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Blackbox Test on Web Based Employed Attendance Information System Design

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ABSTRACT

The Hapesong New Village Office is a village asset building specifically designated for the operational activities of the Hapesong Baru Village government. The absence of employees at the Hapesong Baru Village office is an important and mandatory role for all employees to be used for official purposes in administration and administration. So far, the government of Batang Toru District, South Tapanuli Regency is still using the attendance system in a manual way that is still not computerized where employees must fill in attendance by writing down attendance signs for example the signature of the employee concerned, this way of attendance has the risk of committing fraud. quite large, because there is still an opportunity to fake employee attendance signs. Data accumulation and errors often become obstacles in processing employee attendance data. Therefore, the authors chose Batang Toru District, South Tapanuli Regency as the object of research. With the development of digital technology, one of which is in the field of computerization, it can help the system in employee attendance. The result of this research is the Design of an Employee Attendance Information System at the Web-Based Hapesong Baru Village Office. In making attendance attendance applications, which are built using a programming language, on the server side is PHP while on the client server side it is HTML. In the database using SQL language with MYSQL DBMS. The modeling of this expert system uses the Unified Modeling Language model.

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1. INTRODUCTION

Technology is very rapidly developing in this modern era, application system developers are competing to create things that are done manually into technology to make daily work easier. One of the technologies that is used to make work easier [1]. One of the impacts of technological advances is that it makes it easier for users to get and process information. This method is very efficient for users, because in a short time users can obtain and process accurate data and information whenever and wherever they are. The development of the technology encourage companies to use new technology that suits the company's needs.

The Hapesong Baru Village Office is a village asset building specifically intended for the operational activities of the Hapesong Baru Village government. The attendance of employees at the Hapesong Baru Village office is an important and mandatory role for all employees to be used for official purposes in the implementation and administration. So far, the government of Hapesong Baru Village, Batang Toru District, South Tapanuli Regency still uses an attendance system in a manual way that is still not computerized where employees must fill in attendance by writing an attendance sign, for example the signature of the employee concerned, this kind of attendance method has a considerable risk of cheating, because there is still an opportunity to forge employee attendance. Data buildup and errors are often obstacles in the processing of employee attendance data.

Software testing is very necessary to ensure that the software that has been or is being created can run according to the expected functionality [2]. The black-box test method is a test that emphasizes the testing of a piece of software in aiding functional validation of the application as a whole [3]. Black box testing is a test that is performed simply by observing execution results through test data and verifying the functionality of the software. Tests are performed without looking at the coding and looking only at the inputs and outputs of the application [4]. The advantages of the black box model, based on more accurate

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performance than expected, less effort to create and simulate models and apply to various buildings [5]. But black box testing has potential drawbacks does not test hidden pages. Black box testing works by observing the output of the web app when the web application is given a specific input. Quite complex web applications usually have a lot of web pages, which are sometimes not all linked or traceable from the first page of the web. These pages are referred to as hidden pages [6].

According to Novita, R., & Hardi, F. R. in the research "Employee Attendance Information System" With the existence of this system and design, making the attendance process of processing employee data can be faster and easier, Admins can see users or employees who are absentee entering and exiting displayed on the admin page, In addition to viewing, admins can also print the processing of absentee data that has been amounted to a month to be archived into employee attendance reports per month [7].

According to Roosdianto, R., Sari, A. O., & Satriansyah, A. in the research "Design and Build an Online Employee Attendance Information System Application". Core Nusa Mandiri With the construction of a web-based attendance system on CV. Cahaya Toner, can facilitate the processing of employee attendance information for the staffing department. This employee attendance system can be easily used and learned by employees, and managers can process employee data and see employee attendance. The development of an attendance information system by utilizing the web makes this system accessible anywhere, because in today's era, almost everyone uses the internet and accesses the web every day. For the development of this website, it is still being carried out such as reading the location of employees if they are absent with the internet network so that they can be monitored for their work location, adding features for applying for leave or permits that can be [8].

According to Fhonna, R. P., & Marzuki, A. R. in the study "Employee Attendance Information System at the Communication and Information Bureau of the North Aceh Regency Regent's Office based on Web". With this information system, it makes it easier for employees to recapitulate from manual to computerized. A web-based employee attendance information system can support and help work and can help company performance, especially in the field of Human Resources, become faster and more practical [9]. According to Subiantoro, S., & Sardiarinto, S. "Designing a Web-Based Employee Attendance System Case Study: Purwodadi Subdistrict Office. Swabumi By using a web-based attendance application, employees can minimize loss and error in recording data both in the attendance process itself and in making attendance reports [10].

According to Cahya, N. "Designing an Employee Attendance Information System at the Satpol Pp and Wh Aceh Offices". With the existence of a computerized system to encourage employees to be more disciplined in improving employee performance in the progress of the company [11]. According to Novianti, T., & Lestari, G. S. "Design and Build an Employee Attendance System Application at Pt. Xy" Employee attendance application at PT. XYZ provides information about employee discipline based on the suitability of the employee's check-in, check out and rest time with the schedule that has been created [12].

According to Yunita, M. "Analysis of Cash Receipt Accounting Information System at Nurul Iman Palembang Foundation" with adnya the information system can facilitate management, plan, monitor, direct, and delegate work to all departments that have a coordination relationship. The information system has a function to improve the efficiency and effectiveness of data presented accurately and in a timely manner [13]. According to Sikumbang, M. A. R., Habibi, R., & Pane, S. F. "Employee Attendance Information System Using RAD Method and LBS Method on Attendance Coordinates". The administrative department can monitor and recapitulate employee attendance data according to the needs of the desired, employees who are doing external service in the office can already do attendance without having to go to the office first and the workload received by employees is slightly reduced [14].

2. RESEARCH METHOD

2.1. Data Collection Methods

The data collection that researchers do uses several methods or techniques. The techniques that researchers use are:

1. Direct Observation
2. Interview with Mrs. Fitri Ani, SE as Kaur General and Planning. at the New Hapesong Village Office by asking him questions directly. The questions asked are as follows:
   1) What is the current employee attendance process?
   2) What are the obstacles faced today about the employee attendance process at the Hapesong Baru Village Office?
   3) What is the solution to make it easier for the General and Planning Kaur as an administrator about the employee attendance process to make it better?
3. Sample Data
   Researchers took and collected several samples / examples of data that can be used in the study, namely employee attendance data.
4. Library Research
   Researchers take related references in the form of journals, books and scientific papers as a theoretical basis regarding employee attendance information systems and PHP programming

2.2. Research Flowchart

System development can take the form of compiling a new system and replacing the old system as a whole or improving an existing system. The methodology of developing an employee attendance information system is described in the form of a

Flowchart, a FlowChart is a chart that logically shows the flow inside a system program or procedure. Flowcharts are used mainly for communication aids and documentation as shown below :

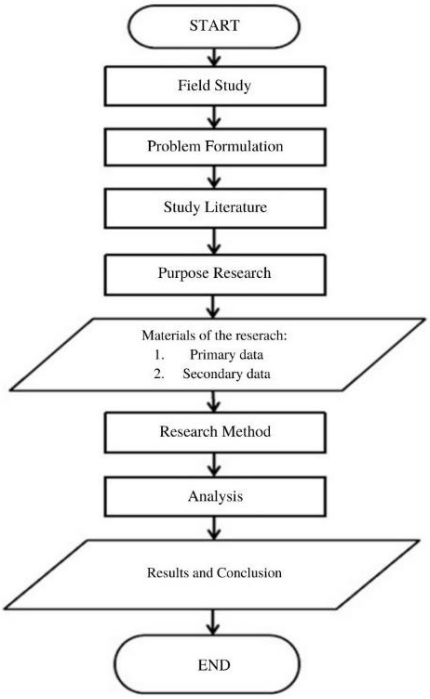

Figure 1. Research Flowchart

3. RESULTS AND DISCUSSION

3.1. New Hapesong Village Device Attendance List

Attendance or attendance list of Village Apparatus is an attendance list written in the attendance list book for Village Heads and Village Devices as shown in figure 2 below.

PEMERINTAH KABUPATEN TAPANULI SELATAN
KECAMATAN BATANG TORU
DESA HAPESONG BARU
Alamat: Desa Hapesong Baru, Kode Pos, : 22738. Desa/Kelurahan, : Hapesong Baru. Kec. Batang Toru. Kab. Tapanuli Selatan

DAFTAR HADIR PERANGKAT DESA
BULAN : MEI 2022

No.	Nama Lengkap	Jabatan	Tanggal																													Ket
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
1	Halomoan	Sekretaris Desa	-	-	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	-	✓	✓	-	✓	✓	
2	Fitri Ani, SE	Kaur umum dan perencanaan	-	-	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	-	✓	✓	-	✓	✓	
3	Agus Warni Sitompul, Am. Keb	Kaur keuangan	-	-	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	-	✓	✓	-	✓	✓	
4	Ikral Toib Siregar	Kasi Pemerintahan	-	-	I	✓		✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	-	✓	✓	-	✓	✓	
5	Jefri Syaputra Harahap	Kasi Pelayanan dan Kesejahteraan masyarakat	-	-	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	s	✓	✓	-	✓	✓	✓	-	✓	✓	-	✓	✓	
6	Sahrin Siregar	Kepala Kampung setia negara	-	-	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	-	✓	✓	-	✓	✓	
7	Arfan Sumitra	Kepala kampung matahari	-	-	I	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	-	✓	✓	-	✓	✓	
8	Mahmud Syarif Sitompul	Kepala kampung Nusa indah	-	-	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	-	✓	✓	-	✓	✓	
9	kader	Kepala kampung suka maju	-	-	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	-	✓	✓	-	✓	✓	
10	Darwin Hasibuan	Kepala kampung kemuning	-	-	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	-	✓	✓	-	✓	s	

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Figure 2. New Hapesong Village Device Attendance List

3.2. *Unified Modelling Language* (*UML*)

Unified Modelling Language (UML) is a modeling language for object-oriented systems or software. Abstraction of basic UML concepts consisting of structural classification, dynamic behavior, and management models we can understand main concepts as terms that will appear when making diagrams and views are categories of the diagram. UML defines diagrams as Use case diagrams, Class diagrams, Statechart diagrams, Activity diagrams, Sequence diagrams, Collaboration diagrams, Component diagrams, and Deployment diagrams [15].

3.2.1. Usecase Diagram

Broadly speaking, the business process system to be designed is depicted with the usecase diagram contained in Figure 3:

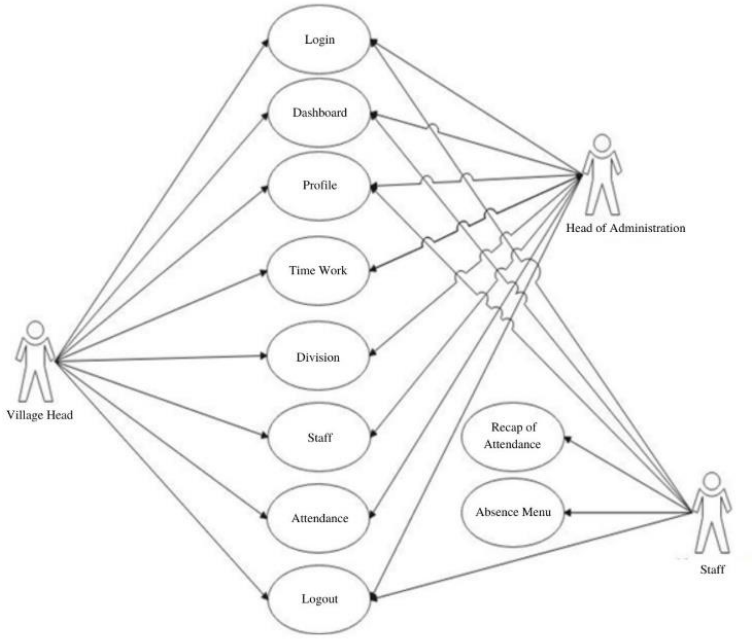

Figure 3. Use Case Diagram of Designing An Information System For Employee Attendance At The New Hapesong Village Office Web-Based

In the use case diagram above there are three actors, namely Kepdes, Kaur General Employee. When going to log in to general kaur, kepdes and employees must enter their username and password first. After logging in the general kaur and kepdes will enter the home page of the karayawan attendance application where here the kepdes is only in charge of monitoring employee attendance while the general kaur can manage employee data, the general kaur can add, edit, and delete employee data. Then general kaur go to the employee attendance data page and manage the employee attendance data. Finally, go to the report page to manage reports and save reports or print employee attendance reports. The use case above also depicts employee actors. Employees perform absenteeism by going to the absence menu that has been owned by each employee. Then the attendance data will be included and employees can see the recap of attendance in the attendance menu.

3.2.2. Class Diagram

This diagram illustrates the structure and description of classes, packages and objects along with their relationships to each other such as containment, inheritance, associations, etc., depicted in figure 4 as follows:

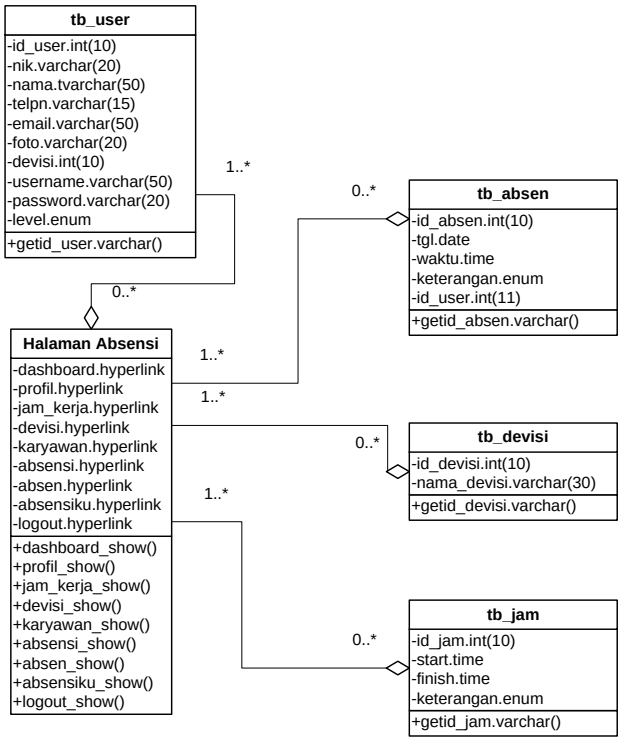

Figure 4. Class Diagram of Designing An Information System For Employee Attendance At The New Hapesong Village Office Based On The Web

3.2.3. Activity Diagram

The business process that has been depicted in the usecase diagram above is described with an activity diagram:

1. Activity Diagram Login general kaur, kepdes and employees

Login activities carried out by admins can be explained with state steps, starting from entering the username, and password. If the account is valid then the system will activate the menu, while if it is invalid, then display the error message shown in the following figure 5.

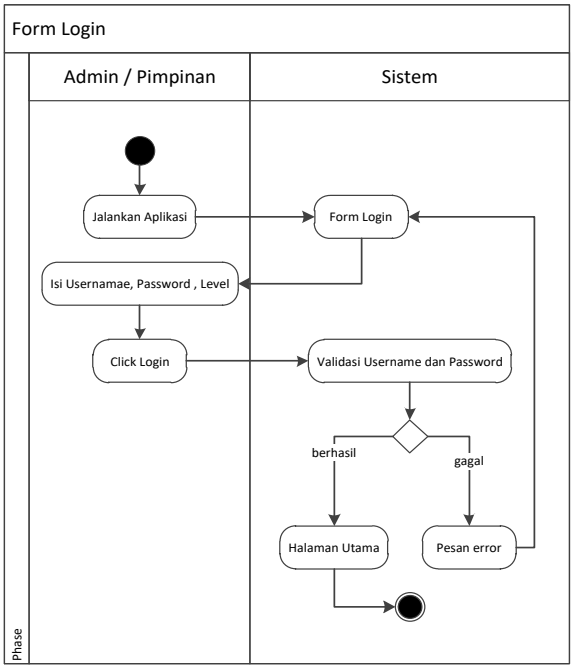

Figure 5. *Activity Diagram Login*

2. Employee Activity Diagram

The activity carried out is the Admin selecting the Employee Data menu. The system will display the Employee Data form. The admin fills in the data, then selects the command button according to needs. Save button to save the data, Edit to change the data, Delete to delete the cancel data to cancel the data filling (empty the form). This can be seen as shown in figure 5 below.

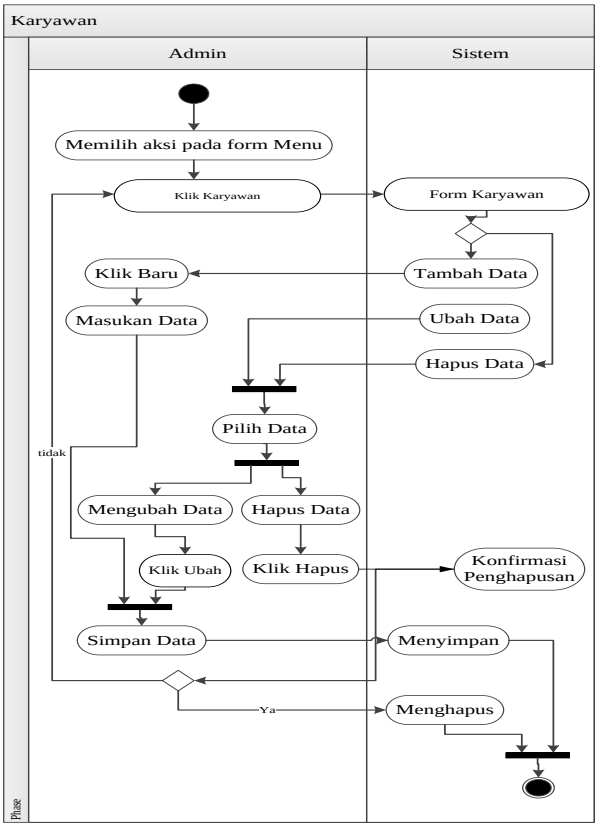

Figure 6. Activity Diagram

3. Attendance Diagram Activity

The activity carried out is the processing of Attendance data. The admin clicks the details button to see the overall data of the Attendance data then the admin clicks the report button to display the employee report. This activity can be seen as shown in figure 7 below.

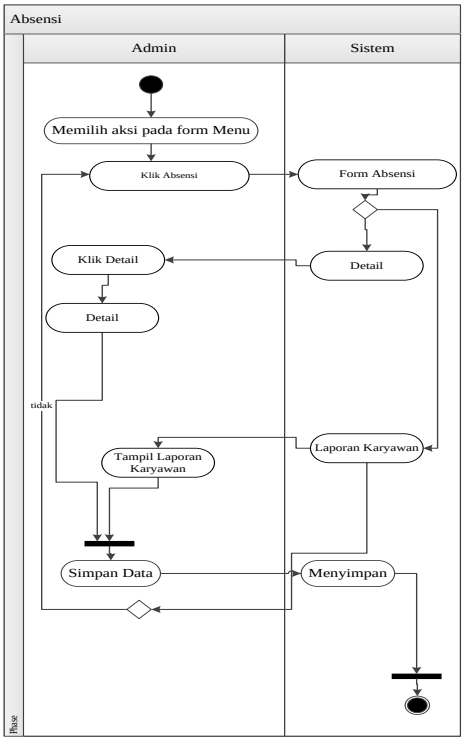

Figure 7. Attendance Diagram Activity

3.2.4 Result and Discussion

The Web-Based Employee Attendance Attendance Application in Hapesong Baru Village includes several functions and modules, including employee working hours, Employee Attendance, and others. But in this test, one of the functions was taken, namely "Show the presence of all employees" which was considered capable of representing other functions in the application. Based on the table test case in the discussion of the previous chapters, researchers can draw the following conclusions:

Table 1. Test Result

ID	Test *Field*	Test Scenarios	Expected Results	Test Results	Conclusion
1	Date	Entering Krakter Date "2022-08-28"	No error message	No error message	Appropriate
2	Entry Hours	Entering Krakter Date “14.06.45”	No error message	No error message	Appropriate
3	Hours Out	Entering Krakter Date “16.00.00”	No error message	No error message	Appropriate

3.2.5. Result View

The following is explained about the appearance of the Employee Attendance Information System which can be seen as follows:

1. Login Display

   The Login view is a menu display that first appears when the program is run. In this view is the admin, employee and kepdes access page. The form of the login page can be seen in Figure 8.

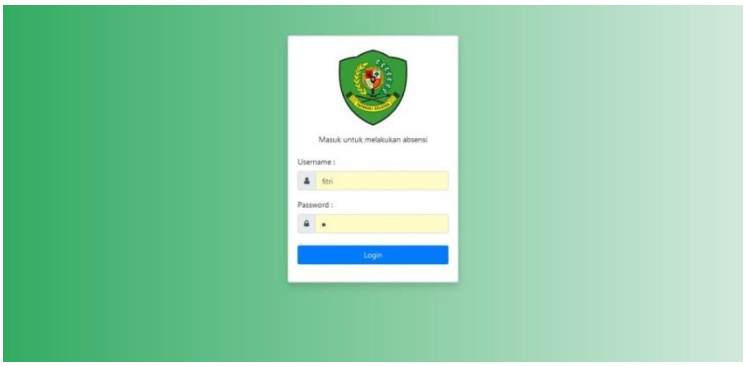

Figure 8. Login View

2. Dashboard Page View

Dashboard View is a menu display that first appears when the program is run after logging in. Inside this dashboard page will display the number of employees and the number of divisions.

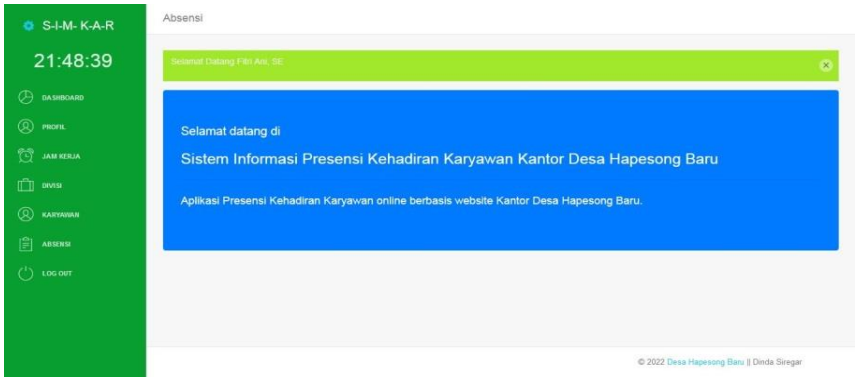

Figure 8. Dashboard Page View

3. Profile Page View

This menu is a menu that is useful for manipulating profile data, in this menu, users can add, change, and delete profile data from the system.

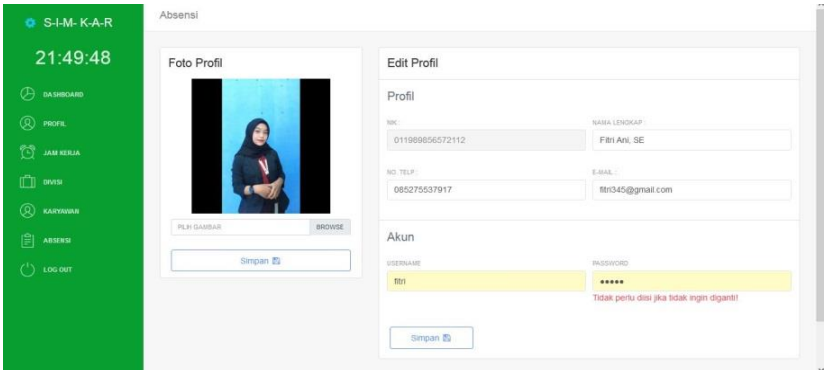

Figure 9. Profile Page Views

4. Working Hours Page View

This menu is a useful menu for manipulating work hours data, and this menu can only be accessed by admins. In this menu, users can add, change, and delete working hours data from the system

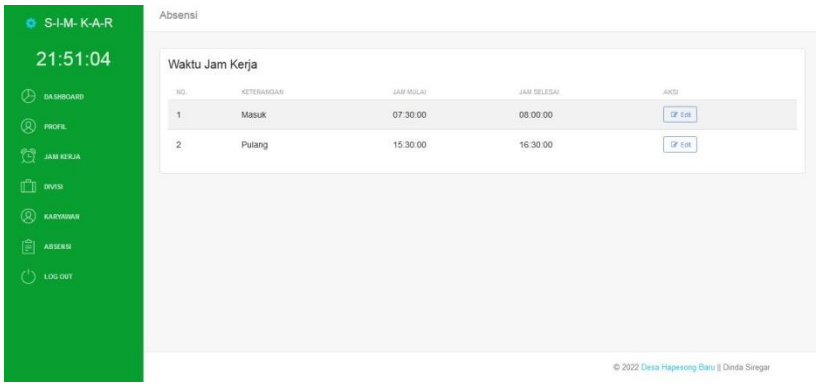

Figure 10. Working Hours Page View

5. Employee Division Page Display

This menu is a useful menu for manipulating Employee Devisi data, and this menu can only be accessed by admins. In this menu, users can add, change, and delete Employee Division data from the system.

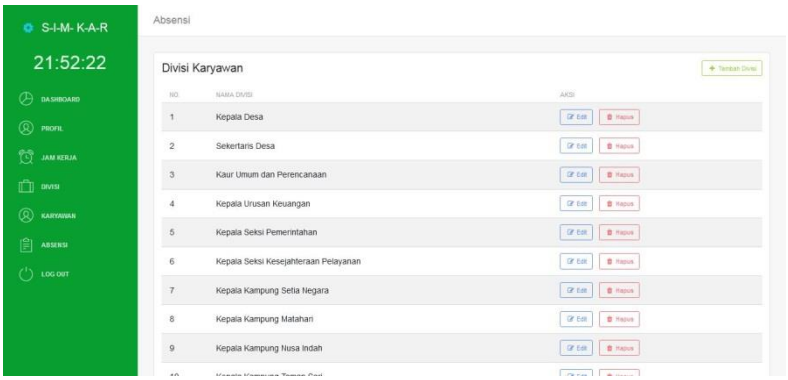

Figure 11. Employee Division Page View

6. Employee Attendance Page Display

This view is an employee attendance display that can be seen employee attendance data by admins and villages in detail.

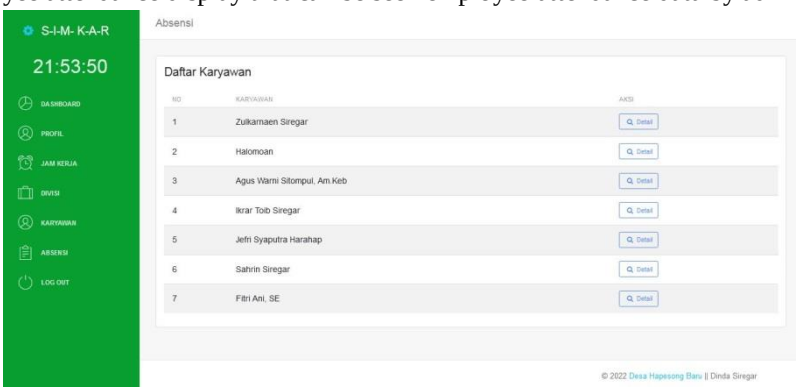

Figure 12. Employee Attendance Page View

7. Monthly Employee Absence Details View

This menu is a useful menu to see employee attendance in detail per month, this menu can be accessed by admins and employees.

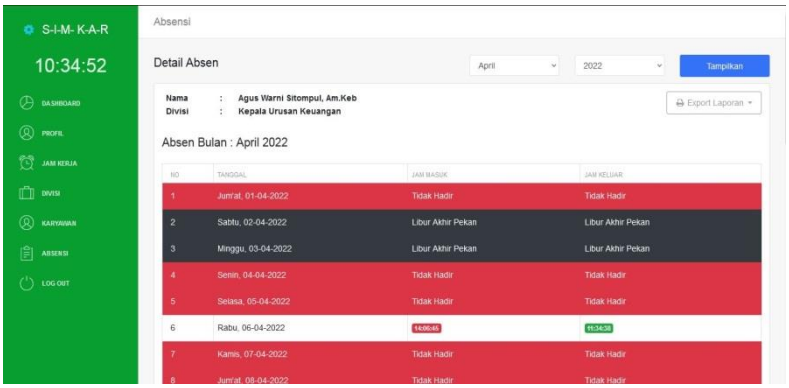

Figure 13. Monthly Employee Absence Details Page View

4. CONCLUSION

Some conclusions that can be drawn through the discussions in the previous chapters in terms of making applications carried out by researchers are as follows:

With the construction of a web-based employee attendance attendance system at the Hapesong Baru Village Office, it can facilitate the processing of employee attendance information for the staffing department. This employee attendance system can be easily used and learned by employees, and general kaur can process employee data and see employee attendance. The development of an attendance information system by utilizing the web makes this system accessible anywhere, because in today's era, almost everyone uses the internet and accesses the web every day. For the development of this website, it is still being carried out, such as reading the location of employees if they are absent with the internet network so that they can be monitored for work locations, adding features for applying for leave or permits that can make it easier for employees and general kaur in managing data.

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REFERENCES

[1] P. Ramadhani, Suendri, and M. D. Irawan, "Sistem Pendukung Keputusan dengan Aplikasi Kombinasi Metode WP dan MAUT Dalam Pemilihan Tanaman Anggrek Kualitas Ekspor Combination of WP and MAUT Methods in Export Quality Orchid Plant Selection Based WEB," *Journal AIRA*, vol. 1, no. 1, pp. 1–11, 2022.

[2] T. Hidayat and M. Muttaqin, "Pengujian Sistem Informasi Pendaftaran dan Pembayaran Wisuda Online menggunakan Black Box Testing dengan Metode Equivalence Partitioning dan Boundary Value Analysis," 2018. [Online]. Available: www.ccssenet.org/cis

[3] E. D. Khairiyati, M. Irwan, P. Nasution, and A. Ikhwan, "PEMETAAN AKURAT LOKASI KERJA NYATA DENGAN DATA MONOGRAFI DESA," *Jurnal Teknologi Informasi*, vol. 4, no. 1, 2020.

[4] M. Sholeh, I. Gisfas, Cahiman, and M. A. Fauzi, "Black Box Testing on ukmbantul.com Page with Boundary Value Analysis and Equivalence Partitioning Methods," in *Journal of Physics: Conference Series*, Mar. 2021, vol. 1823, no. 1. doi: 10.1088/1742-6596/1823/1/012029.

[5] E. Markosa and S. Lazarova-Molnar, "Comparative Evaluation of Threshold Modelling for Smart Buildings' Performance Testing," in *Ninth International Green and Sustainable Computing Conference*, 2018, pp. 1–6. Accessed: Oct. 26, 2022. [Online]. Available: doi: 10.1109/IGCC.2018.8752125

[6] H. Yulianton, A. Trisetyarso, W. Suparta, B. S. Abbas, and C. H. Kang, "Web Application Vulnerability Detection Using Taint Analysis and Black-box Testing," in *IOP Conference Series: Materials Science and Engineering*, Aug. 2020, vol. 879, no. 1. doi: 10.1088/1757-899X/879/1/012031.

[7] R. Novita and F. R. Hardi, "Sistem Informasi Presensi Karyawan," *Jurnal Ilmiah Rekayasa dan Manajemen Sistem Informasi*, vol. 5, no. 2, pp. 230–235, 2019, doi: 10.24014/rmsi.v5i2.8241.

[8] R. Roosdianto, A. O. Sari, and A. Satriansyah, "Rancang Bangun Aplikasi Sistem Informasi Absensi Karyawan Online," *INTI Nusa Mandiri*, vol. 15, no. 2, pp. 135–142, 2021, doi: 10.33480/inti.v15i2.1932.

[9] R. Putra Fhonna and M. Ar, "Sistem Informasi Absensi Pegawai Pada Biro Kominfo Kantor Bupati Kabupaten Aceh Utara Berbasis Web," *Jurnal Ilmu Komputer dan Sistem Informasi*, vol. 3, no. 3, pp. 333–340, 2021.

[10] Subiantoro and Sardiarinto, "Perancangan Sistem Absensi Pegawai Berbasis Web," *Jurnal Swabumi*, vol. 6, no. 2, pp. 184–189, 2018.

[11] N. Cahya, "Perancangan Sistem Informasi Absensi Karyawan Pada Kantor Satpol Pp Dan Wh Aceh," *Jurnal Indonesia : Manajemen Informatika dan Komunikasi*, vol. 1, no. 2, pp. 63–69, 2020, doi: 10.35870/jimik.v1i2.21.

[12] T. Novianti and G. S. Lestari, "Rancang Bangun Aplikasi Sistem Absensi Karyawan Pada Pt. Xyz," *Jurnal Komunika: Jurnal Komunikasi, Media Dan Informatika*, vol. 7, no. 2, pp. 87–93, 2018.
[13] M. Yunita, "Analisis Sistem Informasi Akuntansi Penerimaan Kas Pada Koperasi Melati Palembang," Politeknik Palcomtech, 2021.
[14] M. A. R. Sikumbang, R. Habibi, and S. F. Pane, "Sistem Informasi Absensi Pegawai Menggunakan Metode RAD dan Metode LBS Pada Koordinat Absensi," *Jurnal Media Informatika Budidarma*, vol. 4, no. 1, pp. 59–64, 2020.
[15] S. Suendri, "Implementasi Diagram UML (Unified Modelling Language) Pada Perancangan Sistem Informasi Remunerasi Dosen Dengan Database Oracle (Studi Kasus: UIN Sumatera Utara Medan)," *Algoritma: Jurnal Ilmu Komputer Dan Informatika*, vol. 7, no. 1, pp. 106–111, 2021.