Information Systems of Official Trips at General Election Commission Office (KPU)

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INTISARI

Terdapat beberapa alasan yang menyebabkan pihak Kantor Komisi Pemilihan Umum Kabupaten Indragiri Hilir menginginkan suatu sistem informasi perjalanan dinas. Alasan tersebut antara lain: selama ini pembuatan surat perintah perjalanan dinas menggunakan *Microsoft Word*. Sehingga sering terjadi kesalahan pengetikan dalam penginputan data sehingga pembuatan surat perintah perjalanan dinas dilakukan berulang-ulang, susahnya pencarian data perjalanan dinas yang telah lalu jika sewaktu-waktu dibutuhkan. Untuk mewujudkan hal tersebut, diperlukan sebuah proses pengembangan perangkat lunak berupa sebuah sistem informasi perjalanan dinas Kantor Komisis Pemilihan Umum Kabupaten Indragiri Hilir. Adapun proses-proses yang dilakukan adalah studi literatur, identifikasi kebutuhan, perancangan atau desain, implementasi atau coding, pengujian atau testing. Pemodelan sistem yang digunakan adalah bahasa pemodelan UML (*Unified Modeling Languange*) berbasis *web* dengan bahasa pemrograman PHP (Hypertext Preprocessor) dan database mysql. Sistem informasi perjalanan dinas Kantor Komisi Pemilihan Umum Kabupaten Indragiri Hilir yang telah dibangun ini memiliki fungsionalitas sesuai dengan kebutuhan pengguna yakni: pembuatan surat tugas, surat perjalanan dinas, daftar pengeluaran riil, laporan rekap perjalanan dinas dan fasilitas backup dan restore data. Dengan adanya sistem informasi perjalanan dinas ini diharapkan dapat membantu staff keuangan dalam pembuatan surat perintah perjalanan dinas dan memudahkan dalam pencaraian informasi terkait perjalanan dinas yang telah lalu jika sewaktu-waktu diperlukan.

Kata kunci: Sistem Informasi Berbasis *Web, Aplikasi* Perjalanan Dinas, Kantor Komisis Pemilihan Umum Kabupaten Indragiri Hilir.

ABSTRACT

There are several reasons why the General Election Commission Office of Indragiri Hilir Regency wants an official travel information system. These reasons include: so far, making official travel orders using Microsoft Word. So that there are frequent typing errors in data input so that the making of official travel orders is carried out repeatedly, it is difficult to search for data on past official trips if it is needed at any time. To achieve this, a software development process is needed in the form of an official travel information system for the General Election Commission Office of Indragiri Hilir Regency. The processes carried out are literature study, identification of needs, design or design, implementation or coding, testing or testing. The modeling system used is the web-based UML (Unified Modeling Language) modeling language with the PHP (Hypertext Preprocessor) programming language and the mysql database. The official travel information system for the General Election Commission Office of Indragiri Hilir Regency that has been built has functionality according to user needs, namely: making assignments, official travel documents, real expenditure lists, official travel recap reports and data backup and restore facilities. With this official travel information system, it is hoped that it can assist financial staff in making official travel orders and make it easier to find information related to past official trips if at any time needed.

Keywords: Web-Based Information System, Official Travel Application, General Election Commission Office of Indragiri Hilir Regency.

INTRODUCTION

Background

Along with the development of information technology, the demand for information continues to grow quickly and accurately[1]. With the development of information technology, it can be said that suitable hardware and software support can help and simplify the process of completing a job. Both government and private agencies certainly need the best solution for managing information and resources in order to achieve productivity, accuracy, effectiveness, and efficiency following objectives. To manage this information, we need a system that is useful and fast. A system is said to be useful if it facilitates the entire work process, one of which is the computerized method. With computers, you can increase speed and reduce errors to achieve energy efficiency and time managing information[2].

At the General Election Commission (KPU) in Indragiri Hilir Regency, most of the works have been done using computerization. One of them is the creation of a warrant for an official trip in Microsoft Word. It is an official letter used for Civil Servants' official works (PNS) / Non Civil Servants. They are instructed to carry out specific tasks to an agency or other government institution both inside the city and outside the region [1].

There are many deficiencies in making a warrant for an official trip, such as typing errors in entering data. As a result, it is made repeatedly. It causes much paper to be wasted, resulting in a waste of costs, and the time required is longer.

When needed, searching for past official trip data is quite challenging due to the obligation to open a storage file included in the monthly Accountability Letter (SPJ) report.

Based on the background above, some problems can be formulated:

1. How to make a warrant for an official trip (SPPD) using Microsoft Word is still ineffective and inefficient due to frequent typing errors that cause paper waste and take a long time.

2. How difficult is it to find information on past official trips if it is needed at any time.

The problems with this official trips information processing application are:

1. The warrant for an official trip application is implemented on a website basis.

2. Applications that focus on the system for making a warrant letter (SPT), a warrant for an official trip (SPPD), and calculating the cost of official trips.

3. This application generates reports in the form of a recapitulation of official trips for employees and all employees.

Literature Review

Information Systems

According to Sutabri [2], the information system is a system within an organization that meets the daily transaction processing needs that support the organization's operations managerial functions with the organization's strategic activities to provide reports needed by certain external parties.

A Warrant Letter

A warrant letter is an official script from a superior addressed to subordinates to carry out tasks by orders from superiors to subordinates, containing orders to carry out specific tasks. It functions as a cover letter in carrying out tasks in his job, or an assignment letter serves as evidence that the person who is given it has the authority to carry out the task assigned to him. It is also useful as proof that he has ever carried out a job, as stated in the warrant letter [3].

A Warrant for an Official Trip

According to Hendry Fonda [1], a warrant for an official trip (SPD) is used for official work purposes such as official agencies and office assignments. In the official service, sometimes a Civil Servant (PNS) / Non Civil Servant is ordered to carry out specific tasks in particular fields or is ordered to carry out assignments to other regions or institutions.

A warrant for an official trip (SPPD) as proof of administrative duties is also accompanied by a letter of assignment issued and signed by the relevant agency's leadership or superior. One of its uses is issued to disburse transportation funds when we travel in a particular institution to smoothing information to be received in an institutional business.

Unified Modeling Language (UML)

According to Ginting [4], Unified Modeling Language (UML) is not a process but a graphical modeling language for specifying, visualizing, building, and documenting all software system artifacts[4]. It aims to identify the parts listed in the scope of the systems being discussed and how the

relationship between the system and subsystems or other systems outside of it.

Database

According to Cosmos Eko Suharyanto et al. in the journal [5], A database is a structured data collection. To add, access, and proceed with data stored in a computer database, a database management system is needed in traditional software development that uses file processing. Each group of users stores their files to handle their data processing applications. This matter causes duplication of data, or it is called redundancy.

Redundancy in the data storage process that occurs repeatedly can cause several problems. First, there is a need to carry out a single logical update, such as entering data on new students several times: once for each file in which student data is recorded. This subject creates duplication of information. Second, storage space is wasted when the same data is stored repeatedly, and this problem can be severe for large databases. Third, files that represent the same data may be inconsistent. It happens because the update is applied to some files but not to others.

XAMPP

According to Fitri Ayu and Nia Permatasari in the journal [10][11], XAMPP is free software that supports many operating systems and is a compilation of several programs. It functions as a stand-alone server (localhost), consisting of the Apache HTTP Server program, MySQL database, and a language translator written in the PHP and Perl programming languages. XAMPP is a web server[12].

MySQL

According to Cosmos Eko Suharyanto et al. in the journal [7], MySQL is the most popular open-source database globally. With proven performance, reliability, and ease of use, MySQL has become the leading database choice for web-based applications used by high-profile web properties, including Facebook, Twitter, YouTube, Yahoo!, and much more[5].

Kata "SQL" dari "MySQL" adalah singkatan dari "*Structured Query Language*". SQL adalah bahasa standar yang paling umum digunakan untuk mengakses database[13]. Bergantung pada lingkungan pemrograman yang kita pakai, kita bisa

memasukkan SQL secara langsung (misalnya, untuk men-generate laporan), memasukkan pernyataan SQL ke dalam kode yang ditulis dalam bahasa lain, atau menggunakan API khusus yang dapat menyembunyikan sintaks SQL.

PHP

According to Bayu Rianto and Rini in the journal [8], PHP stands for Hypertext Preprocessor, which is used as a server-side scripting language in web development embedded in HTML documents. PHP users allow the web to be dynamic so that the website's maintenance becomes more comfortable and more efficient. PHP is open-source software that is distributed and licensed free of charge [6].

METHOD

The flow chart of the Official Travel Information System at the General Election Commission Office of Indragiri Hilir Regency can be seen in Figure 1:

Figure 1. SPPD Informatic System Flowchart

1. Data collection
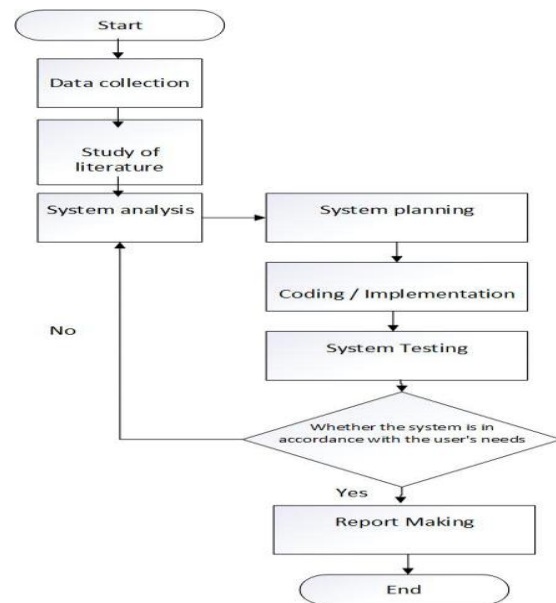
In the data collection process, a software system needs analysis (user) will be carried out and developing functional documents by conducting interviews with the Head of the Finance Subdivision, Mr. making an official travel information system at the General Election Commission Office of Indragiri Hilir Regency.

2. Study of literature

Literature study is carried out by studying and understanding the literature related to research and studying matters related to the design of an official travel information system.

3. System analysis

System analysis is the earliest stage of system development which is the foundation in determining the success of the resulting information system. This stage is very important because it determines the form of the system to be built.

3.1 Analyze the running system

In general, the system that is running in the process of an official travel warrant for the General Election Commission Office of Indragiri Hilir Regency can be described in the form of a Use Case Diagram in Figure 2:
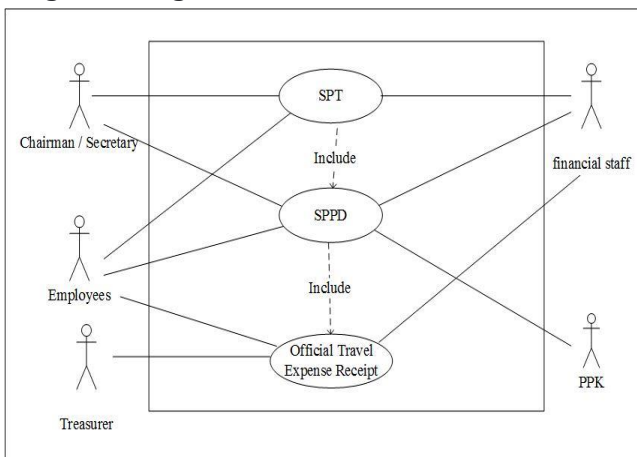
Figure 2. SPPD Use case diagram design

The flow of the official travel information system running in the KPU Office of Indragiri Hilir Regency is as follows:

1. Chairperson / Secretary gives out-of-town duty orders to employees.
2. Finance staff make SPT (Task Order), SPPD (Official Travel Order) and Official Travel Expenses Receipt based on the SPT received.
3. The Chairman / Secretary signs the SPT and SPPD sheet page 2 (two).
4. PPK (Commitment Making Officer) signs the SPPD Sheet page 1 (one).
5. Expenditure Treasurer pays receipts for official travel expenses to employees.
6. Employees who carry out outside official duties sign official travel expense receipts and receive official travel expenses, and bring SPT, SPPD to be brought to the destination agency.
7. After the employees who carry out external service duties return, the SPPD sheets that have

been signed and stamped by the agency of the destination agency are submitted to the Finance Staff.

4. System Design

4.1 Use case diagram
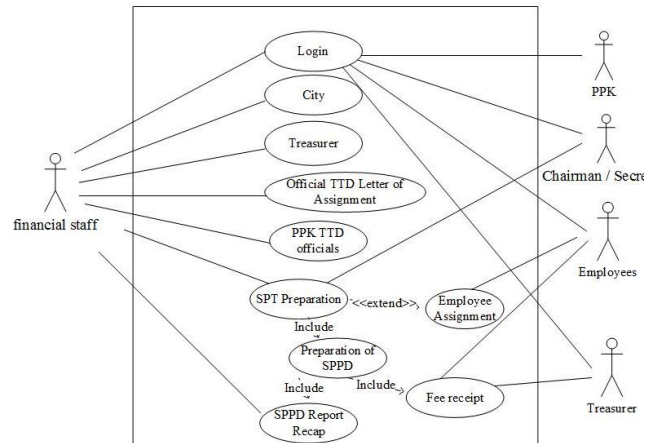
Figure 3. Use Case Diagram of the SPPD that is running

The use case diagram of the official travel information system can be seen as in Figure 3 above is the design of the SPPD use case diagram. In this use case diagram design, there are 5 actors who are interconnected. The Chairman / Secretary orders the Finance Staff to make SPT. To start the Financial Staff Process, they must first log in, after a successful login, the Finance Staff can manage city data, treasurer data, data on TTD assignment letters, data on TTD PPK officials, making SPT. In this design, it is enough to make an SPT, the SPPD will automatically be inputted and will produce a recap of the SPPD report, a new receipt can be made if the SPT has been made. After all the processes are complete, the Finance Staff submits the SPT and SPPD Page 2 to the Chair / Secretary to be signed, then the SPPD page 1 is signed by the PPK (Commitment Making Officer). After everything is signed, the Finance Staff will hand over to the treasurer the amount of receipt for official travel expenses to be paid, and the treasurer will pay the money to the employee. The employee signs a receipt for official travel expenses to receive transportation money, lodging and daily money needed during an official trip and receives SPT, SPPD that will be taken to the destination agency as proof of having performed the task.
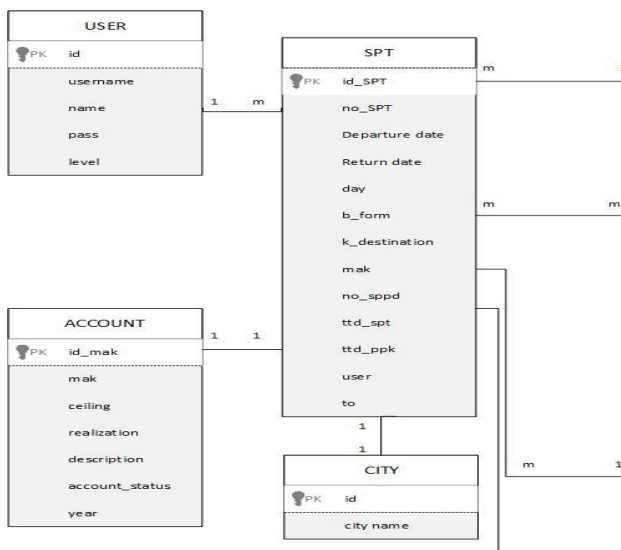
4.2 Class Diagram

Figure 4. Class diagram

In Figure 4 above is a class diagram design of the Indragiri Hilir Regency KPU Service Information System class diagram, from the picture above it can be seen that it consists of 8 interconnected tables, namely: USER, SPT, ACCOUNT, CITY, TTD PPK, PEGAWAI, TTD SPT, BENDAHARA.

RESULTS AND DISCUSSIONS

Implementation

System implementation includes database implementation and interface implementation, and system testing.

Database Implementation
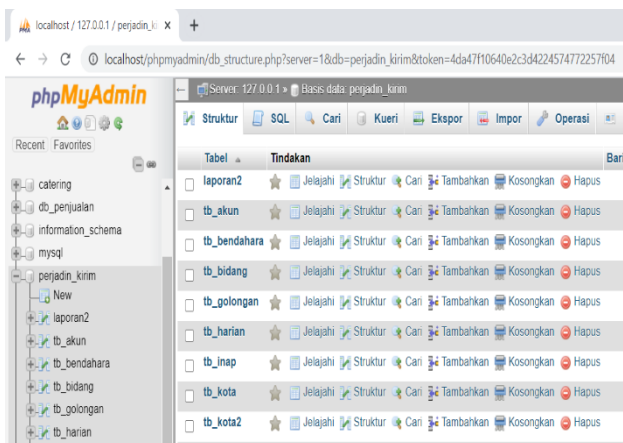
Figure 5. SPPD database Implementation

Figure 5. above contains the tables contained in the SIJADIN database, consisting of various fields that hold the required data.

Implementation of the system interface

The following is an explanation of the system's features and the flow of the official trips warrant information system to know this system better.

Implementation of the system from the admin side

In the official trips information system, some features are managed by the admin in the system. The admin logs in first; after a successful login, the admin can manage several menus consisting of the Master Data menu (city data, employee data, treasurer data, account data, data of signature warrant letter, data of signature PPK Officer), menu Create a warrant letter (SPT), and menu trip summary. The explanation of several processes managed by admin is as follows:

1. Login Form
   The admin uses the login form to log in by entering a username and password; if the data does not match, a notification will appear, as for the system interface as shown in figure 6:
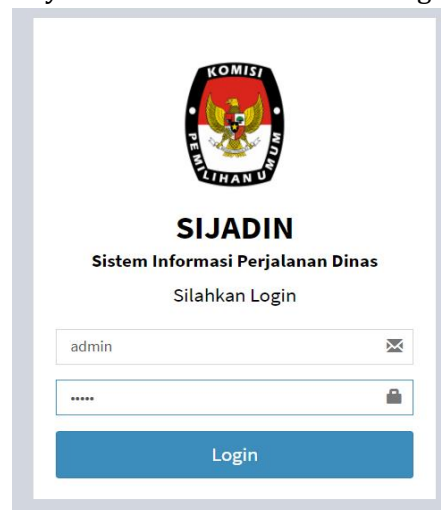
Figure 6. Login Form

In Figure 6. above, can be seen the display for logging into the SIJADIN application.
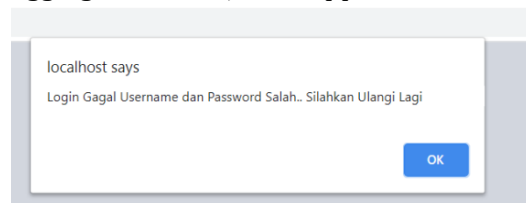

Figure 7. Error Login Form

Figure 7 shows that if the username or password is incorrectly inputted, the message above will **appear.**
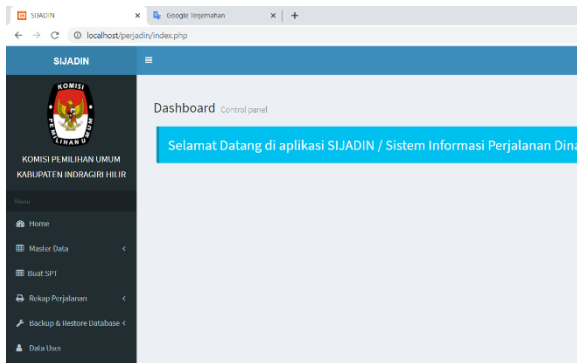

Figure 8. Successful Login Form

Figure 8 above shows that if the login is successful, it will go into the main menu.

2. A Warrant Letter (SPT) Menus
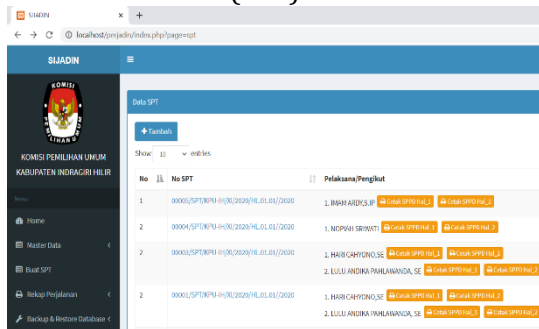The menu contains data on the completeness of the Order Letter (SPT).

Figure 9. A Warrant Letter Data Form

Figure 9 shows that the admin can perform several processes such as adding data, printing a warrant letter (SPT), and deleting a warrant letter (SPT) data. By making a warrant letter (SPT), a warrant letter for an official trip (SPPD) is automatically generated and can immediately print it pages 1 and 2.

3. Receipt menu
The menu contains data regarding the completeness of financing related to official travel.
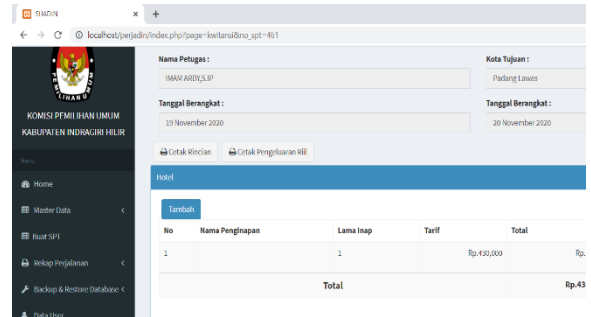
Figure 10. Receipt Forms

Figure 10 shows that the admin can perform several processes such as adding data, changing data, deleting data, printing details, and printing real expenses.

4. Summary of Trip Menus
The menu contains data for employees who have traveled on business.
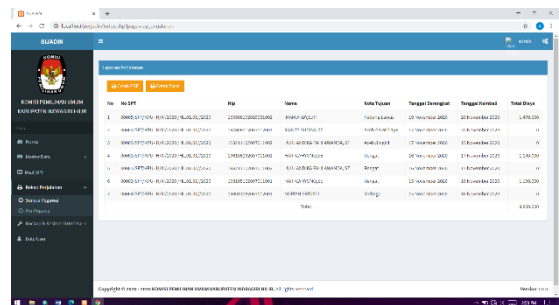
Figure 11. Summary of Trip Menus

In Figure 11. the admin can see the travel recapitulation for all employees and per employee. Here the admin can print a trip summary in PDF or Excel.

5. Interface results of SPT, SPPD, Travel Summary. The display of SPT Output, SPPD Sheet Page 1, SPPD Sheet Page 2, and Travel summary.
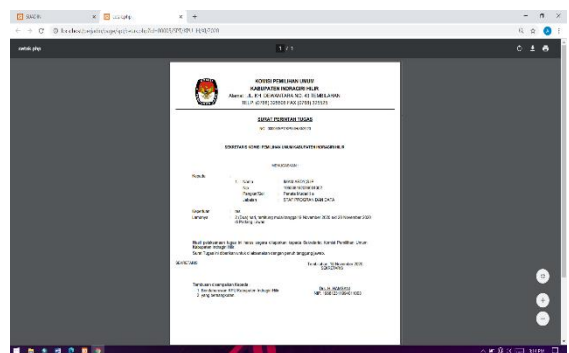

Figure 12. Order Letter Output Form

Figure 12. illustrates the output in the form of a warrant letter form addressed to employees who are going on an official trip.
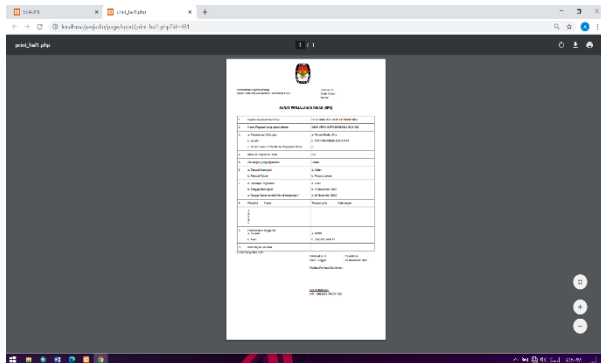

Figure 13. A Warrant Letter Output Form Page 1

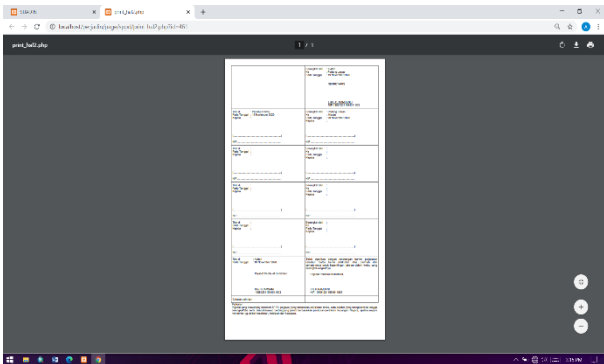In Figure 13. above is the output of a warrant letter on page 1.

Figure 14. Order Letter Output Form Page 2

In Figure 14. above is the output of a warrant letter on page 2.

Figure 15. Trip Summary Output Form

In Figure 15. above is the output of the warrant letter report carried out by all employees.

System Testing

After the systems implementation stage, design results are carried out, and the next step is to test the system. The system testing is done by testing the functionality using the Black-Box Test and White-Box Test methods.

Black-Box Test

Black-Box Test focuses on the software's functional requirements by creating input conditions to train all the systems' functional requirements [9][15]. Table 1 shows the trial results that have been carried out on the system. It is a description of the menu's functions in the application and showing the suitability of the resulting functions when testing. From the test results, it can be seen that all the expected functions have been achieved, marked with a description of "Successful" in the column "Actual Results."

Table 1. Black-Box Test

No	Menus	Description	Expected Results	Actual Results
1	Login	Users on the system enter their username and password according to their access rights and enter the system.	Users can log in to the system and access menus in the system according to user rights.	Successful
2	Data Input	The user enters the required data into the system and will be validated.	When the user enters data into the system, an interactive validation check will be carried out. The final result of the data is that there are no errors.	Successful
3	Data Manipulation	Users can add, change, delete data. The data available in the application are master data, SPT data, official travel recap data	When users add, change or delete masters, data manipulation will be carried out without errors	Successful

White-Box Test

Login Testing

Test the entire login process from entering the username and password, whether it is correct or not. When it is not correct, an error message will

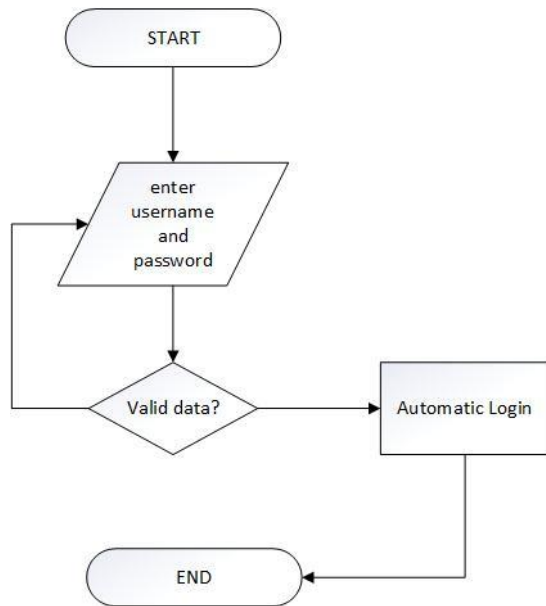appear; if it is true, it will automatically enter the system figure 16.

Figure 16. White Box Testing Login

A warrant letter for Official Trips (SPPD) Data Input Testing

Testing on the SPPD data input, whether the data entered, follows the predetermined data, and the system will validate input from the user. The results are following the predetermined data can be seen in Figure 17.
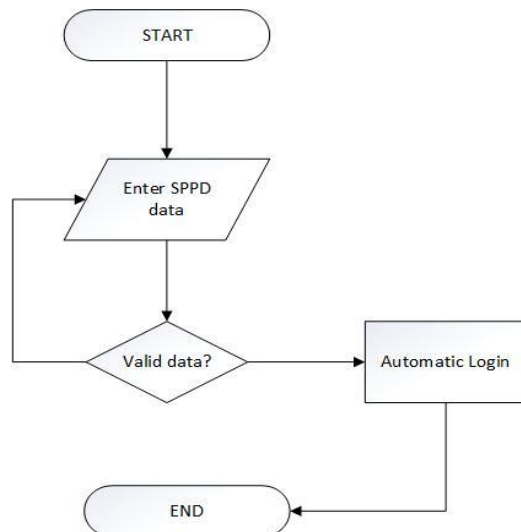

Figure 17. White Box Testing Login

CONCLUSIONS AND SUGGESTION

Conclusions of the Official Trips Information System of the General Election Commission (KPU) Indragiri Hilir Regency are:
1. The results of the research have built the SIJADIN Application (Official Trips Information System)
2. With mapping the warrant letter for official trips (SPPD) application, the flows of making it more efficient.
3. Searching for data on past official trips, if needed, is easy because the application generates a summary of official trip reports.

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