JURNAL INFORMATIKA DAN REKAYASA PERANGKAT LUNAK (JATIKA)
Volume 6, Number 2, June 2025, Page 137-148
E-ISSN 2797-2011 P-ISSN 2797-3492
https://publikasi.teknokrat.ac.id/index.php/jatika/index
DOI: https://doi.org/10.33365/jatika.v6i2.130

Implementation of the V-Model Method in Developing a Web-Based Employee Payroll Accounting Information System

Mila Rosanah[1], Audy Nur Amaliyah[2], Corie Mei Hellyana[3*], Eva Argarini Pratama[4]
[1,2]Accounting Information System, Universitas Bina Sarana Informatika, Indonesia
[3]Computer Technology, Universitas Bina Sarana Informatika, Indonesia
[4]Information System, Universitas Bina Sarana Informatika, Indonesia
[1]mila.rosanah01@gmail.com, [2]audyamaliyah22@gmail.com, [3*]corie.cma@bsi.ac.id, [4]eva.eap@bsi.ac.id

Abstract: SMK An-Nur Slawi is one of the private vocational schools located in the Tegal Regency. Currently, the process of managing data and calculating employee salaries at the school is still done manually using Microsoft Excel. This manual method has a fairly high risk of error and requires a relatively long time to complete. Given the importance of managing accurate and efficient financial information in supporting decision-making, an integrated accounting information system is needed to manage financial transaction data more optimally. This study aims to develop a computer-based employee payroll information system by applying the V-Model method in the software development stage. The V-Model method was chosen because it can ensure the verification and validation process at each stage of development so it is expected to improve the quality of the resulting system. The purpose of this study is to implement an automated payroll system that can reduce the error rate in salary calculations, speed up the payroll administration process, and increase the accuracy of employee data recording. With the implementation of this system, it is expected that the payroll process that previously took a relatively long time can be completed in a faster time and the error rate in salary calculations can be minimized. Currently, the employee payroll information system has been successfully designed and is in the trial stage. Interim results show an increase in efficiency in the payroll process, as well as a significant decrease in data input errors compared to the manual method used previously.

Keywords: Accounting Information System; V-Model Method; Employee; Payroll; SMK An-Nur Slawi

1. INTRODUCING

In the midst of the rapid progress of the digital era, information systems have become one of the essential needs for various agencies and institutions. Especially in the context of employee payroll management, the implementation of an appropriate and reliable information system is very important to ensure the integrity and success of the process.

The employee payroll information system is closely related to the welfare of the workforce [1], so it requires special attention from the institution so that the desired goals can be achieved. According to [2], "Salary is a reward given to workers for carrying out administrative and managerial tasks". It is generally determined monthly by the employment contract [3].

To improve the quality and efficiency in managing the payroll system, the application of the V-Model method is the main focus of the system development process. The V-Model is part of the SDLC (System Development Life Cycle) which describes the relationship activities between each stage in the development cycle and the testing stage (verification and validation) which can be integrated into each stage of the life cycle [4]. The V-Model method includes activities ranging from formulating

Corie Mei Hellyana: *Corresponding Author

JURNAL INFORMATIKA DAN REKAYASA PERANGKAT LUNAK (JATIKA)
Volume 6, Number 2, June 2025, Page 137-148
E-ISSN 2797-2011 P-ISSN 2797-3492
https://publikasi.teknokrat.ac.id/index.php/jatika/index
DOI: https://doi.org/10.33365/jatika.v6i2.130

requirements, designing architecture, designing components, and implementing program code, to the system testing stage.

As the software development team continues the process on the left side of the V-Model, system requirements, key problems, and proposed solutions are gradually refined into more detailed and technical forms.

One of the institutions that uses information technology to solve employee payroll problems is schools. In schools, there are human resources who carry out various office activities, known as employees. The role of employees in an institution or school is very crucial because without employees, the institution cannot operate [5]. The process of employee salary payroll requires a financial report, so it also requires an accounting information system. The accounting information system itself is a process where the data and transactions used produce useful information for planning, controlling, and operating a business [6].

Previous research conducted by [7], brought results in the form of the development of a payroll information system using the accrual basis method which can increase the efficiency of processing attendance data and employee data, and employees can access pay slips personally. The next research is research conducted by [8] which provides results that with the existence of a foundation fund management information system, the treasurer's task becomes more efficient because it can record transactions in real-time, quickly and the resulting data is automatically stored in the system database. In addition, research conducted by [6], states that good database management in the budget submission accounting information system can provide accurate financial reporting.

This study aims to develop a web-based employee payroll information system for SMK An-Nur Slawi by applying the V-Model method, which emphasizes verification and validation at each development phase to ensure a high-quality software product. The system is intended to reduce calculation errors, speed up payroll administration, and improve the accuracy of employee data management. In addressing these objectives, the study contributes by providing a practical and systematic solution to the manual payroll process previously used, which was time-consuming and prone to error. Additionally, this research demonstrates the application of the V-Model in an educational context. It offers complete technical documentation—including use case and class diagrams, along with black-box testing results—that may serve as a useful reference for future system development efforts in similar institutions.

2. RESEARCH METHODOLOGY

This research uses the V-Model because it is a new variation of the waterfall model in which there is an additional testing phase in each stage [9] with an emphasis on software quality and assurance [10]. In its development, the V-model describes the relationship between the development and testing processes.

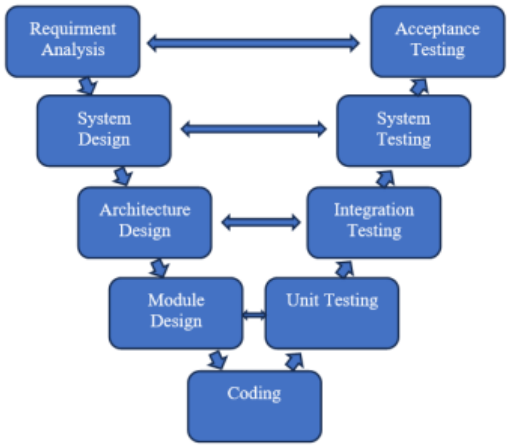

Figure 1. V-Model Method Framework

Corie Mei Hellyana: *Corresponding Author

JURNAL INFORMATIKA DAN REKAYASA PERANGKAT LUNAK (JATIKA)
Volume 6, Number 2, June 2025, Page 137-148
E-ISSN 2797-2011 P-ISSN 2797-3492
https://publikasi.teknokrat.ac.id/index.php/jatika/index
DOI: https://doi.org/10.33365/jatika.v6i2.130

Explanation of the V-Model method framework in system development [11]:

1. Requirement Analysis dan Acceptance Testing
   In the requirement analysis stage, users must meet the requirements that have been recorded in the previous stage. The output of the requirement analysis stage is a document that will later be used by the user. Acceptance testing is the document evaluation stage, which will later determine whether the document can be accepted by the user or not.
2. System Design dan System Testing
   In this stage, the developer begins to design and develop the user needs that have been identified in the previous stage into a system diagram. The output of this stage includes a general description of the system, data structure and other documentation. [12].
3. Architecture Design dan Integration Testing
   Architecture design includes the stage where developers translate the system into various diagrams, such as use case diagrams, and class diagrams, to describe features and interactions. In addition, integration testing aims to detect errors when units are combined [13]. On the other hand, architecture design and integration testing also involve selecting an architecture based on factors such as module usage, interface relationships, table dependencies in the database, and the technology used.
4. Module Design dan Unit Testing
   In this stage, the developer begins to create modules that are broken down into small parts which are then explained so that later in the system testing stage if the smallest unit is combined into a system unit and an error occurs, the error will be easier to detect. The system that has been designed will later be tested using black box testing. This testing process only focuses on testing the system's input and output without knowing how the process is inside.
5. Coding
   At this stage, it is the implementation stage of programming the module that has been created [14]. The programming languages used in the development of the payroll information system include HTML (Hyper Text Markup Language) which plays a role in designing the layout of the website page, CSS (Cascading Style Sheet) which is a code that is used to group the form of an HTML encryption, PHP (Hypertext Preprocessor) which is a computer language that can be used on a web server and functions as a data processor on the server side. In addition, the Laravel framework is also used which is a framework for the PHP programming language which is open source and uses the Model View Controller (MVP) and uses the MIT license and Github as a platform for various codes.

3. RESULT AND DISCUSSIONS

The system that will be created and designed is a website-based employee payroll accounting information system using the Laravel framework. This framework uses the PHP (Hypertext Preprocessor) programming language with open source code and a Model View Controller with a regular code structure [15] and more comprehensive and able to increase application scalability [16]. 3 accesses can be selected in the login system, namely "Administrator" which can manage all data, "Finance Staff" which can manage the payroll process, and "Employee" which can only Manage profiles and access pay slips.

3.1 Use case diagram

Based on the employee use case diagram above, employees can log in, view the home page, manage personal data, print pay slips, view payroll history, and log out.

Corie Mei Hellyana: *Corresponding Author

JURNAL INFORMATIKA DAN REKAYASA PERANGKAT LUNAK (JATIKA)
Volume 6, Number 2, June 2025, Page 137-148
E-ISSN 2797-2011 P-ISSN 2797-3492
https://publikasi.teknokrat.ac.id/index.php/jatika/index
DOI: https://doi.org/10.33365/jatika.v6i2.130

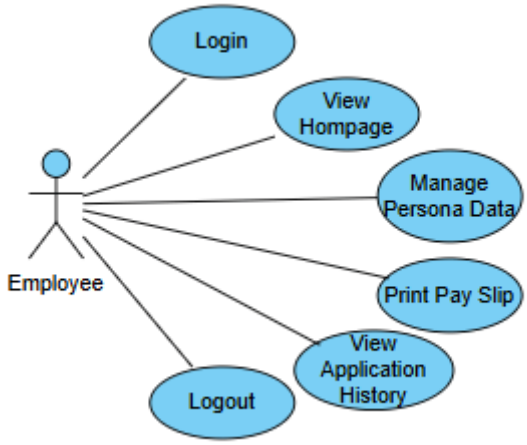

Figure 2. Use Case Diagram Employee

In the image 3, the Administrator actor can manage the account data menu, User data, employee data, position data, education data, basic salary data, basic salary data, allowance data, allowance data, incentive data, incentive percentage data, honorarium data, honorarium data, deduction data, and salary data. While the Finance Staff actor can manage the basic salary data menu, basic hajj data, allowance data, allowance data, incentive data, incentive percentage data, honorarium data, honorarium data, deduction data, and salary data.

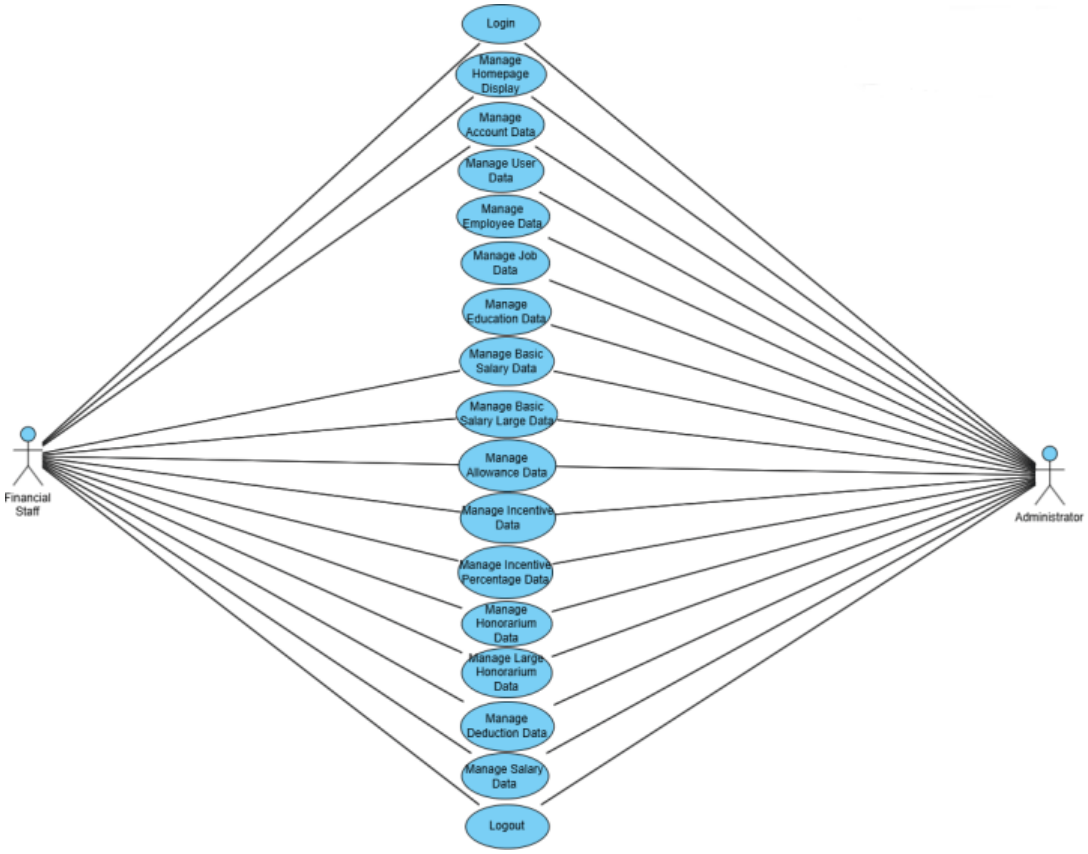

Figure 3. Use case diagram Administrator and Finance Staff

Corie Mei Hellyana: *Corresponding Author

JURNAL INFORMATIKA DAN REKAYASA PERANGKAT LUNAK (JATIKA)
Volume 6, Number 2, June 2025, Page 137-148
E-ISSN 2797-2011 P-ISSN 2797-3492
https://publikasi.teknokrat.ac.id/index.php/jatika/index
DOI: https://doi.org/10.33365/jatika.v6i2.130

3.2 Class Diagram

The following class diagram illustrates the structural design of the payroll system. It depicts the relationships between various classes that represent the core entities within the system.

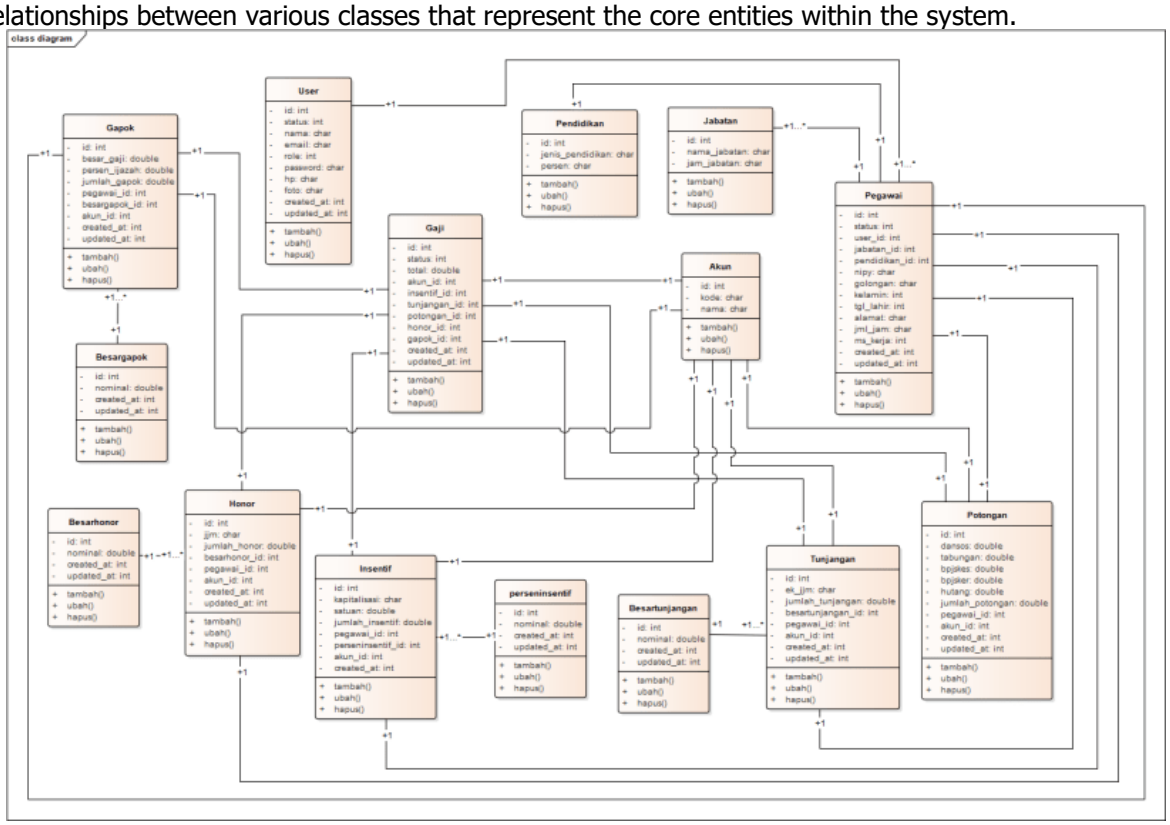

Figure 4. Class Diagram

The class diagram consists of several main classes such as User, Employee (Pegawai), Salary (Gaji), Position (Jabatan), Education (Pendidikan), Allowance (Tunjangan), and Deduction (Potongan), along with supporting classes. The User class is associated with the Employee class, which is further connected to other components like Salary, Position, and Education. The Salary class is directly linked to various payroll components including Allowance, Deduction, Incentive, Honor, and GrossSalary (BrutoPenggajian). Each class includes relevant attributes and standard methods (getters and setters). The relationships between these classes illustrate how the system manages employee data in a structured manner, covering personal details, job positions, salary components, and the overall payroll calculation process.

3.3 User Interface

On the login page, users are given their respective access rights, namely administrators, financial staff and employees. By entering email as username and password on the login page, if the login is successful, it will enter the main page of the website, but if the login fails, it will remain on the login page

Corie Mei Hellyana: *Corresponding Author

JURNAL INFORMATIKA DAN REKAYASA PERANGKAT LUNAK (JATIKA)
Volume 6, Number 2, June 2025, Page 137-148
E-ISSN 2797-2011 P-ISSN 2797-3492
https://publikasi.teknokrat.ac.id/index.php/jatika/index
DOI: https://doi.org/10.33365/jatika.v6i2.130

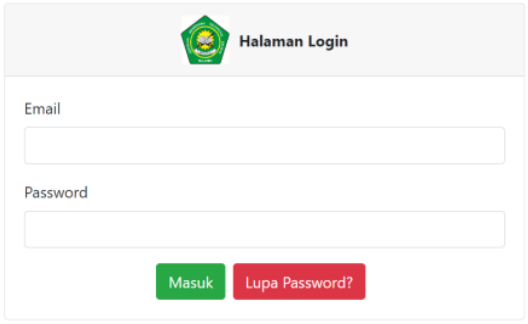

Figure 5. Form Login

Figure 6 below shows the user menu page on the Administrator where the administrator can manage all menu pages, such as the user menu, salary master data menu (transaction account, salary amount, honorarium amount, allowance amount, incentive), employee master data menu (position, education), employee menu, payroll master menu (basic salary, teacher honorarium, position allowance, additional task incentive, deduction credit) and payroll report.

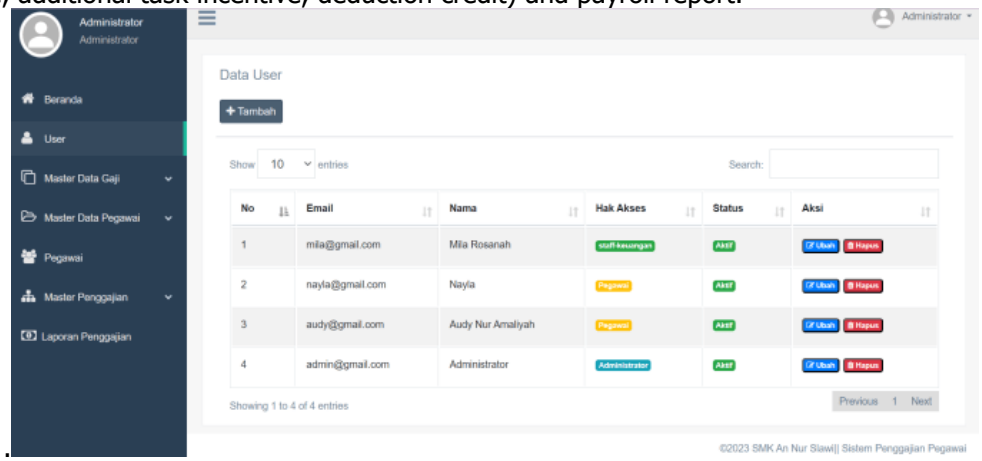

Figure 6. Administrator user page

Figure 7 shows the payroll page in the Adminstrator section where there is an "Add" menu to add payroll data to be created and a "Print Report" menu which can be used as a financial report.

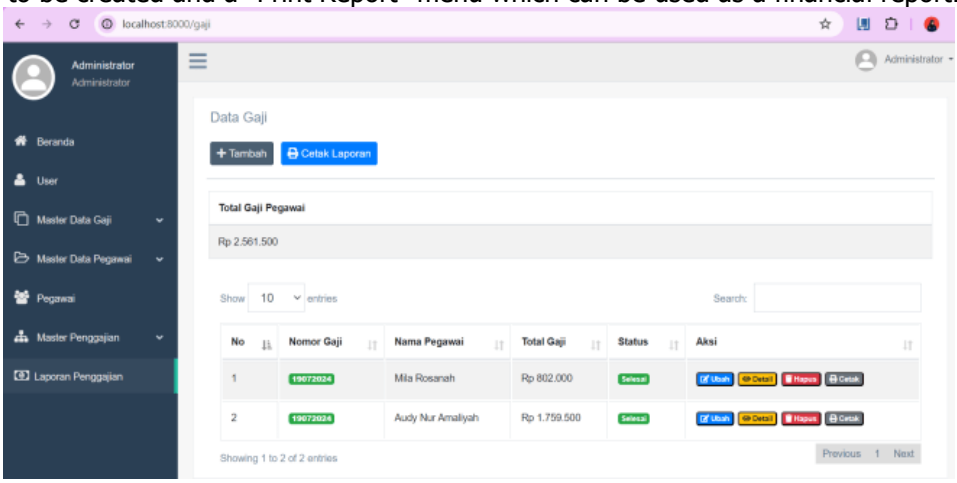

Figure 7. salary page

Corie Mei Hellyana: *Corresponding Author

JURNAL INFORMATIKA DAN REKAYASA PERANGKAT LUNAK (JATIKA)
Volume 6, Number 2, June 2025, Page 137-148
E-ISSN 2797-2011 P-ISSN 2797-3492
https://publikasi.teknokrat.ac.id/index.php/jatika/index
DOI: https://doi.org/10.33365/jatika.v6i2.130

Figure 8 shows the employee page, where employees can see the total salary received and can print the pay slip by clicking the "Print" button. In addition to seeing the total salary received, employees can also update their data in the "Personal Biodata" menu.

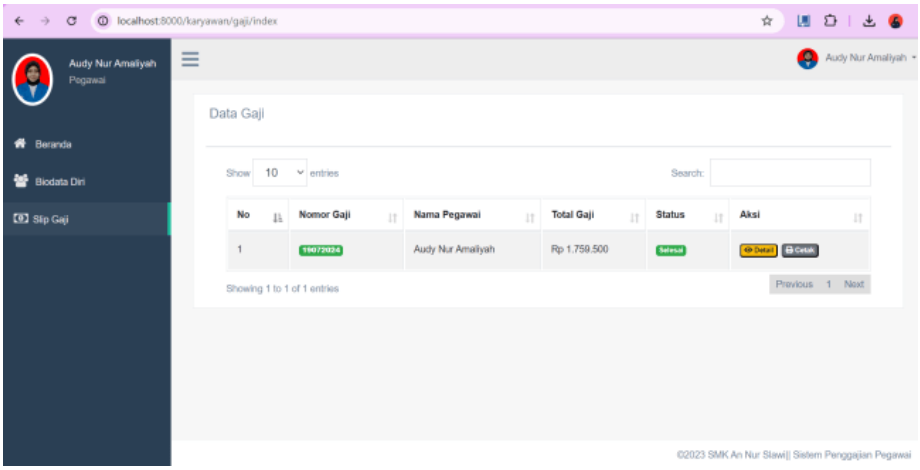

Figure 8. employee pay slip page

3.4 Testing

System testing is carried out with the aim that developers can ensure whether the application that has been developed/created can function according to needs, expectations or not. And in this research, the testing process to find out how the program functions can run well can be done by testing using the black box method. Testing was carried out in this study by conducting test scenarios on several features in the application to see whether they were running according to their function or not, and the table below shows some examples of test scenarios that have been carried out on the admin and user sides.

Table 1. Black Box Testing Results Admin Login Form

No	Test Scenario	Test Case	Expected results	Test Results
1.	Email and password are not filled then click the Login button	Email : (blank) Password : (blank)	The system will deny access and display the message "email ad password fields are required"	As expected (valid)
2.	Type Email and Password are not filled or empty then click the Login button	Email: admin@gmail.com Password: (empty)	The system will deny access and display the message "password column must be filled	As expected (valid)
3.	Email is not filled (blank) and password is filled then click the Login button	Email: (blank) Password: P@55word	The system will deny access and display the message "email field must be filled in"	As expected (valid)
4.	Type one of the wrong conditions in Email or Password then click the Login button	Email: admin@gmail.com (correct) Password: 1234678 (wrong)	The system will deny access and display the message "Login failed"	As expected (valid)
5.	Type Email and Password with the correct data then	Email: admin@gmail.com	The system will accept access and Login and	As expected (valid)

Corie Mei Hellyana: *Corresponding Author

JURNAL INFORMATIKA DAN REKAYASA PERANGKAT LUNAK (JATIKA)
Volume 6, Number 2, June 2025, Page 137-148
E-ISSN 2797-2011 P-ISSN 2797-3492
https://publikasi.teknokrat.ac.id/index.php/jatika/index
DOI: https://doi.org/10.33365/jatika.v6i2.130

click the Login button	(correct) Password: P@55word (correct)	display the Home	

Table 2. Black Box Testing Results Account Form

No	Test Scenario	Test Case	Expected results	Test Results
1	Click the Add button if you want to add a new account	Enter the account code and account name	The system will display the message "Data successfully saved"	As expected (valid)
2	Click the Delete button	The code and account name are automatically filled in and can be deleted	The system will display the message "Confirm data deletion" If you click the "yes, delete" button, the data will be deleted from the system and display the message "Data successfully deleted"	As expected (valid)

Tabel 3. Results of Black Box Testing User Form

No	Test Scenario	Test Case	Expected results	Test Results
1	Click the Add button if you want to add a new user	Enter photo, name, email, phone number, password, confirm password, and select the appropriate access rights and status	The system will display the message "Data successfully saved"	As expected (valid)
2	Click the Change button when you want to open the saved data	Photo, access rights, status, name, email, and cellphone number are automatically filled in and can be changed	The system will display the message "Data successfully updated"	As expected (valid)
3	Click the Delete button	Photo, access rights, status, name, email, mobile number, password, and password confirmation are automatically filled in and can be deleted	The system will display the message "Confirm data deletion" If you click the "yes, deleted" button, the data will be deleted from the system and display the message "Data successfully deleted"	As expected (valid)

Table 4. Black Box Testing Results for Job Forms

No	Test Scenario	Test Case	Expected results	Test Results
1	Click the Add button if you want to add a new position	Enter the name and hours of the position	The system will display the message "Data successfully saved"	As expected (valid)

Corie Mei Hellyana: *Corresponding Author

JURNAL INFORMATIKA DAN REKAYASA PERANGKAT LUNAK (JATIKA)
Volume 6, Number 2, June 2025, Page 137-148
E-ISSN 2797-2011 P-ISSN 2797-3492
https://publikasi.teknokrat.ac.id/index.php/jatika/index
DOI: https://doi.org/10.33365/jatika.v6i2.130

2	Click the Delete button	The name and position hours are automatically filled in and can be deleted	The system will display the message "Confirm data deletion" If you click the "yes, delete" button, the data will be deleted from the system and display the message "Data successfully deleted"	As expected (valid)

Table 5. Employee Form Black Box Testing Results

No	Test Scenario	Test Case	Expected results	Test Results
1	Click the Change button when you want to open the saved data	Photo, status, education, position, nipy, group, gender, date of birth, address, number of hours, length of service can be changed	The system will display the message "Data successfully updated"	As expected (valid)
2	Click the Detail button when you want to see all the data that has been saved	Display detailed employee information such as: name, email, cellphone number. NIP, group, education, gender, date of birth, address, number of hours, and length of service.	The system will display all employee details	As expected (valid)
3	Click the Delete button	Photo, status, education, position, nipy, group, gender, date of birth, address, number of hours, length of service are automatically filled in and can be deleted	The system will display the message "Confirm data deletion" If you click the "yes, deleted" button, the data will be deleted from the system and display the message "Data successfully deleted"	As expected (valid)

Table 6. Results of Black Box Testing Basic Salary Form

No	Test Scenario	Test Case	Expected results	Test Results
1	Click the Add button if you want to add a new Basic Salary	Select the appropriate transaction account, employee name, and gapok amount	The system will display the message "Data successfully saved"	As expected (valid)
2	Click the Detail button when you want to see all the data that has been saved	Display detailed information on basic salary data such as: date, transaction account, employee name, nip, length of	The system will display all basic salary details	As expected (valid)

Corie Mei Hellyana: *Corresponding Author

JURNAL INFORMATIKA DAN REKAYASA PERANGKAT LUNAK (JATIKA)
Volume 6, Number 2, June 2025, Page 137-148
E-ISSN 2797-2011 P-ISSN 2797-3492
https://publikasi.teknokrat.ac.id/index.php/jatika/index
DOI: https://doi.org/10.33365/jatika.v6i2.130

			service, nominal gapok, salary amount, education percentage, diploma percentage, and basic salary amount		
3	Click the Delete button		Date, transaction account, employee name, NIP, length of service, nominal gapok, salary amount, education percentage, diploma percentage, and basic salary amount are automatically filled in and can be deleted	The system will display the message "Confirm data deletion" If you click the "yes, delete" button, the data will be deleted from the system and display the message "Data successfully deleted"	As expected (valid)

Table 7. Black Box Testing Results Salary Form

No	Test Scenario	Test Case	Expected results	Test Results
1	Click the Add button if you want to add a new Salary	Select basic salary, teaching honorarium, position allowance, task incentive, and deduction credit according to the selected employee name. Then select the transaction account and status.	The system will display the message "Data successfully saved"	As expected (valid)
2	Click the Change button when you want to open the saved data	Status can be selected and changed	The system will display the message "Data successfully updated"	As expected (valid)
3	Click the Detail button when you want to see all the data that has been saved	Display detailed salary data information such as: transaction account, salary number, status, employee name, basic salary, teaching honorarium, position allowance, task incentive, deductions, and total salary	The system will display all salary details	As expected (valid)
4	Click the Delete button	Basic salary, teaching honorarium, position allowance, task incentive, credit deductions according to employee name, transaction account and status are automatically filled in and can be deleted	The system will display the message "Confirm data deletion" If you click the "yes, deleted" button, the data will be deleted from the system and display the message "Data successfully deleted"	As expected (valid)
5	Click the Print button	Displays salary number,	The system will print	As

Corie Mei Hellyana: *Corresponding Author

JURNAL INFORMATIKA DAN REKAYASA PERANGKAT LUNAK (JATIKA)
Volume 6, Number 2, June 2025, Page 137-148
E-ISSN 2797-2011 P-ISSN 2797-3492
https://publikasi.teknokrat.ac.id/index.php/jatika/index
DOI: https://doi.org/10.33365/jatika.v6i2.130

		transaction account, status, employee name, nipy, and total of all salaries received by employees as selected	the salary slip in PDF file format.	expected (valid)
6	Click the Print Report button	Displays the status, employee name, NIP, and all total employee payroll reports	The system will print the employee payroll report in the form of a PDF file	As expected (valid)

4. CONCLUSION

Based on the results of this study, it can be concluded that the development of a web-based employee payroll information system at SMK An-Nur Slawi using the V-Model method has successfully addressed the main problems previously encountered, namely manual payroll processes that were error-prone and time-consuming. The developed system has improved payroll efficiency and reduced errors in salary calculations. Testing using the black box method showed that all main features functioned as expected. The system design, which includes ERD, use case, and class diagrams, supports a well-structured database and system functionality that meets user needs. However, this system still has some limitations, such as testing conducted on a limited scale and not yet being fully implemented across all school units. Therefore, further development and broader testing are needed to enhance the system's functionality and implementation coverage.

5. REFERENCES

[1] A. Ardiansyah, M. Rosanah, and A. Nur Amaliyah, "Sistem Informasi Penggajian Pegawai Pada SMK Berbasis Website dengan Menggunakan Metode Rapid Application Development," *J. Sist. Inf. Akunt.*, vol. 3, no. 1, pp. 25–30, 2023, doi: 10.31294/jasika.v3i01.2187.

[2] E. C. Ramdhani, J. E. Safitri, S. A. Fahmi, and A. Asep, "Sistem Informasi Inventory Barang (Si Riang) Pada PT SANGHIANG PERKASA," *Jurnal Interkom: Jurnal Publikasi Ilmiah Bidang Teknologi Informasi dan Komunikasi*, vol. 15, no. 4. pp. 10–23, 2021. doi: 10.35969/interkom.v15i4.78.

[3] S. Mulyani, A. Sidik, and A. Sari, "Sistem Informasi Aplikasi Penggajian Karyawan Berbasis Web Pada PT Panca Cipta Abadi," *J. Sisfotek Glob.*, vol. 10, no. 2, p. 96, 2020, doi: 10.38101/sisfotek.v10i2.295.

[4] M. R. Z. S. Fauziyah, "Penerapan V-Model dalam Perancangan Sistem Penjualan Berbasis Web Di CV Yankstore Screen Printing," *J. PETISI*, vol. 3, no. 2, pp. 73–80, 2022.

[5] D. Hartanti, A. Hiswara, B. Pratama, A. Noeman, and B. Sanjaya, "Rancang Bangun Sistem Informasi Kepegawaian Polres Metro Bekasi Menggunakan Metode V-Model," *J. Jaring SainTek*, vol. 5, no. 2, pp. 99–106, 2023, [Online]. Available: https://ejurnal.ubharajaya.ac.id/index.php/jaring-saintek/article/view/3089

[6] R. Fajrin, Gunardi, and S. Yuda, "Perancangan Sistem Informasi Akuntansi Pengajuan Anggaran Biaya Berbasis Web Di Kantor XXX," *J. EKBIS*, vol. 9, no. 1, pp. 47–55, 2021.

[7] Rizka Novika and D. Setiawan, "Sistem Informasi Akuntansi Penggajian Pegawai Berbasis Web Dengan Metode Accrual Basis," *J. Ilm. Manaj. dan Kewirausahaan*, vol. 1, no. 3, pp. 339–347, 2022, doi: 10.55606/jimak.v1i3.407.

[8] M. F. Astuti and R. Ratnawati, "Implementasi V Model Dalam Rancang Bangun Sistem Informasi Pengelolaan Dana Pada Yayasan Bina Insan Subang," *Rabit J. Teknol. dan Sist. Inf. Univrab*, vol. 7, no. 2, pp. 200–207, 2022, doi: 10.36341/rabit.v7i2.2463.

[9] S. Balaji, "Waterfall vs v-model vs agile : A comparative study on SDLC," *WATEERFALL Vs V-MODEL Vs Agil. A Comp. STUDY SDLC*, vol. 2, no. 1, pp. 26–30, 2012.

[10] Nunung Mardiah, Fika Nur Afifah, Yuda Syahidin, and Irda Sari, "Design of an Insurance Patient Visit Information System Using The V-Model Method," *Jurnal E-Komtek (Elektro-Komputer-Teknik)*, vol. 6, no. 2. pp. 265–278, 2022. doi: 10.37339/e-komtek.v6i2.1018.

[11] Y. Yuningsih *et al.*, "Penerapan Metode V-Model Dalam Perancangan Sistem Penjualan Online Produk Furniture Menggunakan Php Mysql Di Pd Dua Putri," *Jurnal Informasi dan Komputer*, vol. 10, no. 2. pp. 182–188, 2022. [Online]. Available: http://dcckotabumi.ac.id/ojs/index.php/jik/article/view/343

[12] A. A. Permana, B. Fadillah, and R. Taufiq, "Penggunaan Metode V-Model Untuk merancang Sistem Informasi E-Logbook Berbasis Website," *Jurnal Minfo Polgan*, vol. 12, no. 1. pp. 297–304, 2023. doi:

Corie Mei Hellyana: *Corresponding Author

JURNAL INFORMATIKA DAN REKAYASA PERANGKAT LUNAK (JATIKA)
Volume 6, Number 2, June 2025, Page 137-148
E-ISSN 2797-2011 P-ISSN 2797-3492
https://publikasi.teknokrat.ac.id/index.php/jatika/index
DOI: https://doi.org/10.33365/jatika.v6i2.130

10.33395/jmp.v12i1.12347.

[13] A. Alfarisy, F. Fenando, and M. S. Muarie, "Sistem Informasi Penjualan dan Persediaan Barang Berbasis Web Menggunakan Metode V-Model pada Toko Arif Gorden," *J. Inf. Technol. Ampera*, vol. 2, no. 1, pp. 1–16, 2021, doi: 10.51519/journalita.volume2.isssue1.year2021.page1-16.

[14] M. Ruswiansari, A. F. Farozi, and S. R. Wardhana, "Pengembangan Sistem Pegawai (Simpeg) Berbasis Mobile Menggunakan Metode V-Model," *INTEGER J. Inf. Technol.*, vol. 9, no. 1, pp. 85–96, 2024.

[15] Y. A. Dewantara, A. Primajaya, and E. H. Nurkifli, "Rancang Bangun Website Penyewaan Lapangan Menggunakan Framework Laravel (Studi Kasus: Gor Jaya Abadi)," *J. Inform. dan Tek. Elektro Terap.*, vol. 12, no. 3, 2024, doi: 10.23960/jitet.v12i3.4762.

[16] F. Sinlae, E. Irwanda, Z. Maulana, and V. E. Syahputra, "Penggunaan Framework Laravel dalam Membangun Aplikasi Website Berbasis PHP," *Jurnal Siber Multi Disiplin (JSMD)*, vol. 2, no. 2. pp. 119–132, 2024. [Online]. Available: https://creativecommons.org/licenses/by/4.0/

Corie Mei Hellyana: *Corresponding Author