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Development of the Berry Happy Application for the Digitalization of Bedugul Culinary MSMEs Using the Scrum Approach

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Abstract

The High strawberry production in the Bedugul area often results in surplus harvests that are not fully absorbed by the market, creating challenges for local farmers and strawberry-based culinary MSMEs. One of these enterprises is Berry Happy, which processes strawberries into various dessert products. However, the business still relies on manual transaction recording and has limited market reach. This study aims to design and develop a mobile-based e-commerce application to support the digitalization of business processes at Berry Happy. The application was developed using the Flutter framework and the Agile Scrum methodology, which consists of product backlog determination, sprint planning, sprint implementation, sprint review, and sprint retrospective activities. The resulting system provides features for customer registration, product browsing, shopping cart management, checkout processing, transaction history, and menu management for business owners. Functional testing was conducted using the Black Box Testing method to evaluate whether each feature operated according to the specified requirements. The testing results showed that all defined test scenarios were successfully executed and produced outputs consistent with the expected results. The developed application facilitates digital transaction management, supports product promotion through a mobile platform, and provides a more structured approach to recording business transactions. These findings indicate that the application can serve as a practical digital solution to support the operational activities of culinary MSMEs.

Keywords: Agile Scrum, Black Box Testing, E-Commerce, Flutter, Mobile Application, MSME.

1. Introduction

Bedugul, situated in the highlands of Bali, is a well-known tourist destination and a center for strawberry plantations, where many local residents work as farmers. However, the high level of strawberry production in the area often results in unsold harvests, causing significant financial losses for the local farmers. To address this issue, “Berry Happy” was established as a local Micro, Small, and Medium Enterprise (MSME) operating in the culinary sector, specifically focusing on processing strawberries into various desserts. This initiative not only creates a profitable business opportunity but also directly contributes to increasing the welfare of local farmers by absorbing their overproduced harvest.

In the current digital era, the utilization of information technology has become a cornerstone in reshaping business practices. Despite their central role in the national economy, many MSMEs still rely heavily on manual processes for managing their daily operations. Manual operational methods in MSMEs, especially in the pastry and bakery sector, are proven to result in slower business growth compared to those that have undergone digitalization [1]. Furthermore, relying on manual transaction recording can lead to disorganized data and hinder the decision-making process for the business owners [2]. Therefore, transitioning to a digitalized system through an e-commerce platform is an urgent necessity to simplify order management, record transactions efficiently, and expand the market reach for local culinary MSMEs [3].

To fulfil this technological need, this study focuses on developing the “Berry Happy” mobile-based e-commerce application. The application is built using the Flutter framework. Flutter is an open-source framework developed by Google that enables high-performance cross-platform application development [1]. This cross-platform capability allows developers to create applications for both Android and iOS operating systems using a single

codebase, which significantly reduces development time and minimizes errors [4]. Furthermore, Flutter is highly regarded for its customizable widget-based layout, allowing the creation of visually appealing and responsive user interfaces [5].

In terms of software engineering, this project implements the Agile Scrum methodology. Compared to traditional development models, the Agile Scrum method provides a more structured, systematic, and flexible framework to handle dynamic requirement changes during the development process [3][6]. The development is broken down into short, iterative cycles known as Sprints, which typically encompass collaborative phases such as Product Backlog Determination, Sprint Planning, Sprint Execution, and Sprint Retrospective [7]. This iterative approach ensures that the developed features continuously align with the specific operational needs of the MSME. The adoption of the Agile Scrum methodology is particularly effective for culinary MSMEs, as it systematically addresses internal operational inefficiencies, such as manual transaction recording and poor inventory traceability, through structured and iterative development[8].

Finally, to guarantee the software's reliability and quality before deployment, comprehensive system testing must be conducted. The “Berry Happy” application is evaluated using the Black Box Testing method. This testing approach focuses on verifying the system's functionality ensuring that user inputs produce the expected interface outputs without requiring an examination of the internal code structures [9]. Black Box Testing has proven to be highly effective in validating key functional features through a series of test scenarios, ensuring the system operates correctly and is free from critical errors [9].

This study aims to design, develop, and test the “Berry Happy” mobile e-commerce application utilizing the Flutter framework, Agile Scrum methodology, and Black Box testing. The implementation of this application is expected to provide an effective digital platform that simplifies customer transactions, expands the MSME's market reach, and provides a sustainable solution for strawberry farmers in Bedugul.

2. Research Methods

This study focuses on the software engineering process of the “Berry Happy” mobile e-commerce application, which is designed to distribute various strawberry-based dessert products. To accommodate the dynamic requirements of the application, the Agile Scrum methodology is applied. This methodology is highly iterative and divided into several work cycles known as Sprints, which include Product Backlog Determination, Sprint Planning, Weekly Scrum, Scrum Review, and Scrum Retrospective. Based on the team's task distribution, the technical execution was carried out across three main sprints. The first sprint focused on system modeling (Use Case, Flowchart, data relational diagrams) and User Interface (UI) design. The second sprint was dedicated to implementing customer-facing features, which encompass pagination functionalities, search features, menu detail views, adding products to the cart, the checkout process, and checkout history. Subsequently, the third sprint concentrated on the owner-facing features, such as menu management (Create, Read, Update, Delete), login and logout processes, and the integration of the Application Programming Interface (API) with the database. The user interface of this application was built using the Flutter framework to produce a responsive and structured cross-platform display. Because Flutter has become a central focus in the digital technology ecosystem due to its capability to streamline cross-platform application development with much higher efficiency and functional performance compared to traditional native development environments [10].

The hardware and software specifications utilized during the development, interface design, and project repository management for the “Berry Happy” application are systematically summarized in Table 1.

Table 1. Software Supporting

Product	Server	Client
Database Management	Database Server	API Service
Application Framework	Flutter SDK	Dart Environment
Version Control	GitHub Repository	Git Client

Since direct program listings or raw source codes are strictly prohibited in the writing of this manuscript, the transactional logic of the system specifically the cart and checkout features is represented using a structured algorithm. This algorithm ensures that customers can only proceed with payments for menus that have been correctly added to the cart, while simultaneously validating the cart data before it is transmitted to the database via the API.

The structured algorithm for this system begins when the customer starts the ordering sequence. First, the customer selects a product menu and determines the desired order quantity. If the user presses the add to cart button, the system saves the selected data into a temporary cart. Subsequently, the customer can open the cart page to review their selected items. At this stage, if the customer presses the delete button, the system will remove the specified menu from the cart. However, if the customer decides to proceed by pressing the checkout button, the system automatically calculates the total order price. Once the calculation is done, the application sends the transaction data via the API directly to the database. Finally, the system moves the transaction status into the checkout history, which effectively marks the end of the ordering process.

Once the implementation of the system is complete, the software validation phase is conducted to guarantee the reliability of the application's functionality. This testing system utilizes the Black Box Testing method. The Black Box testing approach focuses on evaluating the suitability of the interface output against user input without the need to examine or understand the internal program code structure behind it [9]. The test scenarios are focused on critical e-commerce features such as successful login and logout processes, search validations, adding to the cart, and checkout executions. This functional testing aims to ensure the system is free from logical defects, a method that has proven highly effective in identifying interface functional errors in innovation information systems and digital applications [9]. To mathematically quantify the success rate of this validation phase, this study employs a testing effectiveness formula. The functional effectiveness percentage is calculated by dividing the number of successfully executed and valid test scenarios by the total number of test scenarios conducted and then multiplying the result by one hundred percent. The functional effectiveness percentage is calculated by dividing the number of successfully executed and valid test scenarios by the total number of test scenarios conducted, using the following equation:

$$\text{Effectiveness} = (\text{Successful Test Cases} / \text{Total Test Cases}) \times 100\%$$

This flawless 100% pass rate is consistent with recent software quality assurance studies, which emphasize that comprehensive pre-deployment testing successfully minimizes user frustration and prevents critical defects when implementing digital systems for MSMEs [11].

Prior to the coding (implementation) phase, the system architecture and the interaction between the two main actors (namely Customer and Owner) were visually modeled using Use Case Diagrams. This modeling acts as a blueprint that bridges the communication between the development team and the MSME, ensuring the ordering workflow of the “Berry Happy” application perfectly aligns with the operational business requirements.

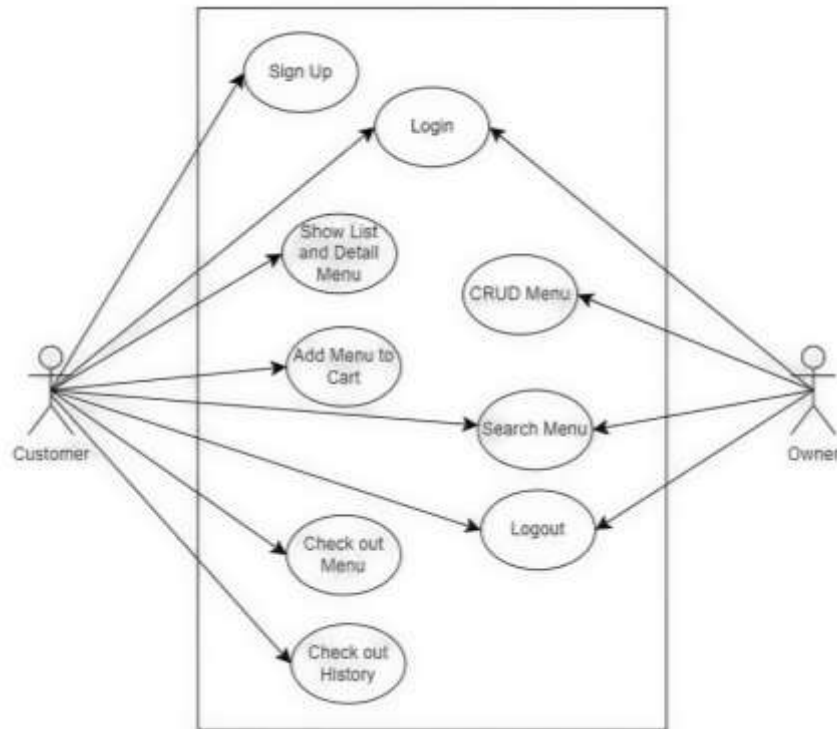


Figure 1. Berry Happy Use Case Diagram

Figure 1 illustrates the Use Case Diagram of the Berry Happy application, which defines the interactions between two primary actors, namely the Customer and the Owner. The Customer role is designed to facilitate the shopping experience. Customers begin by registering through the Sign Up process and accessing the platform via Login. Once authenticated, they can browse the product catalog using the Show List and Detail Menu, look for specific items using the Search Menu, and manage their orders through the Add Menu to Cart and Check out Menu features. Furthermore, Customers can review their past transactions via Check out History and securely exit the system using Logout. On the other hand, the Owner role represents the administrative side of the application. Upon a successful Login, the Owner is primarily responsible for managing the product catalog through the CRUD Menu (Create, Read, Update, Delete) functionality. Similar to the Customer, the Owner also has access to the Search Menu to easily find specific products and can use Logout to exit the administrative dashboard safely.

3. Results and Discussions

The results of this research comprise the successful implementation of the mobile e-commerce software interface based on the iterative sprint cycles and the subsequent functional validation of the system. The discussion section focuses deeply on explaining how these implementation results directly address the operational needs of the “Berry Happy” MSME and provide a sustainable digital solution to the overproduction problem of strawberry harvests.

Results The implementation of the “Berry Happy” e-commerce application was successfully executed through the application of the Agile Scrum methodology, which was systematically divided into three main sprint stages. The interface development utilizing the Flutter framework resulted in a highly responsive and high performance cross platform application. The utilization of the Flutter framework in mobile commerce development has been proven to provide a highly intuitive shopping experience through seamless interface navigation, flexible custom widgets, and consistent visual design across different devices [12]. This system facilitates two primary user roles with distinctly separated access rights and interfaces, namely the customer and the business owner. This strict interface separation is a crucial operational measure, ensuring that each user can perform their activities focusably without any authorization overlap or data redundancy.

On the customer interface side, the system provides a robust authentication facility that includes registration and login processes. After successfully passing the authentication stage, the customer is directed to the main dashboard

page which presents a comprehensive catalog of strawberry-based dessert menus. This home page is equipped with advanced search and pagination features to make it easier for customers to browse specific products efficiently. The management of data flow from the database to the application interface is facilitated by the integration of an Application Programming Interface (API), a modern architectural approach that has proven highly effective for handling complex system logic and centralized cross-platform data management [13]. Through this seamless data integration, customers can comfortably view the details of each menu, add desired products to a digital shopping cart, and proceed to the checkout stage to process the order with a high degree of accuracy.

Meanwhile, on the business owner's interface side, the technical implementation focused on building a comprehensive administrative panel. The MSME owner is presented with a specialized dashboard page that allows full management of menu data through addition, reading, updating, and deletion functions. This data management process is technically supported by dropdown selection features as well as file upload facilities to update product images dynamically. All updates made by the owner on this administrative panel are automatically reflected in real-time on the customer-facing application. This synchronized system architecture greatly minimizes miscommunication regarding product stock availability between the seller and the buyers.

To visually demonstrate the successful implementation of the system, several screen captures of the Berry Happy application are presented below. These visual representations highlight the intuitive user interfaces designed for the two primary user roles. The customer facing screens display the robust authentication facility, the comprehensive dessert catalog on the main dashboard, and the seamless checkout stage. Conversely, the administrative panel screens illustrate the specialized dashboard page that allows full management of menu data utilized by the business owner. These visual outcomes confirm that the strict interface separation and responsive layout have been perfectly realized to support the enterprise operations.

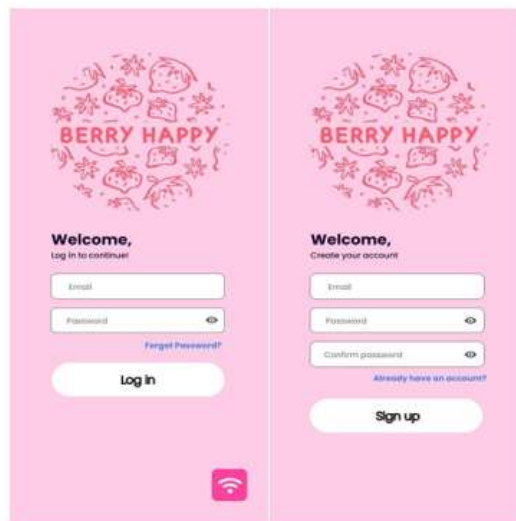


Figure 2. Login Implementation

Figure 2 illustrates the user authentication interfaces of the Berry Happy application. The leftmost section displays the secure login screen, featuring a welcoming pink background adorned with the beautiful Berry Happy logo. This page provides input fields for the user email and password, along with a prominent login button and a forgot password link to ensure safe access to the digital platform. Meanwhile, the rightmost section showcases the registration or sign up interface. Designed consistently with the login page, it allows new customers to create an account by filling in their email, creating a secure password, and confirming the password in a dedicated third field. A sign up button completes the registration process, while a convenient text link is available for users who already possess an account to seamlessly return to the login screen.

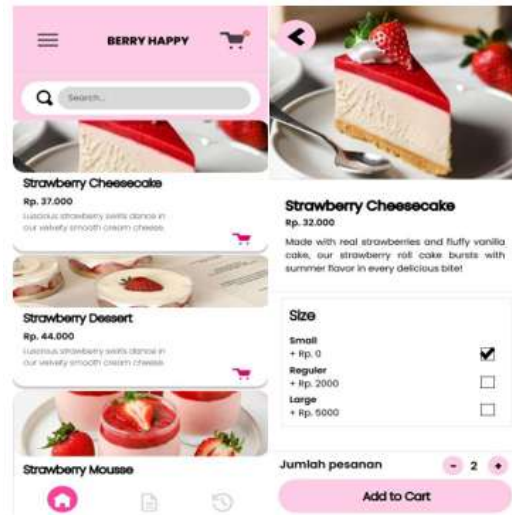


Figure 3. Customer Dashboard and Menu

Figure 3 illustrates the primary shopping interfaces for the customers. The leftmost section displays the main customer dashboard, which features a convenient search bar, a shopping cart icon with a notification badge, and a visually appealing catalog of strawberry desserts. Each product card includes an appetizing image, the item price, a short description, and a quick purchase icon for a faster shopping experience. Meanwhile, the rightmost section showcases the comprehensive menu detail page. This interactive screen presents a larger product image alongside a detailed text description. Furthermore, customers can easily customize their orders by selecting their preferred portion size, adjusting the order quantity, and seamlessly finalizing their choice by pressing the prominent add to cart button located at the very bottom of the screen.

To guarantee the reliability of the implemented software before it is released to the end-users, a thorough functionality evaluation was conducted using the Black Box Testing method. This specific approach was selected due to its high effectiveness in validating critical features in digital applications based purely on the interface, without needing to analyze the underlying programming code structure behind it [9]. This evaluation rigorously focuses on observing the system's output behavior when given various expected and unexpected input scenarios by the user. The detailed outcomes of this interface functionality testing are documented in Table 2.

Table 2 Black Box Testing Results

Testing Scenario	Expected Result	Testing Result	Status
User authentication on login and sign-up pages	System validates credentials and grants access based on user role	Access is granted accurately according to user data	Valid
Searching and browsing the product menu catalog	System displays a menu list relevant to the search keywords	Menu list appears accurately	Valid
Managing products in the shopping cart	System successfully adds, removes, and calculates the total order price	Calculation and item manipulation run accurately	Valid
Executing the checkout process and recording history	System records new transactions and displays them in the customer history	Transactions are successfully saved to the database	Valid
Managing product menu data by the business owner	System successfully adds, edits, or deletes products along with their images	Data updates are successfully recorded by the system	Valid

Based on the testing data presented in Table 2, all executed test cases produced completely valid outputs that perfectly matched the expected scenarios. Referring to the testing effectiveness formula described in the research method section, the functional effectiveness rate of the system reached exactly one hundred percent. This flawless result aligns with other studies on digital information systems developed using Agile Scrum, where interface designs that are evaluated iteratively during sprints have proven capable of meeting operational feasibility and visual consistency before the system is officially launched [14]. The perfection of these test results proves that the application interface is free from critical functional logic defects, thus formally declaring this information system highly reliable and ready for operation in an actual business environment.

The successful design and development of this mobile e-commerce application provide a direct and practical answer to the distribution and marketing problems experienced by the “Berry Happy” MSME and the local strawberry farmers in the Bedugul area. The transition from conventional transaction methods to this structured digital platform effectively eliminates the boundaries of time and distance for buyers. Consumers who previously had limited time to visit the physical store can now effortlessly browse products, place orders, and track transactions directly from their smartphones. The implementation of such an integrated digital platform has been proven to significantly shorten the agricultural marketing distribution chain, ensuring that processed local agricultural products can directly and efficiently reach the end consumers [13].

Furthermore, the digitalization of this sales channel brings a highly significant positive impact on the management of the MSME's transaction recording. Historically, many MSMEs have experienced severe obstacles in compiling business recapitulations due to unsystematic manual recording and a lack of competent human resources in the accounting field [15]. With the integration of a digital order history feature in the “Berry Happy” application, every single transaction flow is recorded automatically and securely within the database. This neat and structured digital data recording serves as an essential first step for business owners to monitor sales performance precisely and, in the future, compile standard financial reports with ease, completely replacing the prone-to-error manual notebook methods.

Despite the overall success of the system, the iterative nature of the Agile Scrum methodology was particularly tested during the second sprint. The development team encountered a technical challenge regarding state management within the Flutter framework, where data synchronization between the product catalog and the temporary shopping cart experienced minor delays. However, through the collaborative Weekly Scrum and Sprint Review sessions, this issue was promptly identified and resolved by optimizing the state management approach. This real world obstacle demonstrates the flexibility and responsiveness of the Agile Scrum framework in accommodating dynamic technical adjustments, ensuring the final product remains robust and highly functional.

Ultimately, the utilization of the Flutter framework combined with the iterative collaboration of the Agile Scrum method ensures that every feature built is perfectly relevant to the dynamic daily operational needs of the MSME. This effort acts not only as a mere transactional tool but also actively forms a sustainable digital business ecosystem. The projected increase in sales volume of dessert products through this application is expected to generate a multiplied economic impact, which will culminate in a substantial improvement in the financial welfare of local strawberry farmers in the Bedugul region because their harvests can be absorbed optimally.

4. Conclusion

The development of the “Berry Happy” mobile e-commerce application has been successfully completed using the Agile Scrum methodology and the Flutter framework. The iterative sprint approach ensured that the system accurately met the dynamic operational needs of the MSME, while the implementation of Flutter provided a highly responsive, efficient, and unified cross-platform user interface [4]. Furthermore, the functional evaluation using the Black Box Testing method confirmed that the system operates flawlessly with a one hundred percent effectiveness rate. This guarantees that all critical features, such as user authentication, shopping cart management, checkout execution, and the administrative dashboard, are completely free from logical defects and are ready for real-world deployment. Practically, this digital platform effectively resolves the core distribution and marketing issues faced by the “Berry Happy” enterprise. It successfully cuts the conventional marketing distribution chain, allowing local strawberry farmers in the Bedugul area to directly and efficiently reach a wider consumer base. By digitizing the transaction and order history, the application also establishes a crucial foundational step for the MSME to abandon manual bookkeeping and manage their sales records systematically, which is an essential transformation in the modern digital economy era. For future development, it is highly recommended to enhance

the application by integrating a more complex Application Programming Interface (API) architecture to handle larger databases and concurrent user access, which has proven effective in scaling cross-platform mobile applications seamlessly [16]. Additionally, incorporating an automated financial accounting system module could further assist the MSME in generating standardized financial reports automatically. Finally, expanding the payment methods by integrating third-party payment gateways will significantly optimize the checkout process, ensuring a more seamless and secure digital transaction ecosystem for both the business owner and the customers. Adopting integrated virtual accounts or popular digital wallets will eliminate the tedious process of manual transfer validation, thereby providing a more instantaneous, transparent, and trustworthy transaction experience for everyone involved.

Reference

- [1] M. A. S. Ramadhinata, A. Agussalim, and N. C. Wibowo, "RANCANG BANGUN E-MARKETPLACE UMKM PASTRY & BAKERY (BAKEHOUSE) BERBASIS MOBILE MENGGUNAKAN FRAMEWORK FLUTTER," *Jurnal Informatika dan Teknik Elektro Terapan*, vol. 13, no. 1, Jan. 2025, doi: 10.23960/jitet.v13i1.5601.
- [2] M. handika and L. S. Musmini, "SISTEM INFORMASI AKUNTANSI PENJUALAN UMKM BERBASIS FINTECH (STUDI KASUS UMKM DI SINGARAJA)," *JIMAT (Jurnal Ilmiah Mahasiswa Akuntansi) Universitas Pendidikan Ganesha*, vol. 12, no. 2, pp. 454–62, Sep. 2021, doi: <https://doi.org/10.23887/jimat.v12i2.29496>.
- [3] M. Fardiansyah, A. Wahyudin Nur, A. Arief, and I. Hizbullah, "AGILE SCRUM UNTUK PLATFORM E-COMMERCE UMKM KULINER : STUDI KASUS TOKO ANAFI KOTA TERNATE," *Jurnal Pedimas Pasifik*, no. 1, pp. 57–65, 2022, Accessed: May 31, 2026. [Online]. Available: <https://jurnalteknikpasifik.id/index.php/JPPAS/article/view/45>
- [4] A. S. Putri, A. Eviyanti, and H. Hindarto, "Rancang Bangun Aplikasi E-Commerce Berbasis Android Pada Toko Suryamart Menggunakan Framework Flutter," *Jurnal Teknologi Dan Sistem Informasi Bisnis*, vol. 5, no. 3, pp. 257–265, Jul. 2023, doi: 10.47233/jteksis.v5i3.851.
- [5] Putra Prima Arhandi, Annisa Taufika Firdausi, Vivin Ayu Lestari, Abdurasyid Muhasibi, Dharma Yudistira Eka Putra, and Banni Satria Andoko, "Application of Construct on Scaffold Concept Map in Mobile Programming Learning with Flutter Layout Topic," *Jurnal Nasional Pendidikan Teknik Informatika (JANAPATI)*, vol. 12, no. 2, pp. 263–272, Jul. 2023, doi: 10.23887/janapati.v12i2.60629.
- [6] I. G. N. D. Hardisty, I. G. A. A. D. Indradewi, and G. S. Mahendra, "IMPLEMENTASI SCRUM DALAM PENGEMBANGAN WEBSITE SISTEM INFORMASI GO.GRILLED," *Jurnal Pendidikan Teknologi dan Kejuruan*, vol. 23, no. 1, pp. 35–47, Jan. 2026, doi: 10.23887/jptk-undiksha.v23i1.110613.
- [7] A. Basri, D. M. U. Atmaja, A. R. Hakim, and A. R. Sanjaya, "Application of Scrum Methodology in The Design of Micro, Small, and Medium Enterprise Systems: A Case Study on Laundry Services," *International Journal Software Engineering and Computer Science (IJSECS)*, vol. 3, no. 3, pp. 537–544, Dec. 2023, doi: 10.35870/ijsecs.v3i3.1968.
- [8] M. R. Fanani, N. Hadian, and N. Hayati, "Design and Development of a Web-Based Operational Information System for Culinary MSMEs Using Agile Scrum," *G-Tech: Jurnal Teknologi Terapan*, vol. 10, no. 1, pp. 131–139, Jan. 2026, doi: 10.70609/g-tech.v10i1.8482.
- [9] P. N. Prameswari, A. R. R. Pujiyanto, I. K. V. Suputra, P. M. E. Maharani, and G. S. Mahendra, "Pengujian Fungsionalitas dan Usabilitas Pada Sistem Informasi Inovasi Menggunakan Black Box Testing," *STRING (Satuan Tulisan Riset Dan Inovasi Teknologi)*, vol. 10, no. 3, pp. 267–277, Apr. 2026, doi: <https://doi.org/10.30998/ygr6k818>.
- [10] H. Diansyah and S. Syafrinal, "Design and Development of a Mobile Application Using Android Studio and Flutter," *Journal Mobile Technologies (JMS)*, vol. 3, no. 2, pp. 69–76, Sep. 2025, doi: 10.59431/jms.v3i2.646.
- [11] N. Nadia and Y. Yulhendri, "Design and Development of a Mobile-Based 'Sembako' Application Using Flutter," *INSOLOGI: Jurnal Sains dan Teknologi*, vol. 4, no. 6, pp. 1592–1605, Dec. 2025, doi: 10.55123/insologi.v4i6.6790.
- [12] A. Khan, H. Panhalekar, H. Vishwakarma, M. Gujar, P. Abhay, and E. Patil, "A Cross-Platform Mobile Commerce App Using Flutter," *International Research Journal of Innovations in Engineering and Technology (IRJIET)*, vol. 9, no. 5, pp. 223–227, 2025, doi: 10.47001/IRJIET/2025.905029.
- [13] L. J. E. Dewi, K. A. Seputra, and I. N. S. W. Wijaya, "PENGEMBANGAN APLIKASI MOBILE SISTEM INFORMASI PRODUK PERTANIAN KABUPATEN BULELENG," *SINTECH (Science and Information Technology) Journal*, vol. 5, no. 1, pp. 66–74, Apr. 2022, doi: 10.31598/sintechjournal.v5i1.999.
- [14] K. Pratama *et al.*, "PERANCANGAN SISTEM INFORMASI PENYEWAAN LAPANGAN OLAHRAGA BERBASIS WEB MENGGUNAKAN METODE AGILE SCRUM," *Jurnal Informatika dan Teknik Elektro Terapan*, vol. 13, no. 3, Jul. 2025, doi: 10.23960/jitet.v13i3.6752.
- [15] N. M. Y. Yuniartini and N. K. Sinarwati, "Penerapan Sistem Informasi SAK EMKM Melalui Aplikasi Berbasis Android LAMIKRO Pada UMKM Bagus Batu Bata," *Jurnal Ilmiah Akuntansi dan Humanika*, vol. 12, no. 3, pp. 618–629, Jan. 2023, doi: 10.23887/jiah.v12i3.50050.
- [16] K. A. Seputra and L. J. E. Dewi, "A Design of Patient Registration Apps using Flutter, Laravel and, Vue JS," in *Proceedings of the 4th International Conference on Vocational Education and Technology, IConVET 2021, 27 November 2021, Singaraja, Bali, Indonesia*, EAI, Mar. 2022, doi: 10.4108/eai.27-11-2021.2315532.