

## IMPLEMENTATION OF EMPLOYEE ABSENCE INFORMATION SYSTEM USING QR CODE AT INDOMEDIA GROUP

Ramadan Duwi Susanto, Nining Suharyanti  
Universitas Bina Sarana Informatika  
(Naskah diterima: 1 Juli 2025, disetujui: 28 Juli 2025)

### Abstract

*The advancement of information technology has driven digital transformation across various sectors, including employee attendance management in companies. Indo Media, a company engaged in daily news broadcasting, requires an attendance recording system that is fast, accurate, and accessible in real time. This study aims to design and develop a web-based employee attendance information system capable of handling clock-in and clock-out processes by utilizing QR Code technology as the attendance identification medium. The system development method used is Rapid Application Development (RAD), which emphasizes speed and iteration in the system-building process, starting from requirements planning, system design using UML (Use Case Diagram, Class Diagram, and Activity Diagram), to prototype implementation and user evaluation. The system is also equipped with a relational database structure and a Logical Record Structure (LRS) designed to support efficient attendance data management. The result of this study is a web-based application that allows employees to perform attendance independently and enables administrators to monitor and manage attendance data comprehensively. This system improves time efficiency, reduces the risk of data entry errors, and provides fast and accurate access to attendance records.*

**Keywords:** Attendance, QR Code, Information System, Website, Rapid Application Development.

### Abstrak

Perkembangan teknologi informasi telah mendorong transformasi digital dalam berbagai sektor, termasuk dalam pengelolaan kehadiran pegawai di perusahaan. Indo Media, sebagai perusahaan yang bergerak di bidang penyiaran berita harian, memiliki kebutuhan terhadap sistem pencatatan absensi yang cepat, akurat, dan dapat diakses secara real-time. Penelitian ini bertujuan untuk merancang dan mengembangkan sistem informasi absensi pegawai berbasis web yang mampu menangani proses absensi masuk dan keluar, dengan memanfaatkan teknologi QR Code sebagai media identifikasi kehadiran. Metode pengembangan sistem yang digunakan adalah Rapid Application Development (RAD), yang menekankan kecepatan dan iterasi dalam proses pembangunan sistem, dimulai dari tahap perencanaan kebutuhan, desain sistem menggunakan UML (Use Case Diagram, Class Diagram dan Activity Diagram), hingga implementasi prototipe dan evaluasi pengguna. Sistem juga dilengkapi dengan struktur basis data relasional dan Logical Record Structure (LRS) yang dirancang untuk mendukung pengelolaan data absensi secara efisien. Hasil dari penelitian ini adalah sebuah aplikasi berbasis web yang dapat digunakan oleh pegawai untuk melakukan absensi secara mandiri dan oleh admin untuk memantau serta mengelola data



absensi secara menyeluruh. Sistem ini mampu meningkatkan efisiensi waktu, mengurangi risiko kesalahan input data, serta menyediakan data kehadiran yang dapat diakses secara cepat dan akurat.

**Kata Kunci:** Absensi, QR Code, Sistem Informasi, Website, Rapid Application Development.

## **I. INTRODUCTION**

The rapid development of information technology has had a significant impact on various sectors, including the media industry. One of the crucial requirements in human resource management at media companies like Indomedia is recording and monitoring employee attendance. Indomedia, as a company engaged in delivering daily news and information, has a fast-paced, dynamic work pace that often demands timely employee availability.

Currently, the attendance recording process at Indomedia has been carried out manually, which hinders efficiency, accuracy, and reporting. Manual recording is prone to data entry errors, manipulation of attendance time and delays in the monthly recap process. This undoubtedly impacts work productivity, managerial decision-making, and employee trust in the company's administration system.

Recognizing these issues, an information technology-based solution is needed that can replace the conventional attendance process with a more efficient, transparent, and reliable system. A website-based attendance system is an ideal alternative because it can be easily accessed via a computer, allows for automatic data recording and centralized data storage. A web-based attendance system with barcode scanning and location-based services can improve efficiency and accuracy in recording employee attendance (Juliyati and Budihartanti, 2025).

The attendance website designed in this study will provide three main features: clock-in and clock-out using QR codes and automatic QR code generation. Each employee can clock in by logging into the system, and the attendance data will be directly recorded into a secure and structured database. The website-based attendance system allows administrators to view attendance reports in real time and download them periodically. The implementation of an online, app-based attendance system has a positive impact on employee discipline, with attendance data recorded in real time and unable to be manipulated (Aderizal and Syamsir, 2023).

With this system, it is hoped that Indomedia's attendance administration process will be more effective, reducing administrative workloads, improving data accuracy, and accelerating decision-making in human resource management. "The use of a web-based

attendance system with PHP and MySQL programming languages can reduce recording errors and increase ease in monitoring attendance" (Amaludin et al., 2024).

## II. RESEARCH METHODS

The software development method used to create this employee attendance system is Rapid Application Development (RAD). RAD is a system development approach that emphasizes speed in the software development process through rapid prototype iteration and active user involvement. This method is designed to produce a system in a relatively short time without compromising the quality and functionality of the application.

The stages of the RAD method include requirements planning, system design using prototypes, user evaluation, and system implementation and maintenance. This eliminates the need to build a system from scratch to resolve customer misunderstandings related to technical issues. Furthermore, this approach helps clarify customer requirements specifications to software developers because it is more efficient, flexible, and allows for the use of shortcuts in the development process. The system can be developed flexibly and adaptively to changing needs during the development process. Therefore, the RAD method is considered appropriate for developing this attendance website because it can shorten development time and ensure the system meets end-user needs.

The following is an explanation of the work steps in the Rapid Application Development (RAD) method:



Gambar 1. RAD

### 1. Analysis and quick design

Understanding the general system requirements and preparing an initial design for the application to be developed. At this stage, information is gathered through observation, interviews, or documentation studies to identify user needs and problems within the existing system.

The results of this analysis are then used to create an initial design (quick design) for the system, such as an overview of the workflow, data structure, and user interface design.

## 2. Prototype Cycles

The iterative system development process involves creating and refining prototypes. At this stage, the author creates an initial version of the system, then shows it to users for feedback, and then refines and refines the system based on that input. This stage consists of three main parts:

### a. Build

The author prepares a system prototype based on the initial design. The prototype includes a login page, admin and employee dashboards, a QR code-enabled time-in and time-out system, attendance history, and an absence reporting feature.

### b. Demonstrate

The prototype is then shown to users to obtain direct feedback on the system's appearance, functionality, and user flow.

### c. Refine

Based on the feedback obtained, the prototype is refined by making changes or adjustments. This process can be repeated several times until the prototype is deemed good enough and adequately meets user needs.

## 3. Testing

The author conducts tests on the developed system to ensure that all functions function properly and meet user needs. At this stage, testing is conducted on various system components, from the user interface and logical processes to database integration.

## 4. Implementation

The process of implementing the developed system into a real-world or production environment. At this stage, the system is installed on the devices that will be used by users, so that all system functions can be fully implemented according to operational requirements.

The author also conducts user training, system documentation, and access rights settings to ensure optimal and secure system use.

## UML (Unified Modeling Language) Diagram

### a. Use Case Diagram

User Requirements Analysis:

1. Check-in and check-out using QR Code
2. Manage employee data
3. Manage position data

4. Manage shift data
5. Manage location data
6. Create QR Codes for check-in
7. Manage attendance data

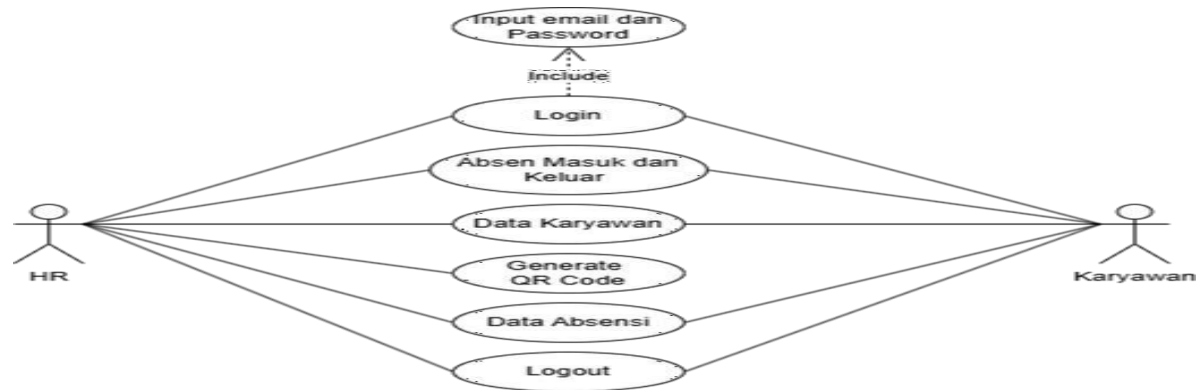


Figure 2. Use Case

## b. Activity Diagram

The following is an illustration of the activity diagram for designing an attendance website.

### 1. Login Activity Diagram

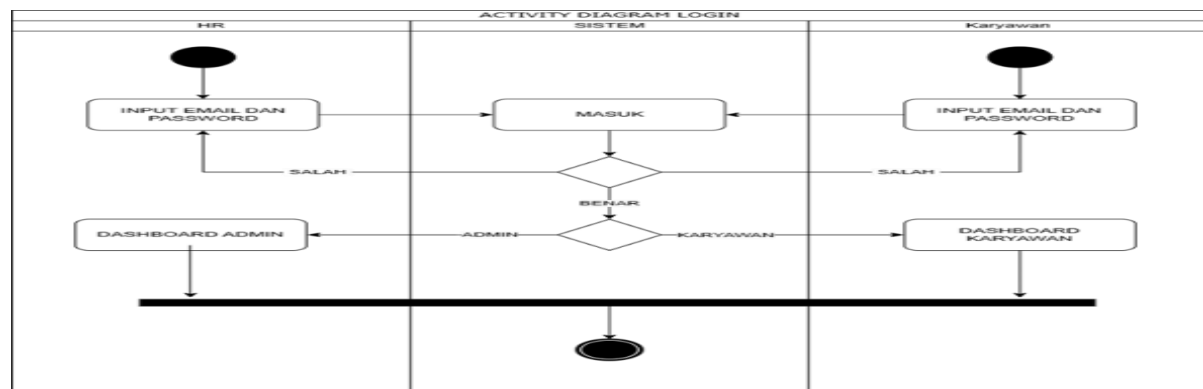


Figure 3. Login Activity Diagram

### 2. Sign-in and Sign-out Activity Diagram

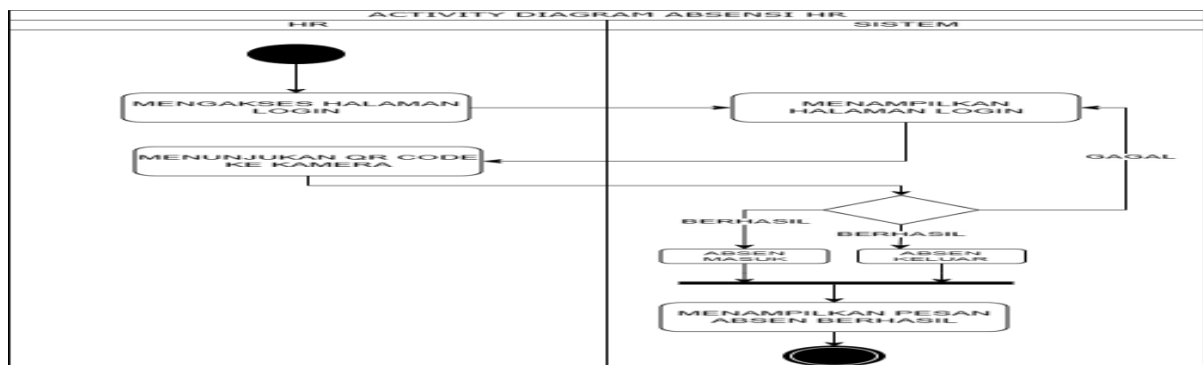


Figure 4. Activity Diagram of Attendance in and Out

### 3. Activity Diagram for Managing Employee Data

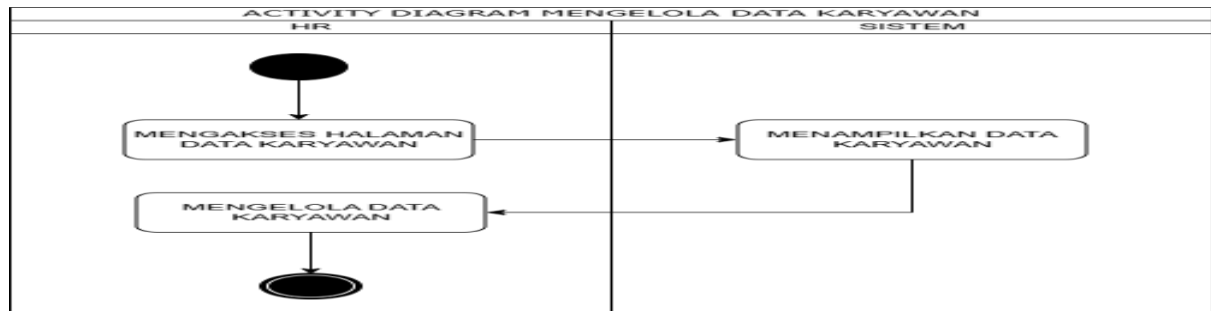


Figure 5. Activity Diagram for Managing Employee Data

### 4. Activity Diagram Generate QR Code

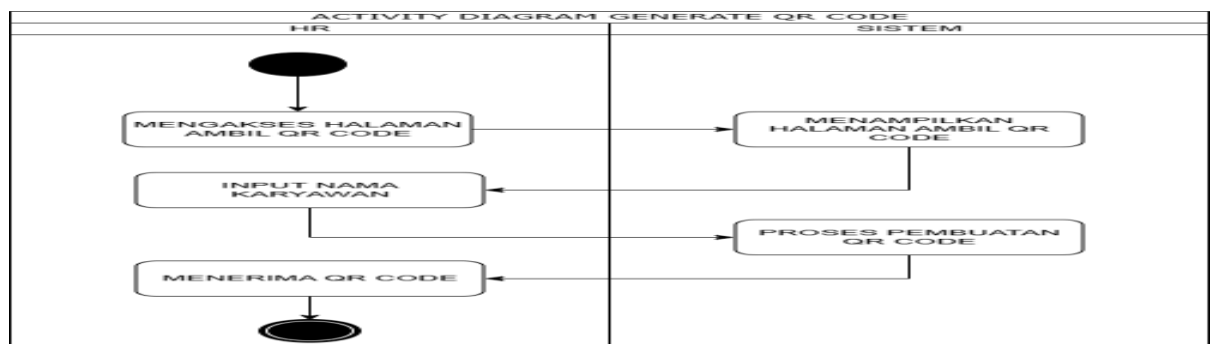


Figure 6. Activity Diagram for Generating QR Code

### c. Class Diagram

The following is an illustration of the Activity Diagram for designing an attendance website.

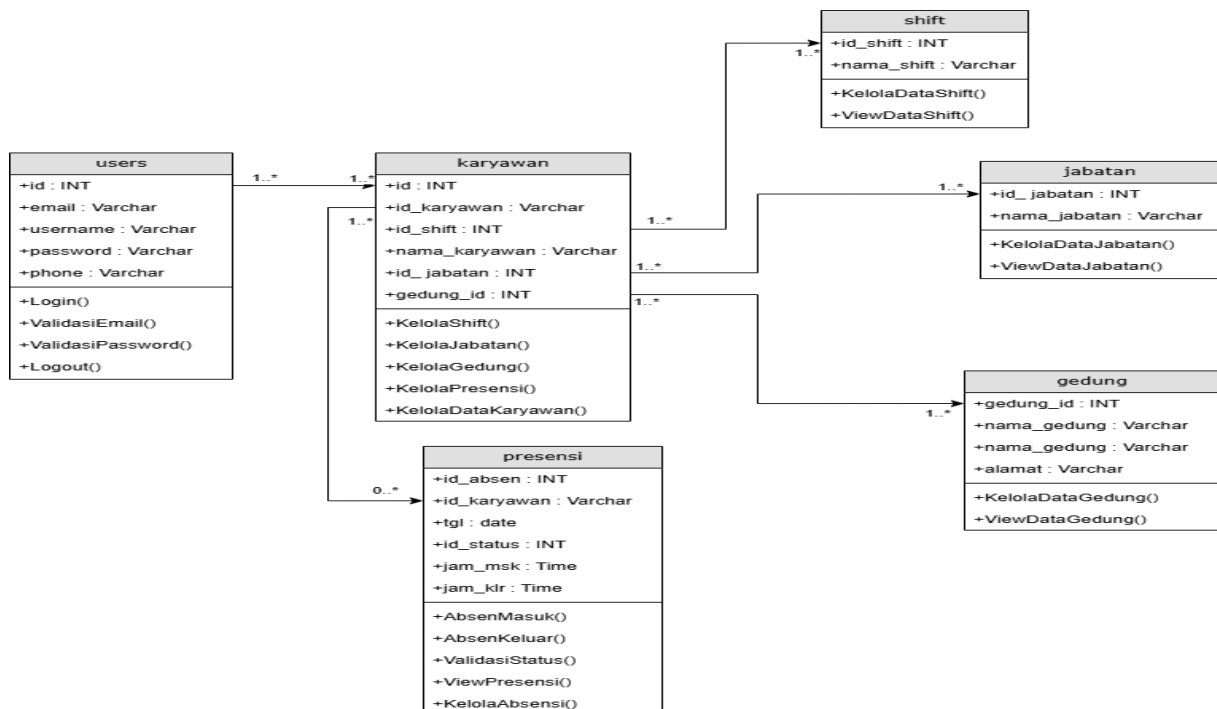


Figure 7. Class Diagram

### III. RESEARCH RESULTS

The Indomedia Group Employee Attendance Website is designed to provide functions such as clocking in and out and monthly attendance summaries. The following is the Indomedia Group Employee Attendance Website Interface:

#### 1. Landing Page

Users are directed to the home page. This page requires them to enter their email address and password to access the dashboard.



Figure 8. Login Page

#### 2. Dashboard Page

This page displays information on the number of employees, job titles, locations, and shifts.

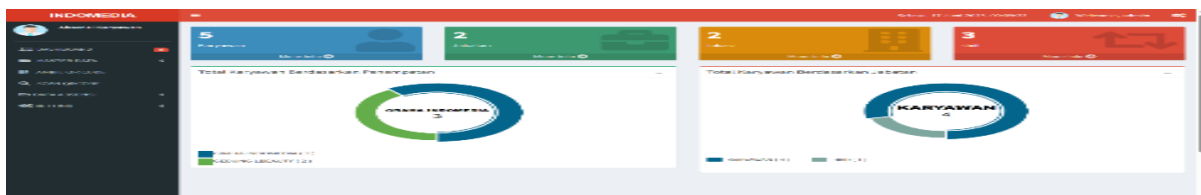


Figure 9. Dashboard Page

#### 3. Employee Data Page

This page displays employee data information. Users can edit, delete, and add employee data.

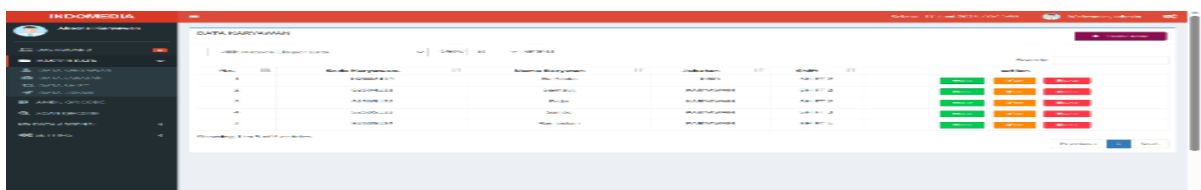


Figure 10. Employee Page

#### 4. Generate QR Code Page

On this page, users can generate a QR code for clocking in and out.

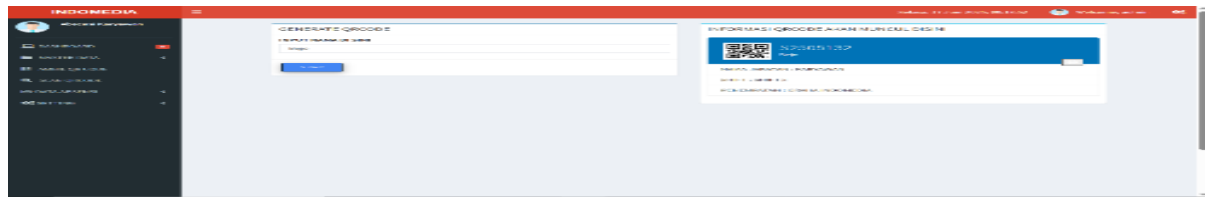


Figure 11. Generate QR Code page

#### 5. Scan QR Code Attendance Page

On this page, users can check in or out using a QR code.

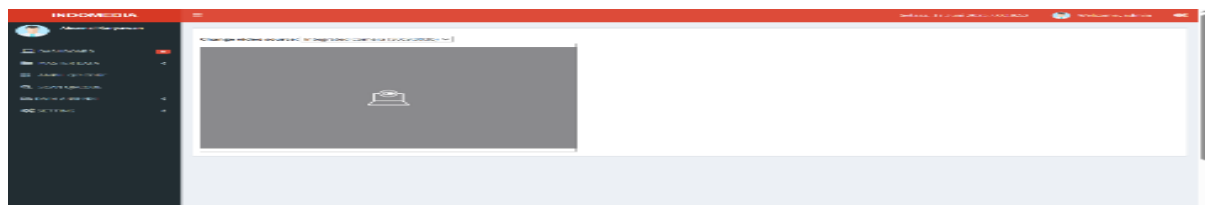


Figure 12. Attendance QR Scan Page

#### 6. Attendance Data Page

This page displays Attendance Data information. Users can edit, delete, and add Attendance data.

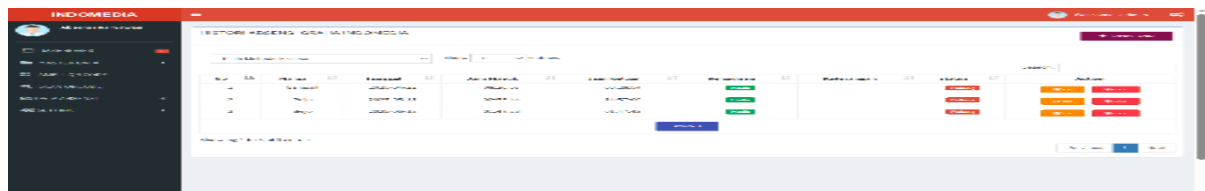


Figure 13. Attendance Data Page

### IV. CONCLUSION

Based on research and the implementation of a website-based employee attendance information system using the Rapid Application Development (RAD) method at Indomedia Group, the manual attendance recording system currently in use has proven inefficient, error-prone, and complicated the reporting process. To address these issues, a website-based attendance system was designed, offering a more efficient, transparent, and real-time solution.

This system utilizes QR Code technology and allows integration with a secure and structured database. In addition to simplifying employee attendance, this system also simplifies the administration's ability to monitor and manage attendance data.

## REFERENCES

- Abidah, D. Y., Wijoyo, S. H., & Rahman, K. (2025). Pengaruh platform Visual Studio Code terhadap hasil belajar siswa pada mata pelajaran pemrograman dasar kelas X Jurusan Teknik Komputer dan Jaringan SMKN 3 Malang. *Jurnal Pengembangan Teknologi Informasi dan Ilmu Komputer (J-PTIIK)*, 9(1), 1-10.
- Aderizal, S. A., & Syamsir. (2023). Pengaruh penerapan sistem absensi online (Abon) berbasis aplikasi terhadap disiplin kerja pegawai pada organisasi perangkat daerah (OPD) Kabupaten Dharmasraya. *Jurnal Administrasi Negara*, 7(3), 24229–24240.
- Amaludin, A., Abidin, A. Z., Martha, M. A., & Saputra, S. (2024). Perancangan sistem absensi berbasis web menggunakan bahasa program PHP dan MySQL di Sekolah Yayasan Ashaabul Ardhi (Sahabat Bumi). *BIN: Bulletin of Informatics*, 2(2), 227–235.
- Aulia, Z. M., Hidayat, T., Al Fauzan, F., & Sutardi, S. (2023). Sistem informasi rekap absensi berbasis website (studi kasus: Kantor Kejaksaan Tinggi Sulawesi Tenggara). *Journal Peqquruang: Conference Series*, 1(1), 1–10.
- Bahtiar, Y. A., & Herwanto, D. (2022). Perancangan Basis Data Penjualan dengan Metode Database Lifecycle Pada Toko Lancar Elektrik. *STRING (Satuan Tulisan Riset Dan Inovasi Teknologi)*, 7(2), 169.
- Denso Wave Incorporated. (n.d.). *QR Code.com – Structure of QR Code*. Diakses lewat : <https://www.qr-code-generator.com/qr-code-marketing/qr-codes-basics/> . Pada tanggal 06- juni-2025
- Erlangga, Iqbal firmansyah, M. Ali Topan Nugroho, Andri Rosandi, & Aries Saifudin. (2024). Pengujian Aplikasi CRUD Dengan MySQL dan PHPMyAdmin. *OKTAL : Jurnal Ilmu Komputer Dan Sains*, 3(06), 1525–1531.
- Fitri Nuraeni, R., Setiawan, R., & Amal, R. I. (2022). *Aplikasi presensi siswa berbasis web dan QR-Code pada pembelajaran tatap muka di sekolah*. *Jurnal Informasi dan Teknologi*, 5(2), 45–52.
- Hakim, A. R., & Leony, N. L. W. (2024). Pemanfaatan teknologi web untuk sistem absensi di Kantor Desa Kalisusu – Nabire. *Jurnal Teknologi dan Informatika*, 2(1), 162–173.
- Insana, N., Erniwati, E., & Alfat, S. (2022). Pengembangan media pembelajaran fisika berbantuan JavaScript pada materi pokok listrik statis. *Jurnal Riset dan Kajian Pendidikan Fisika*, 8(2).
- Inzaki, T. E., & Firdaus, I. C. (2023). Rancang bangun *website* sekolah dengan menggunakan *framework Bootstrap* (Studi kasus MAN 11 Jakarta Selatan). *OKTAL: Jurnal Ilmu Komputer dan Science*, 2(1), 231–240.
- Juliyati, D., & Budihartanti, C. (2025). Perancangan sistem absensi berbasis web dengan menggunakan pemindaian barcode pada PT. Prima Sumber Daya Investasi. *JISAMAR*:

*Journal of Information System, Applied, Management, Accounting and Research*, 9(2), 711–722.

Kusuma, D., Ivan, D. F., & Suwitno, S. (2022). XAMPP sebagai paket web server open source untuk pengembangan aplikasi web lokal. *Jurnal Comasie*, 8(1).

Lesmana, R. A., nur Aziz, M. F., & Fiandi, R. A. (2024). Perancangan Dan Pengembangan Sistem Informasi Absensi Karyawan Indomaret Beru Wlingi Berbasis Web. *ASSEMBLY: Informatics Engineering and Tecnology System Journal*, 1(1), 13-19.

Mardiansyah, A., Kasah, B. N., Zamzami, H. R., Arabu, M. Y., Nasro, M. A., Kristanto, N., Paojiah, R., & Wulandari, Y. (2025). Pengenalan dasar HTML dan CSS: Langkah pertama dalam pengembangan web. *Abdi Jurnal Publikasi*, 3(3).

Pertiwi, T. A., Luchia, N. T., Sinta, P., Dahlia, A., Fachrezi, I. R., & Aprinastya, R. (2023). Perancangan dan implementasi sistem informasi absensi berbasis web menggunakan metode Agile Software Development. *Jurnal Testing dan Implementasi Sistem Informasi*, 1(1), 53–66.

Pradita, N., Setyawan, W., Setiawan, R. P., Kheishi, H. L., & Aginta, A. C. (2023). Perancangan sistem informasi pos berbasis mobile pada Toko Plered Indah. *Technology and Informatics Insight Journal*, 2(1), 48-55.

Puguh, A., et al. (2022). Panduan lengkap cara belajar PHP dari dasar sampai mahir. BizTech Academy. <https://biztechacademy.id/panduan-lengkap-cara-belajar-php-dari-dasar-sampai-mahir/>. Diakses Pada Tanggal 02-Juni-2025.

Pulungan, R., Hasibuan, R. F., & Siahaan, A. M. (2023). *Analisis Teknik Entity-Relationship Diagram Dalam Perancangan Database*. *Jurnal Teknologi Informasi dan Ilmu Komputer*, 11(2), 112–118.

Purwaningsih, I. Y., Oktariani, O., Hernawati, L., Wardarita, R., & Utami, P. I. (2022). Pendidikan sebagai suatu sistem. *Jurnal Visionary : Penelitian Dan Pengembangan Di Bidang Administrasi Pendidikan*, 10(1), 21.

Ridho, F., & Syahputra, M. (2024). Perancangan Sistem Informasi atau Aplikasi Monitoring Absensi Karyawan pada PT. Socfindo Menggunakan QR Code Berbasis Web. *SIKOM: Jurnal Sistem Informasi Komputer*, 1(1), 37-50.

Sabbrina, A., sufa, A. oktavia ., ritonga, D. putra ., siregar, E. R. sari ., & ., N. (2023). Pengenalan Konsep Dasar Dan Penggunaan Database Manajemen Sistem (DBMS). *Jurnal Sains Dan Teknologi (JSIT)*, 3(3), 224–232.

Sofyan, A., Sari, A. O., & Zuraidah, E. (2021). Rancang bangun sistem informasi monitoring absensi karyawan berbasis website. *Infotek: Jurnal Informatika dan Teknologi*, 4(2), 301–311.

Waruwu, M., & Ilmi, M. (2025). Perancangan Sistem Informasi Absensi Karyawan Dengan Qr Code Berbasis Web Pada PT. WATEROAM TECHNOLOGIES INDONESIA. *JUTEKDISI*, 2(1), 13 20.