisers, as the widespread use of applications makes mobile advertising an increasingly important channel for companies. Whether companies generate revenue through applications or mobile ads, applications have made mobile advertising a valuable industry on a global scale. Moreover, mobile applications are also significant due to their versatility, offering various conveniences in everyday life.

B. Information System

Information Systems are a collection of well-processed and accurate data that can be effectively communicated and received (Putri Primawanti & Ali, 2022).Information systems can be defined as tools that provide the necessary services for users to obtain information and complete tasks quickly and effectively.

C. Website

A website is a collection of web pages hosted within a domain or subdomain on the World Wide Web (WWW). People visit websites primarily to access the content they offer. Examples of popular websites include Google.com and Facebook.com. Websites facilitate rapid dissemination of information across vast areas, unrestricted by distance or time. As a result, they serve as essential tools for obtaining and managing information. A website consists of interconnected pages, where all files are linked to one another. The web itself comprises these pages, with the main page often referred to as the homepage (Susilowati & Umami, 2022).

D. Selection Sort Algorithm

The selection sort algorithm, also known as the minimum method, is based on selecting the minimum element as the foundation for sorting. The process involves choosing the minimum element and swapping it with the last element for ascending order, or with the first element for descending order. In this algorithm, the largest value is identified from the data set and replaced with the rightmost data element (Sandria et al., 2022).

The advantages of the selection sort algorithm include its simplicity and ease of implementation. This algorithm accelerates the search process, facilitates the identification of maximum or minimum data, and simplifies data merging. Additionally, its complexity is relatively low.

The drawbacks of the selection sort algorithm include the need for additional methods, challenges in reassembling data, and reduced practicality for datasets exceeding 1,000 elements due to increased complexity.

RESEARCH METHODS

This research was conducted at PT Arya Persada Utama, located at Jl. Kapten Muslim Gg. Mortir, Kelurahan Helvetia Timur, Kecamatan Medan Kota. For the execution of this research, the availability of adequate hardware and software is required. The required hardware and software are as follows:

Hardware	*Spesfication*
Processor	AMD A4-9125 Radeon R4, 5 Compute Cores 2c+2G+2.3Hz
RAM	8 GB

Software	*Spesfication*
Operation System	Windows 11 Home Single Language 64 Bit
Text Editor	Microsoft Visual Studio Code
Developer Applications	Android Studio
Programming Languages	Kotlin

The stages of research to be undertaken in this study are as follows:

1. **Literature Review**
   During this stage, data collection is carried out by studying and selecting relevant books, journals, papers, and various websites related to the research.

2. **Needs Analisys**
   This analysis is conducted to determine the scope of the application for smartphone and laptop repair services that will be developed.
3. **Application Design**

This stage involves designing the workflow of the learning application and creating the application's user interface layout.

4. **Program Testing**
   In this stage, testing is conducted on the application that has been developed.

RESULTS AND DISCUSSION

The results of this study can be seen in the following images :.

Figure 1. Home Page

In figure 1 illustrates the application testing when accessing and viewing the available services. In this interface, users (admin, technician, and customer) must log in according to their access rights.

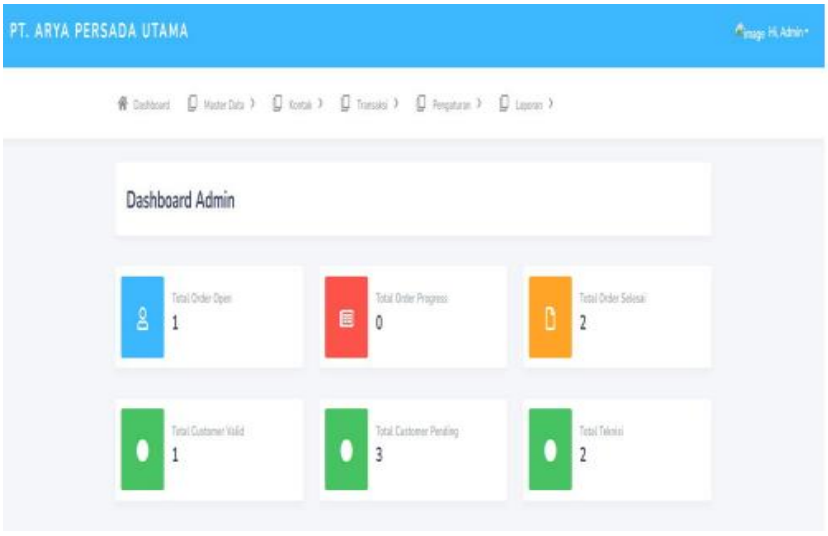

Figure 2. Admin Page

The admin interface page is a page that appears when the application is accessed by the admin to manage the system about ordering perb services.

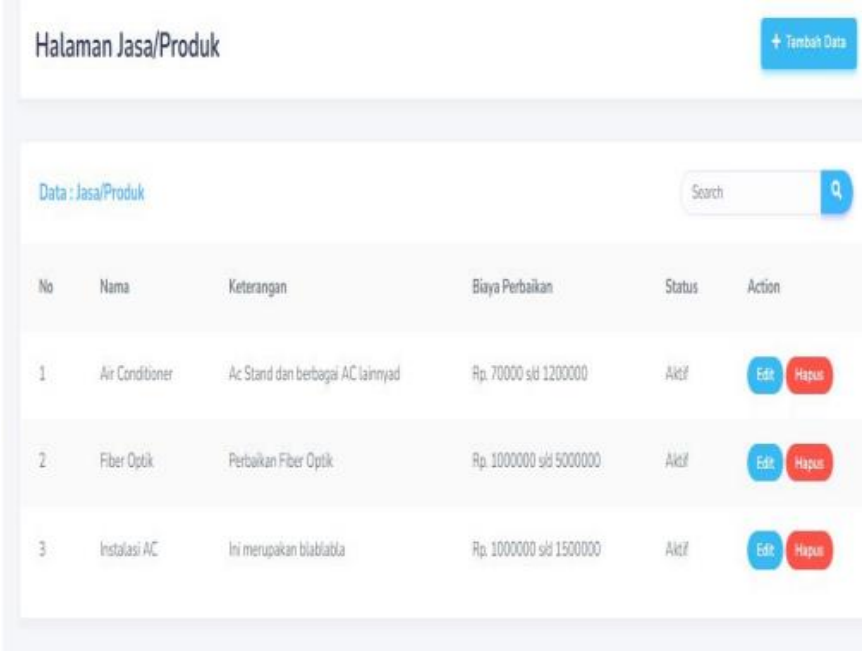

Figure 3. Service description input display

In the service description input display contained in the application, the admin can add and change the description of services that can be offered to customers for Physical repairs.

CONCLUSION

The conclusions of this research are:

1. With a website-based system, it will facilitate the process of managing services by admins, updating service status by technicians and information needed by users.

2. The management of the system built can be accessed as needed by the admin and will make it easier for users and technicians to be able to provide information to each other regarding the services offered.

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