

# Employee Daily Report Application Using Flutter Framework (Case Study: PT. Planet Selancar Mandiri)

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## ABSTRACT

Planet Surf Retail company is a company that moves under PT. Planet Selancar Mandiri management has the first Planet Surf store located at Galleria Shopping Mall, Jogjakarta, since 1997 and still operates. Planet Surf has 54 stores spread across 31 cities throughout Indonesia and continues to grow to meet customer fashion needs. Each store has one leader and eight to ten employees. Nowadays, Planet Surf still uses third-party applications to help their jobs daily. The employees report their activity, employment, and progress using third-party applications, and the leader sees it. But the problem is third-party applications can not organize their report by name, date, and category. It makes there a condition that the leader misses seeing employees' reports, employees find it hard to report their activities, and misunderstandings between employees and the leader. In this research, the Author tries to develop an Android application to see if it can help employees and leaders finish their jobs. Features from the Application are daily reports, job reports, and progress reports, and the leader can create reports for all employees.

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## 1. INTRODUCTION

Planet Surf Retail company is a company that moves under PT. Planet Selancar Mandiri management had the first Planet Surf store located at Galleria Shopping Mall, Jogjakarta, on 31<sup>st</sup> January 1997, and it still operates now. Planet Surf also provides various kinds of surfing clothes, skateboarding, and streetwear from international brands such as Spyderbilt, Insight, Juice Ematic, Planet Surf Clothing, and other international clothes brands. Nowadays, there are 54 Planet Surf stores spread across 31 cities throughout Indonesia and continue to grow to meet customer fashion needs.

One leader leads each area and consists of several Planet Surf stores. Every store has 8 to 11 store employees, and every store has three divisions: cashier, sales team, and inventory. Every team has their respective job desk, and all divisions report their activities daily to the leader to

monitor every employee store's activity every day. Using the Telegram application for activity reporting has resulted in a suboptimal communication and monitoring process between the leader and store employees. This is primarily due to the excessive reporting procedures that the leader must undertake to relay information to the main office. Consequently, the leader frequently overlooks the daily reports submitted by store clerks.

Due to the lack of fluid communication between the leader and store personnel, the daily report has encountered difficulties, leading to a significant accumulation of work within the shop; the sales procedure has experienced a delay, decreased store revenue and additional working hours. Primarily, there is a possibility of a decline in evaluating the key performance indicator among store workers. "Key Performance Indicators (KPI) are important for monitoring the performance in the industry" [1]. It means if the KPI from the industry decreases, the industry or the store may be closed. Based on the problems, the Author will develop a mobile application to see if the assessment of key performance indicators from the store and industry increases or decrease. Additionally, it is crucial to consider the potential impact of mobile applications on the evaluation process for employee promotions.

## **2. RESEARCH METHOD**

For this research, the Author collects data through interviews and observation, using the Software Development Life Cycle (SDLC) Waterfall model to develop a system. For the system's novelty, the Author studies literature to see, learn, and complement the missing part from previous research.

### **2.1. Data Collecting**

Data is the most essential part of the research. Without data, we can't proceed with our study. "Collecting the data is the main step in research because the main purpose of research is to get the data" [2]. There are many ways to collect the data. The Author uses interviews and observation to collect the data in this research.

As we know, an interview is gathering multiple individuals to exchange information or ideas in a structured question-and-answer format to reach a resolution or understanding about a specific topic [3]. The Author interviews store clerks and leaders to know their most significant problems and needs. As a result, store clerks and leaders always have trouble reporting their activities daily. Using third-party applications does not make their jobs easier. They gathered in large groups to communicate with each other, coordinate among store employees, and report their activities. Cellphone signal is their first problem; not every employee has a good cellphone signal to communicate and document their daily activities. The impact of this is miscommunications between store clerks. The essence of communication is how senders and recipients understand each other without any mistakes [4], but how can that happen if they have miscommunication? Second, because they all gathered in large groups, all reports were collected into one, so leaders did not know who was sending the information. And the last one, too many activities in their group makes the report not neatly arranged, causing the assessment to give them not so good and sometimes bad result.

After finishing the interview, the Author observes the circumstances. Making observations functions to verify the unity between the case and interview results. Observation is a data collection technique that involves using direct or indirect observations [5]. As a result of the observation, the Author found that store clerks and leaders need an application that fits into their jobs, supports their jobs, and at the end of the day, Application can report their activities detailed and neatly arranged.

### **2.2. Literature Study**

Literature study is to find what is the novelty of research. The components encompassed in a literature study comprise acquiring information from a library, reading, making annotations, and analyzing research materials [6]. The literature review comprehensively examines relevant scholarly works about the subject matter under investigation. It involves the process of reading and acquiring knowledge from the literature that is directly related to the research issue at hand.

Ridwan researched how to increase effectiveness by developing an application to monitor activities at PT. Multi Garmen Jaya [7]. Before that, PT. Multi Garmen Jaya counted every sale they had conventionally, created a report, and sent the information using third-party applications. All the information sent is piled, so finding reports for specific days or transactions is no longer possible. Ridwan et al. developed an application that can input and count every data automatically, saving report history, checking the availability of goods, and giving reminders to store clerks who haven't sent the report. This research shows supervisors can control store clerks more efficiently, report on time, and help the store increase its sales. But deficiency from this research supervisor only holds store clerks who have not and have submitted a report. The Application can't measure how the store clerks work to determine how much bonus will be given to store employees. And the Application is web-based, so supervisors must be in front of their computers to monitor employees.

Hasan researched how he wanted to make it easy to check inventory from one of the biggest cellphone stores [8]. The store does not use a computerized database system, so price and stock inspections are still performed manually, and the sales database is still maintained using thick books. The result of this research, the Author succeeds in making store easy to check inventory and record sales digitally. The deficiency of this research is that the Author only counts time and records sales digitally. The Author does not see the Application's effectiveness, impact from significance, and measure store performance.

Komala et al. conducted the following research on how they supervise every instructor and employee activity [9]. The study was done because the school had trouble tracking what teachers and workers did during school hours. The outcome of this research is that the school can track every teacher's and employee's activity, allowing it to monitor their loyalty. The shortcoming of this research is that only instructors' and employees' permit and entry activities are recorded by the Application, so the school can not measure their performance, how fast they achieve targets, or how they finish their jobs.

The research conducted by Aglis et al. states that they developed an android application for supervising employees in the Transportation Department of Central Jakarta Administration [10]. The result from this research is that the Application can manage employees from their Android handheld; they report activities to their leader, and the Application uses Open Street Map. This research has a limitation: not every job can write using the Application, which reports attendance activities, commencing work, and leave.

Rossidah et al. conducted subsequent research on how they intend to make it simpler for employees to manage student data, deliver information to parents, and assist students with their studies [11]. The shortcoming of this research is that they only collect student data, not supervise teachers, employees, and students; also, the Application is not running on mobile.

Hayati conducted the following research on how the Author creates an android application using location-based service to supervise employees in the company [12]. The result of this research is that managers, supervisors, and directors can monitor their employees, but the shortcoming of this research is that the Author only supervises the employee's location.

Azhary researched how the Author developed an application to monitor and evaluate employee performance at a factory project [13]. The result of this research is that the company can monitor and evaluate employee performance, but the Application can not recommend which employee performs best.

Following research conducted by Mardian et al., how they want to help PT. Salestrade Corp. Indonesia monitors, supervises and evaluates its employees [14]. The result of this research is that the company can supervise their employees from presence, work performance, and manage employee data. But the Application can not measure and record a company's sales; this is important because the company distributes electronics to other cities.

Sasono et al. conducted the following study on how the authors developed an application to measure employees' work performance at PT. Bluepay Digital International [15]. As a result of this study, the company can provide feedback to employees regarding their job performance using the

Application, and it is anticipated that employees' performance will enhance. The limitation of this study is the assessment based on the presence of employees and the desktop-only Application.

After the Author studies and reads all journals related to the research that the Author is doing, there are novelties in the research that the Author is doing. This study not only focuses on how to monitor and supervise employees but also on how the Application can assess job performance related to the job description and the target employees must achieve. After the assessment, the Application can give recommendations to the leader who is the best for doing their job and report their activity. Submissions from the Application may be considered for the promotion or position of an employee. Furthermore, the leader can add new employee assignments or projects and participate in their evaluations.

The Application was developed based on Android. The Author uses Android to run the Application because Android is a Linux-based operating system designed for mobile devices like smartphones, and Android is an open-source operating system [16]. For the Application itself, the Author uses the framework Flutter to develop. Flutter become a popular framework nowadays because Flutter can make cross-platform Applications [17], and using Flutter can make high-performance applications on different platforms [18].

The Author uses Laravel to manage the complete system process on the back end. Laravel is a web development framework based on MVC (Model, View, Controller) designed to reduce development costs, increase productivity, and reduce implementation time [19]. Laravel is a PHP framework, and PHP is an interpreter programming, the translation source line of code process to become machine code understood by computer [20]. The most important is PHP, an open-source programming language [21].

Lastly, the Author implements MySQL to create, read, update, and delete data. MySQL is a Database Management System (DBMS) that can manage data rapidly, accommodate enormous amounts of data, be accessed by multiple users, and have a multi-threaded process [22]. MySQL must record starting employee assessments, store revenues, and employee promotion recommendations.

### **2.3. Software Development Life Cycle (SDLC)**

The Author uses the software development life cycle (SDLC) methodology to develop the system. SDLC-based development combines processes and establishes system links [23]. For precisely, the Author uses the SDLC Waterfall model for growth. The waterfall model is a systematized and sequential information system development method [24].

Waterfall has five stages [25]. The first requirement analysis is to determine the system requirements so that users can comprehend software functionality based on system requirements. The second design is to design the system based on requirements analysis so that it can be implemented in a program afterwards. The third stage is implementation. Implementation is the stage where the system's design is translated into a program, and the result is the application system used for this research. Fourth integration. At this stage, the application system is integrated with the user to determine if the system meets the user's requirements. And the last stage is maintenance. This phase is for maintaining a system that users already use to ensure the system's performance is always optimal.

## **3. RESULTS AND ANALYSIS**

The data used in this study pertain to how to supervise employees, report activities, record store sales, designate tasks, and provide employee recommendations. This study's data analysis demonstrates how to manage stores, store employees, and those associated with the store business to provide the finest customer service possible.

### 3.1. Requirement Analysis

Before the system application was built, the Author analyzes the currently running system and how the store uses third-party applications to report its activities. At first, third-party applications help them, but with time, they even bother them. After the Author analyzes data related to the store concluded that the Author developed an application based on Android to help them and see how the Application could change their productivity.

Table 1. Requirement Analysis

Indicator	Information
Application Title	Daily Report
The Purpose of The Application	To send activity reports daily, record store sales and revenue, give assignments, permit applicants, monitor and supervise employees.
Audience	Store Employee, Leader, and Owner
Application Type	Based on Android and web-based for admin

### 3.2. Design

After the Author finishes analyzing the system that will develop, the Author designs the Application next. In this stage, the Author starts design from DFD (Data Flow Diagram), Entity Relationship Diagram (ERD), Flow Chart, and Application Design.

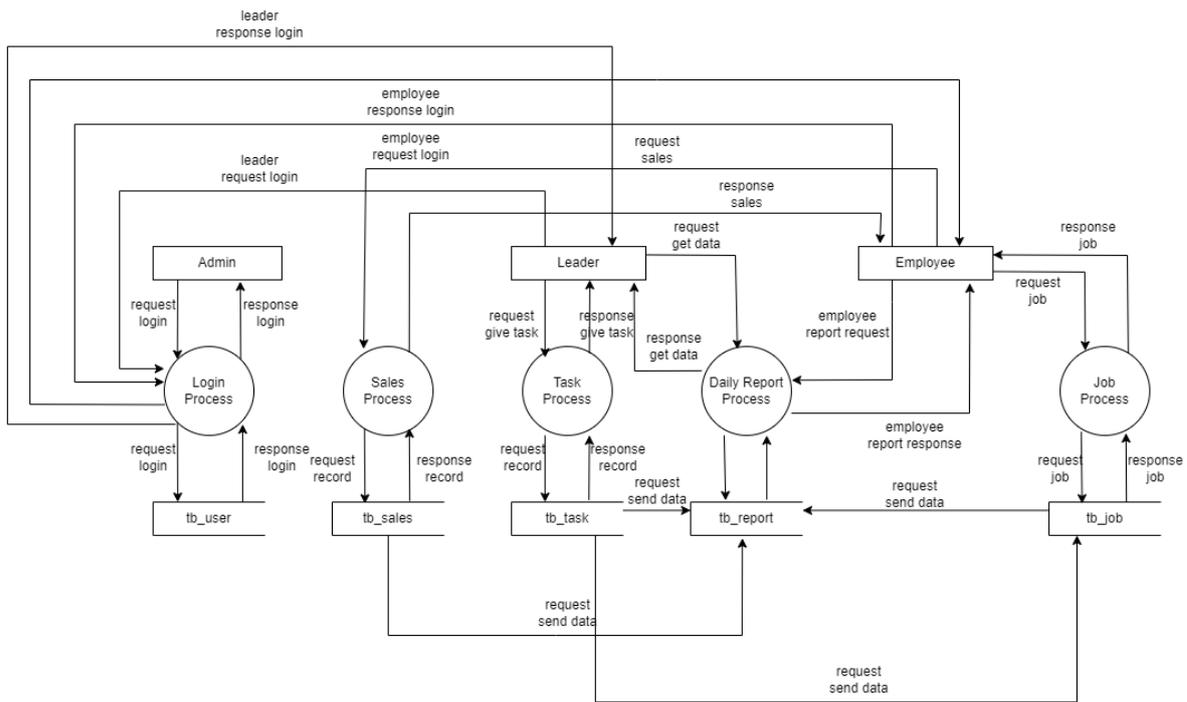


Figure 1. System Data Flow Diagram

In Figure 1, there is the system's data flow diagram. From the chart, three users can access the system. Admin controls the whole process of the system. The leader monitors and supervises the employees, gets the daily report data, gives assignments, and employees finish the job, report activities daily, and reach the target.

### 3.3. Implementation

In this stage, the Author starts developing a system based on the already-created design. In this stage, the Author creates a database using MySQL, the back end using Laravel, the front end using Flutter, and the front end for admin based on Website.

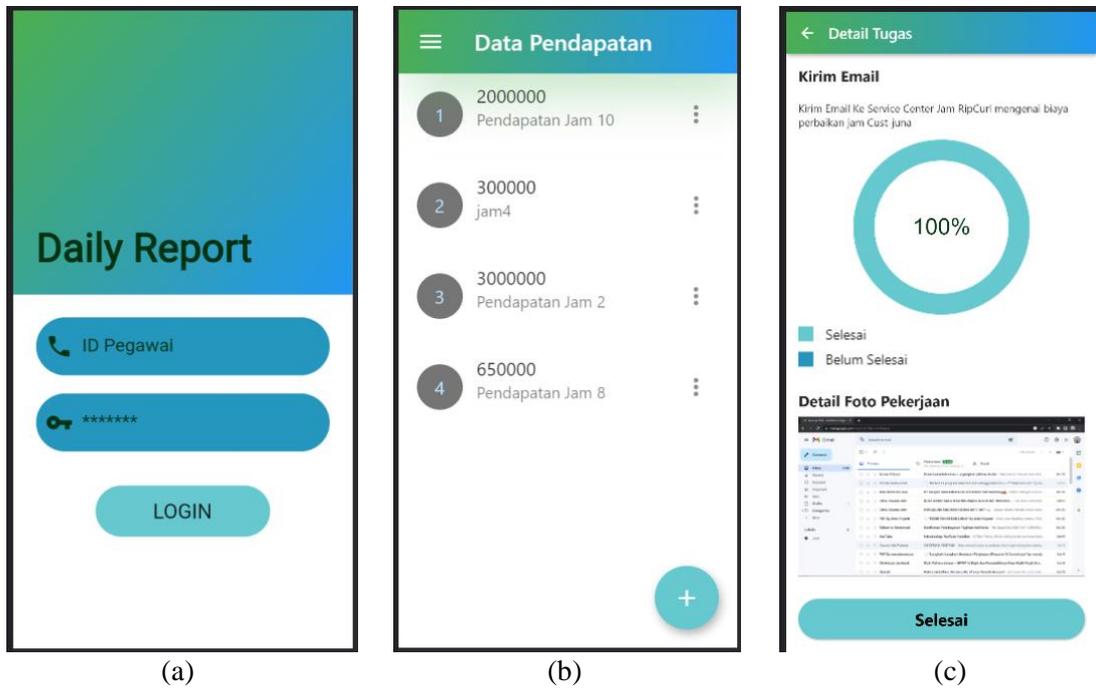


Figure 2. (a) Login Page, (b) Sales Record, (c) Task Report

Figure 2(a) is a login page. Every time the leaders and the employees want to use the Application, they must log in first. But after they are logged in, they will not get out of the Application before they sign out from the Application. Figure 2(b) is a Sales Record Page. This page will show sales records that the employees have already reported. Sales can be demonstrated based on the transaction date and current date and can be searched by transaction date. Figure 2(c) is a Task Report Page. This page will show progress from the employees' jobs, and every employee must report their job and activities on this page.

### 3.4. Integration

Integration is where the system applications have already been developed, and the users can use the Application. In this section, the Author divides into two tests for the Application. First, the Author uses a black box applications test to see if all the application features are running well. For the black box testing, there are scenarios and expected results.

Table 2. Blackbox Testing

Scenarios	Expected Result	Test Result
Login into the Application using Wrong Username and Password	The Application Will Not Move to Main Page, and There Is an Error	The Application Give an Error and is Still on the Login Page
Do Not Fill in The Price Section when Reporting Sales	The Application Will Give an Error for Not Fill in The Price Section	The Application Give an Error for Not Fill in The Price Section
The Employees Do Not Report Their Activities	The Application Will Give a Notification for Not Reporting Activities	The Application Give a Notification for Not Reporting Activities
Do Not Choose Where the Job	The Application Will Give an	The Application Give an Error

Assign	Error, and The Application Will Not Process for The Next Page	Message, and The Application does Not Process to The Next Page.
The Leader Do Not Accept Employees Daily Report	The Application Will Give a Notification and a Message	The Application Give a Notification and a Message

After the Author has completed black box testing for the Application and the test outcomes, match those expected based on the scenarios, users will use the Application, and the Author will determine whether the Application meets user requirements. The Author distributes user requirements questionnaires and calculates the result using a Likert scale. There are twenty-five respondents from the Planet Surf store.

Table 3. Questionnaire

No.	Questions	Total Percentage of Respondents			
		Excellent	Good	Poorly	Inappropriate
1	How is your opinion about interface design from the Application	17	8	0	0
2	Can the Application facilitate the completion of daily reports by employee	18	7	0	0
3	In the Application, there is a report of store income. Can reporting of store income be used as a reference when documenting store profit?	15	9	1	0
4	If necessary, store managers can assign additional duties to store employees. Can this enhance store employees' performance?	13	7	5	0
5	Can the Application's recommendations for promotions and positions aid store managers make decisions?	10	8	7	0
6	Are the daily reports organized and retrievable based on the date they were generated?	15	10	0	0
7	Can the Application simplify the work of all store employees?	20	5	0	0
	Total	108	54	13	0

The questionnaire results will determine whether the system meets the user's needs. The result from the questionnaire can be calculated using the Interval formula.

$$I = 100 / \text{Total Score} * 100\% \quad (1)$$

The conclusions from the assessment using the questionnaire are 62% (excellent), 31% (Good), 7,4% (Poor), and 0% (Inappropriate).

The next step is to determine the system implementation outcome using the Likert formula based on the result from the questionnaire.

$$\text{Result} = \text{Total Score} / Y * 100 \quad (2)$$

The total score represents the product of multiplication in the above formula, while Y represents the highest score (4) by multiplying the Total number of respondents (25), so  $4 \times 25 = 100$ . The outcome of the Likert scale formula is displayed in Table 4.

Table 4. The Result from the Likert Scale Formula

No	Questions	Total Percentage of Respondents				Result
		Excellent	Good	Poorly	Inappropriate	
1	How is your opinion about interface design from the Application	$4 \times 17 = 68$	$3 \times 8 = 24$	$2 \times 0 = 0$	$1 \times 0 = 0$	$92 / 100$ $\times 100 = 92$
2	Can the Application facilitate the completion of daily reports by employee	$4 \times 18 = 72$	$3 \times 7 = 21$	$2 \times 0 = 0$	$1 \times 0 = 0$	$93 / 100$ $\times 100 = 93$
3	In the Application, there is a report of store income. Can reporting of store income be used as a reference when documenting store profit?	$4 \times 15 = 60$	$3 \times 9 = 27$	$2 \times 1 = 2$	$1 \times 0 = 0$	$89 / 100$ $\times 100 = 89$
4	If necessary, store managers can assign additional duties to store employees. Can this enhance store employees' performance?	$4 \times 13 = 52$	$3 \times 7 = 21$	$2 \times 5 = 10$	$1 \times 0 = 0$	$83 / 100$ $* 100 = 83$
5	Can the Application's recommendations for promotions and positions aid store managers make decisions?	$4 \times 10 = 40$	$3 \times 8 = 24$	$2 \times 7 = 14$	$1 \times 0 = 0$	$78 / 100$ $\times 100 = 78$
6	Are the daily reports organized and retrievable based on the date they were generated?	$4 \times 15 = 60$	$3 \times 10 = 30$	$2 \times 0 = 0$	$1 \times 0 = 0$	$90 / 100$ $\times 100 = 90$
7	Can the Application simplify the work of all store employees?	$4 \times 20 = 80$	$3 \times 5 = 15$	$2 \times 0 = 0$	$1 \times 0 = 0$	$95 / 100$ $\times 100 = 95$

Based on the percentages in Table 4 and the distribution of questionnaires, it can be concluded that the Daily Report Application is based on Android at PT. Planet Selancar Mandiri can assist both the employees and the store proprietors. With an evaluation score of 89%, this Application is deemed outstanding and can be implemented.

### 3.5. Maintenance

Maintenance is a measure to maintain the Application's optimal performance so as not to degrade the Application's performance quality. In this research, the Author will support the Application after being used for six months.

#### 4. CONCLUSION

Based on the research that has been done, the following conclusions can be reached: 62% of people love to use the Application, and it can facilitate employees. Also, an evaluation 89% states that the Application meets the users' needs. The leaders can monitor and supervise store clerks, and employees can report their activities and the progress of their jobs and see their performance.

These are the findings that have been drawn from the research. First added a video-based work demonstration to the Update Progress Task page. This is for evidence to prove how the employees work and finish their jobs. Second, adding an Attendance Feature to facilitate employees' attendance recording. For this time, they still record attendance using an attendance register. And last, implemented a chat functionality to facilitate inter-organizational communication among personnel situated in discrete locations.

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