Design of WEB-Based Transportation Information System and Invoice Recapitulation at Chandra Lie Expedition

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ABSTRACT

Chandra Lie Expedition is a truck rental company started by Chandra Lie in 2018 and used for shipping kernels, coal, palm oil, and shells. The address of this expedition is 36135, East Jambi District, Jalan Sentot Ali Basa Payo Agile. When admins want to report invoices, recapitulation of invoices previously recorded using the book technique, this often occurs errors in summing the total bill and entering the transaction date. The admin needs to use Microsoft Word to draft a road letter for the driver after creating an invoice recapitulation report. It will take some time. Owners and admins should meet daily to request invoice reports for the previous day. Data that is not connected to each other. The goal of the project is to develop a web-based design tool that will make it easier for actors to perform. The steps to be taken to solve this challenge include identification, information retrieval based on theoretical foundations, observation techniques, and analysis to identify solutions to the problems faced by the expedition. Devices and software serve as research tools and materials. The purpose of the conclusion of this study is to facilitate reporting and summary of invoice reports.

Keywords: Information System; Expedition Invoice; Recapitulation; Web

INTRODUCTION

A business that can change a challenge into an opportunity, then the business will be more productive and innovative. Currently entering the industrial generation 4.0 which prioritizes digitalization factors in every aspect (Hermawan, 2020). One of One method organization has evolved for overcome problem internal is through emergence web. After review findings study related "CV Partners Service Prime Grace Based WEB" by on the ride Pearl, company transport goods Which create application for help documenting every transaction Which happen use method design prototyping (Candrasari & Anggraini, 2020; Pratama et al., 2018). Agile design techniques are used in the creation of a web-based application for the Company Information System for Logistics Expeditions PT XYZ, which handles logistics for courier expeditions(Borroek et al., 2018; Maxie Millenito & Fernando, 2023; Wijaya et al., 2022). System design is the process of creating a system and figuring out how it will perform the required tasks (Sandfreni et al., 2021). Transportation is a means of getting around/carrying goods used by people and organizations (Yunitasari et al., 2024). The researchers took this opportunity to work with Expedisi Chandra Lie. Access rights for each admin and owner were also given to input through the application system.

If the data set cannot be accessed without authorization, it cannot be considered secure. Ensuring confidentiality is very important. Since everything including user, customer, vehicle, and transaction summary reports are stored in one application scope , users can easily access all the data they need with just one login . In addition, the admin can choose which types of bills will be summarized and combined into one report that will be sent to the collection expedition by checking the checkbox. If the data is entered, the end user will definitely find the program easier to use. The internal mechanism of an organization to connect the needs of handling daily transactions in order to support business operations is known as an information system (Salamah & Nurjaman, 2023; Supriana & Pratama, 2017). Confidentiality must be ensured that users can easily access all the data they need with just one login because everything is contained in one application scope, including user, customer, vehicle, and transaction summary reports. In addition, there is a checkbox that gives the administrator the option to choose the types of bills to be summarized and combined into one report that will be given to the collection

expedition. The end customer will definitely find it easier to use the program if the data is entered. An information system is a mechanism within an organization that connects the requirements for processing daily transactions to support business functions (Salamah & Nurjaman, 2023). Working in the scope of numbers, of course, will be risky to record errors, especially if the nominal amount recorded in large amounts will have an impact on the company.

The web-based system is designed using the *PHP* programming language , database *MySQL* , *framework Laravel* , and *XAMPP* . *PHP* is one of the open- source programming languages that can be used in HTML thesis and is very appropriate or specific for web development (Rahmawati & Bachtiar, 2018). The database is processed using a program called *MySQL , which is often used to build* database -based applications (Abidin et al., 2020; Jantce TJ Sitinjak et al., 2020; Pratama & Rasywir, 2021). The open- source PHP framework , which uses *Laravel to implement the MVC (Model-View- Controller)* architecture , can be used to build web applications (Jantce TJ Sitinjak et al., 2020). *Extreme Approach Programming* is an applied design methodology that is part of the *Agile process. Agile* methods place a strong emphasis on how quickly development interacts with variants in any form. It is a method for rapidly developing systems or extending software using the same guidelines (Yuliana et al., 2019). Changing user requirements and improving software quality are two main goals of the Extreme methodology. Programming (Supriadi et al., 2024). XAMPP is a collection of many applications that are available for free and support various operating systems (Yulianto & Ariani, 2020).

Based on the background, the researcher conducted a study entitled "DESIGN OF WEB-BASED TRANSPORTATION AND INVOICE RECAPITULATION INFORMATION SYSTEMS ON CHANDRA LIE EXPEDITION".

METHODOLOGY STUDY

In compiling this research, it is necessary to have a clear framework of stages. The steps that will be taken in solving the problems that will be discussed. The research framework used is as follows following:

1. Data collection

   Data Collection is the stage of collecting data needed to support application design and solve problems that occur. This Data Collection uses 3 methods, namely:

   a. Interview

   The author directly found respondents to obtain information verbally with the aim of obtaining accurate information.

   b. Direct Observation (Observation)

   The author conducted observations on the recording system and recapitulation of reports from driver transportation bills at the office.

   c. Document Analysis

   The author conducts invoice analysis, report results, and recapitulation of shipping transaction data to solve problems that occur in the expedition. The official bill for products or services sent to a business is called an invoice (Sofiyan et al., 2019).

2. Identification of problems

   Identification of the problems experienced by Chandra Lie Expedition, namely the data recording system for drivers, vehicles, and costs is still stored in different files because the report recapitulation sometimes uses Microsoft Word or Microsoft Excel.

3. Literature Study

   The stages of the literature study, the author seeks data from several literature sources such as e-books, journals, Google as reference materials that are in accordance with the problems faced. So as to produce information that will be used in completing the research, by seeking explanations regarding design, information systems, transportation, invoices, development tools, and design tools.

4. System Analysis

Researchers conducted an analysis of the data obtained from previous references.

5. System Design

An activity diagram is a visual representation of how activities move through a program being developed. Researchers used Extreme Web-based programming to create systems. Examples of UML (Unified Modeling Language) diagrams used to assist in system design are use cases, class diagrams , and activity diagrams (Rizqi et al., 2024).

6. Final Report Preparation

Research report entitled "Design of Information System for Recording Transportation Data and Invoice Recapitulation at Chandra Lie Expedition ". Recapitulation is process use formula And pattern For to summarize data with method Which make it more useful (Ramadhon et al., 2023).

RESULTS AND DISCUSSION

Chandra Lie Expedition is a business engaged in the field of shell, kernel, palm oil, and coal delivery services. Global Motor Jambi in carrying out its operational activities has 15 units of trucks.

Based on system Which currently walk moment This, found a number of constraints Which happen that is:

1. Errors in data processing such as incorrect recording of shipping costs and miscalculations such as in the total shipping price which cause losses to the company.

2. Searching for data such as freight data, vehicle data, and previous transaction data takes quite a long time because employees are required to open each archive containing the data one by one, resulting in the required information being presented slowly.

3. Recapitulation of invoice report recording requires time to cross-check each transaction one by one and there are often differences in input.

4. Creating a waybill using Microsoft Word and often losing the waybill file.

By looking at the constraints that exist in the Chandra Lie Expedition and to produce a system that can meet the system needs in solving the problems faced, the author provides problem-solving solutions, including the following:

1. The system can perform computerized data processing for user data, customer data, vehicle data, cost data, delivery data, and invoice data which can be added, changed, and deleted according to needs and can automatically calculate transportation data from the system.

2. Produce a system that is integrated and connected between one data and another, making it easier to search for data, such as vehicle data, transportation data, user data and invoice data.

3. The system can also print reports that have been automatically summarized, especially for shipping reports and invoice reports based on the desired date.

4. Automatic creation of waybills from the application and all files are combined into one .

Use case is the main part of the system functionality can extend or expand use other cases (Nugraha, 2014; Rahmat et al., 2023). Where use case diagram owns 2-person actor namely owner and admin. Both actors must log in to carry out their respective activities. moreover formerly. For more the details can be seen at Figure 1.
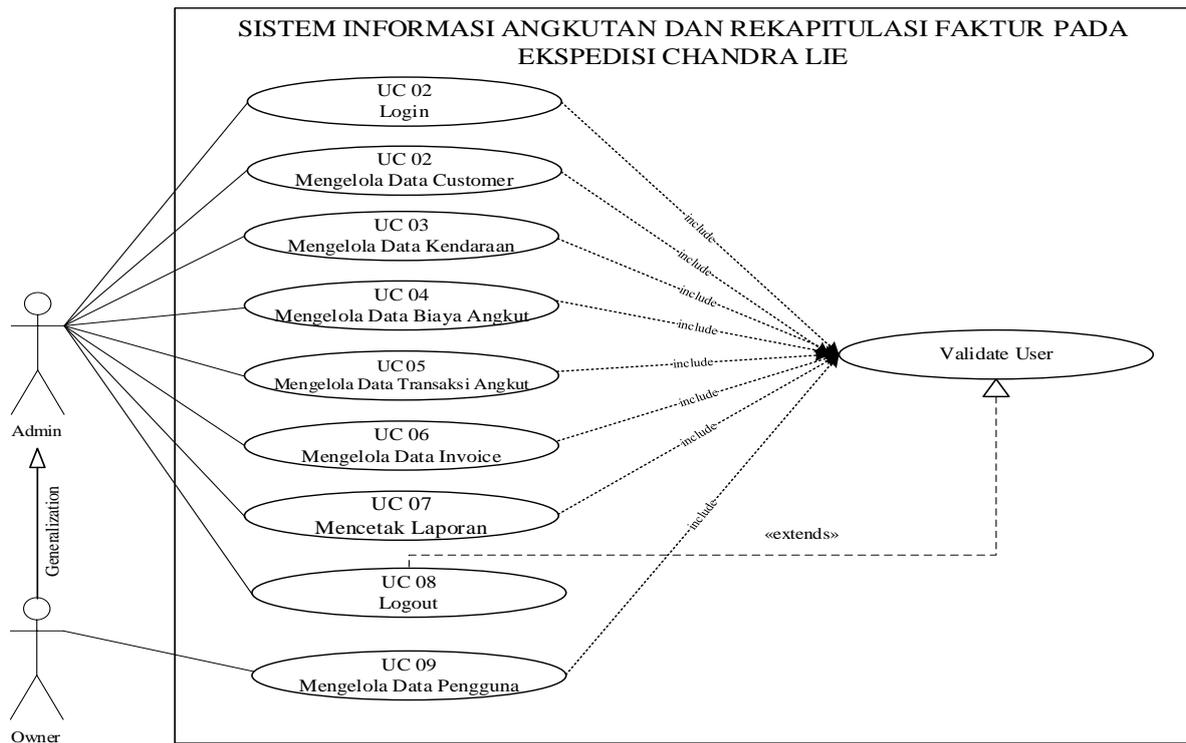
Figure 1. Use Case Diagram

Class Diagram is a diagram that describes classes(Mustar2020, 2023). For more details class diagram can seen on picture 2.
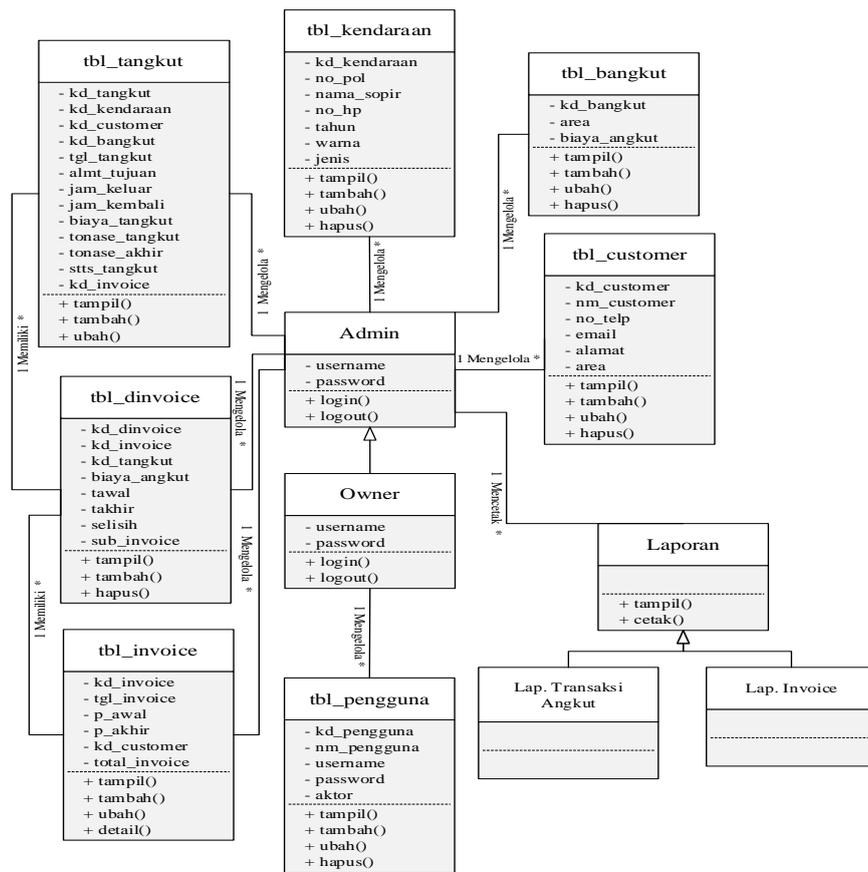
Figure 2. Class Diagram

Program implementation is the activity of designing the program that will be built. As for results from implementation program can be seen as following:

1. Page *Login*

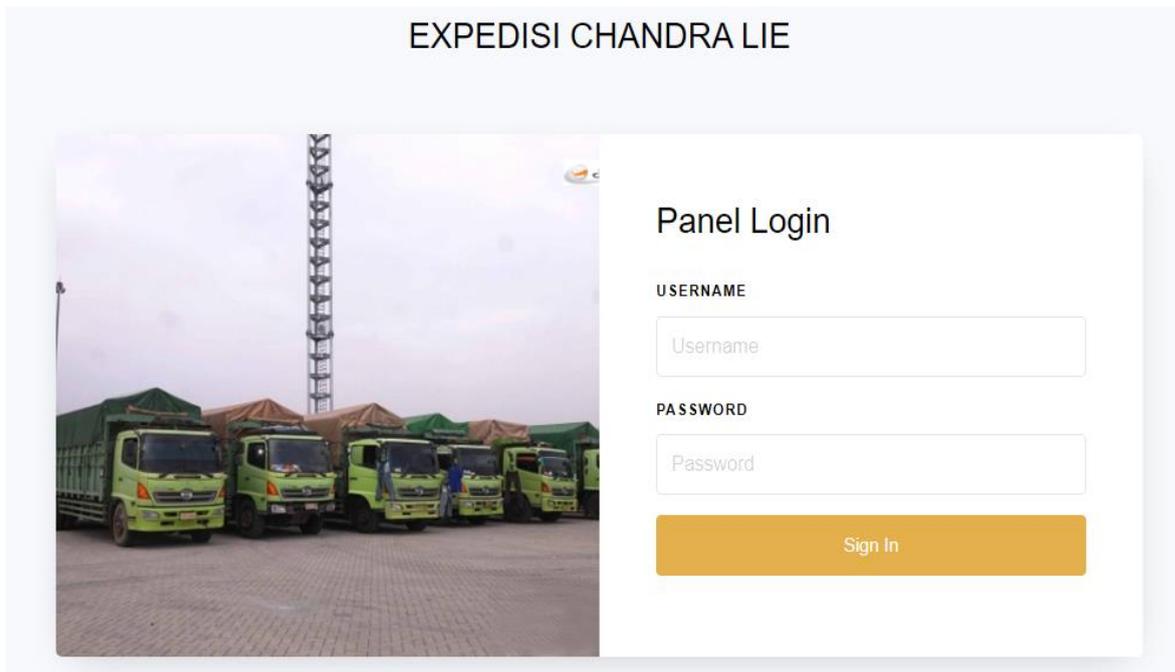   *login* page is the initial display of the program being used.

Figure 3. Login Page

2. Page *Home*

Page home page is the initial display of the Chandra Lie Expedition application which displays various menus. Page *home* can see on picture 4.
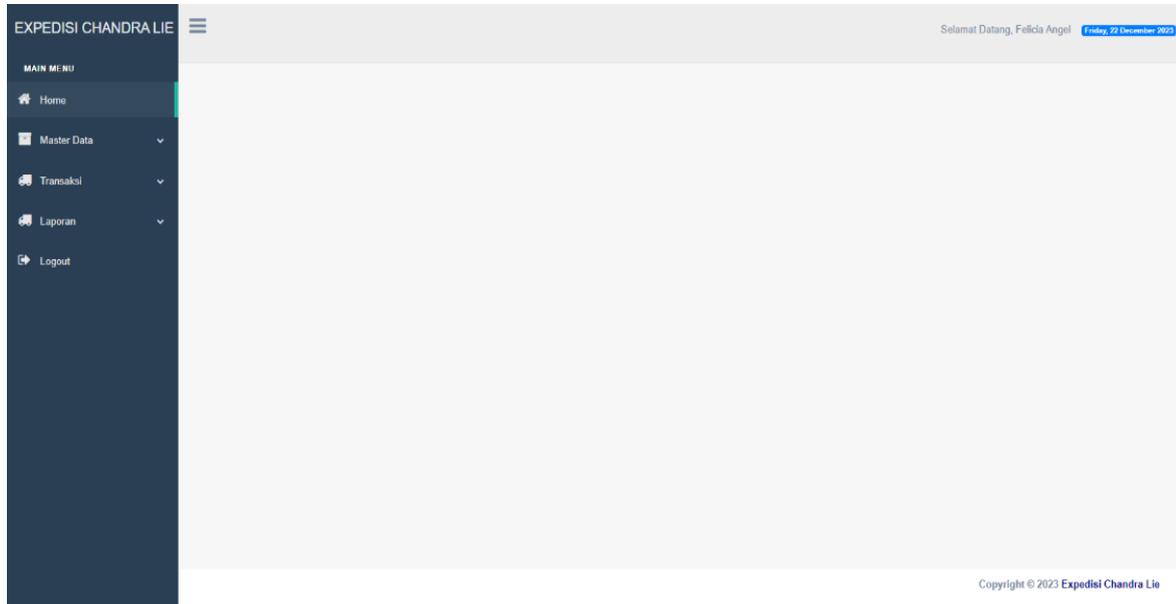
Figure 4. Pages Home

3. Page Transport Transaction Table

The transport transaction table page is a page for managing transport transaction data containing information about transport transaction data . The transport transaction table page can be seen in the figure 5.
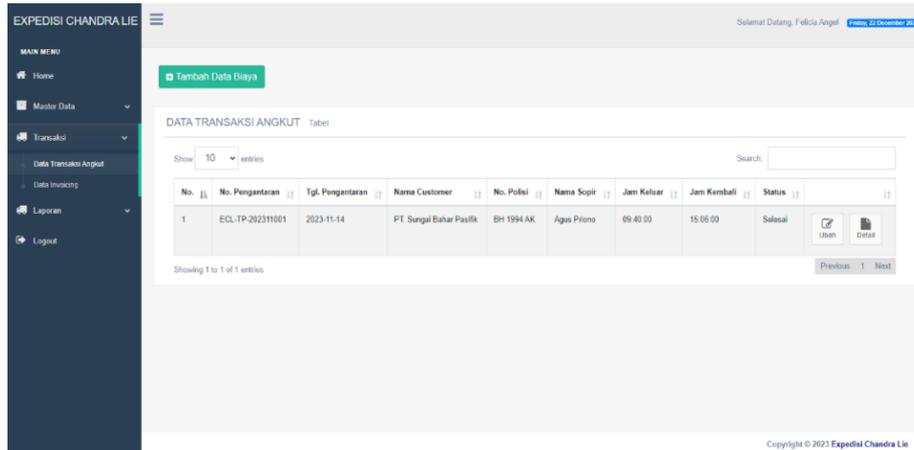
Figure 5. Page Transport Transaction Table

4. Page *Invoice* Table

invoice table page is a page accessed by system users to manage *invoice data* . The page *invoice* table cansee in the picture 6.

Figure 6. Page Invoice Table

5. Page Report Transport Transactions

The transportation transaction report page is a page that contains information about daily or monthly transportation transaction data . The page report transport transactions can be seen on Figure 7.

EXPEDISI CHANDRA LIE

Laporan Transaksi Angkut
Periode : 2023-11-01 S/D 2023-12-31

No. Transaksi	Tgl. Transaksi	Nama Customer	No. Polisi	Nama Sopir	Jam Keluar	Jam Kembali	Status
ECL-TP-202311001	2023-11-22	PT. Sungai Bahar Pasifik Utama	BH 1991 AK	Abraham Lincont	10:00:00	18:00:00	Selesai

Dicetak Oleh,

Chandra Lie

Figure 7 . Page Transportation Transaction Report

6. Page Report *Invoice*

Invoice report page is a page that contains information about *invoice data* per day or per month . Page report sale can be seen in figure 8.

Figure 8 . Page Report Invoice

CONCLUSION

With the problems experienced by the owner in recapitulating reports and making final reports, the researcher provides a solution to the problem by designing a *web application.* This system is designed to help *owners* and admins in recapitulating invoices and making final reports. This system has several functions as follows:

1. The design of this application has helped the admin in creating travel documents automatically.

2. Invoicing reports that can be selected according to the selected date without manual sorting.

3. This application also summarizes user data, vehicle data, cost data, and also reports in one access.

REFERENCES

Abidin, D. Z., Nurmaini, S., Malik, R. F., Rasywir, E., & Pratama, Y. (2020). RSSI Data Preparation for Machine Learning. *2020 International Conference on Informatics, Multimedia, Cyber and ….*

Borroek, M. R., Rasywir, E., Pratama, Y., & Istoningtyas, M. (2018). Analysis on Knowledge Layer Application for Knowledge Based System. *2018 International Conference on Electrical Engineering and*

Computer Science ....

Candrasari, D. M., & Anggraini, A. (2020). Sistem Informasi Laporan Jasa Pengiriman Barang Pada CV. Mitrajasa Perdana Anugrah Berbasis Web. *Joined Journal (Journal of Informatics Education)*, *3*(2), 40. https://doi.org/10.31331/joined.v3i2.1382

Hermawan, S. (2020). *Buku Ajar Analisis Dan Aplikasi Perencanaan Sumber Daya Manusia Di Era Evolusi 4.0*. Umsida Press. https://doi.org/10.21070/2020/978-623-6081-11-2

Jantce TJ Sitinjak, D. D., Maman, ., & Suwita, J. (2020). ANALISA DAN PERANCANGAN SISTEM INFORMASI ADMINISTRASI KURSUS BAHASA INGGRIS PADA INTENSIVE ENGLISH COURSE DI CILEDUG TANGERANG. *Insan Pembangunan Sistem Informasi Dan Komputer (IPSIKOM)*, *8*(1). https://doi.org/10.58217/ipsikom.v8i1.164

Maxie Millenito, Lord, & Fernando, E. (2023). Perancangan Aplikasi Sistem Informasi Perusahaan Ekspedisi Logistik PT XYZ Berbasis Web. *KALBISCIENTIA Jurnal Sains Dan Teknologi*, *10*(1), 37–44. https://doi.org/10.53008/kalbiscientia.v10i1.1971

Mustar2020, M. A. T. A. R. (2023). PERANCANGAN APLIKASI BERBASIS WEB UNTUK SISTEM PENGIRIMAN DAN PENERIMAAN BARANG MENGGUNAKAN METODE ANALISIS POAC. *Insan Pembangunan Sistem Informasi Dan Komputer (IPSIKOM)*, *11*(2), 62. https://doi.org/10.58217/ipsikom.v11i2.267

Nugraha, F. (2014). ANALISA DAN PERANCANGAN SISTEM INFORMASI PERPUSTAKAAN. *Simetris: Jurnal Teknik Mesin, Elektro Dan Ilmu Komputer*, *5*(1), 27–32. https://doi.org/10.24176/simet.v5i1.132

Pratama, Y., & Rasywir, E. (2021). Eksperimen Penerapan Sistem Traffic Counting dengan Algoritma YOLO (You Only Look Once) V.4. *JURNAL MEDIA INFORMATIKA BUDIDARMA*, *5*(4), 1438. https://doi.org/10.30865/mib.v5i4.3309

Pratama, Y., Rasywir, E., Kisbianty, D., & Borroek, M. R. (2018). Real Time Detection on Face Side Image with Ear Biometric Imaging Using Integral Image and Haar-Like Feature. *2018 International Conference on Electrical Engineering and Computer Science ....*

Rahmat, C. A., Permatasari, H., Rasywir, E., & Pratama, Y. (2023). Penerapan K-Means Untuk Clustering Kondisi Gizi Balita Pada Posyandu. *Jurnal Media Informatika Budidarma*, *7*(1), 207–213.

Rahmawati, N. A., & Bachtiar, A. C. (2018). Analisis dan perancangan sistem informasi perpustakaan sekolah berdasarkan kebutuhan sistem. *Berkala Ilmu Perpustakaan Dan Informasi*, *14*(1), 76. https://doi.org/10.22146/bip.28943

Ramadhon, F., Nurnawati, E. K., & Andayati, D. (2023). Sistem Informasi Geografis Wisata Pantai di Bantul Berbasis Android. *Jurnal SCRIPT*, *11*(2), 23–29. https://doi.org/10.34151/script.v11i2.4573

Rizqi, P. N., Kaniawulan, I., & Sulistyo, I. (2024). PERANCANGAN UI/UX APLIKASI E-LEARNING BERBASIS WEBSITE MENGGUNAKAN METODE GOAL DIRECTED DESIGN DI SMAN 1 PURWAKARTA. *STORAGE: Jurnal Ilmiah Teknik Dan Ilmu Komputer*, *3*(3), 191–196. https://doi.org/10.55123/storage.v3i3.3971

Salamah, A., & Nurjaman, K. (2023). PROSEDUR DAN ALUR INVOICE PADA PT. USSI KOTA BANDUNG. *Branding: Jurnal Manajemen Dan Bisnis*, *2*(1). https://doi.org/10.15575/jb.v2i1.28502

Sandfreni, S., Ulum, M. B., & Azizah, A. H. (2021). ANALISIS PERANCANGAN SISTEM INFORMASI PUSAT STUDI PADA FAKULTAS ILMU KOMPUTER UNIVERSITAS ESA UNGGUL. *Sebatik*, *25*(2), 345–356. https://doi.org/10.46984/sebatik.v25i2.1587

Sofiyan, A., Sularno, S., & Yuliana, F. (2019). SISTEM INFORMASI INVENTARIS BARANG MENGGUNAKAN BAHASA PEMROGRAMAN PHP PADA SMAN 1 DUMAI. *I N F O R M A T I K A*, *11*(1), 52. https://doi.org/10.36723/juri.v11i1.155

Supriadi, R., Abdussalaam, F., & Sari, I. (2024). Perancangan Sistem Informasi Pelaporan Analisis 10 Besar Penyakit Rawat Jalan di RSUD Bandung Kiwari. *Jurnal Teknologi Sistem Informasi Dan Aplikasi*, *7*(2), 779–788. https://doi.org/10.32493/jtsi.v7i2.39801

Supriana, I., & Pratama, Y. (2017). Face recognition new approach based on gradation contour of face color. *International Journal on Electrical Engineering and Informatics*, *9*(1), 125.

Wijaya, M. R., Rasywir, E., Meisak, D., & Pratama, Y. (2022). Implementasi Algoritma K-Nearst Neighbor Untuk Memprediksi Penyakit Diabetes. *Jurnal Informatika Dan Rekayasa Komputer (JAKAKOM)*, *2*(2), 231–239.

Yuliana, K., Saryani, S., & Azizah, N. (2019). Perancangan Rekapitulasi Pengiriman Barang Berbasis Web. *JURNAL SISFOTEK GLOBAL*, *9*(1). https://doi.org/10.38101/sisfotek.v9i1.223

Yulianto, A., & Ariani, A. (2020). Perancangan Sistem Informasi Pembuatan E-Invoice Pada PT. Hasta Perkasa Graha Berbasis Web. *REMIK (Riset Dan E-Jurnal Manajemen Informatika Komputer)*, *4*(2), 39. https://doi.org/10.33395/remik.v4i2.10555

Yunitasari, R., Widiyanto, M. K., & Rahmadanik, D. (2024). Implementasi Surat Keputusan Kepala Dinas Pendidikan dan Kebudayaan Kabupaten Sidoarjo Nomor 188/456/438.5.1/2021 Tentang Penetapan Tim Pelaksana Sekolah Ramah Anak Jenjang Sekolah Dasar Di Kabupaten Sidoarjo Tahun 2021 (Studi Kasus SDN Ganting). *Eksekusi : Jurnal Ilmu Hukum Dan Administrasi Negara*, *2*(3), 421–433. https://doi.org/10.55606/eksekusi.v2i3.1328