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# **EXTENDED ABSTRACT BOOK**

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# ALIMS – Assets Loan and Inventory Management System with SMS Notification

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Management System is one of the most developed system domains in the Information System Domain. ECOLAB Bandar Sunway is one of the branch corporations in Malaysia that offers services of purification, cleaning, and hygiene of water. The management system in ECOLAB (an IT department) involves staff management, inventory management and asset loan management. ECOLAB is facing a problem with the manual application process for asset loans, which is time-consuming. Additionally, the IT staff is also facing problem with the tedious process of the current system to manage the asset one by one manually, and the existing system need a notification alert feature to remind regarding the return date of the asset. This project aims to develop ALIMS – Asset Loan and Inventory Management System with SMS Notifications, enabling the IT staff to manage the asset (laptop) smoothly. The methodology that has been used is the waterfall methodology. SMS Notifications had been integrated into the ALIMS. As for the result of this project, the system will be able to have an application form online, and the system can list outdated assets. Hence, the system will increase the efficiency of the IT staff as it can notify the staff regarding the expired loan date. ALIMS also provides beneficial features for employee and asset management via online system. For future enhancement of this project, notification reminders by using WhatsApp or Telegram applications could be integrated with the system.

*Keywords— System Management, Inventory System, SMS Notification*

## I. INTRODUCTION

ECOLAB Bandar Sunway, a branch in Malaysia, specializes in water treatment, purification, cleaning, and hygiene services. Notable clients include OldTown Kopitiam and IKEA, where ECOLAB provides disinfectant hand sanitizers for eating venues. The branch comprises 10 departments—Information Technology, Human Resources, Supply Chain, Food & Beverage, Pest Control, Finance, Institutional, Procurement, Admin, and Facilities—with a staff count ranging from 200 to 250.

The company offers five laptop models—Microsoft Surface 7, Microsoft Surface Pro 9, Microsoft Surface Pro 5, HP EliteBook, and Dell Inspiron 16—each with a minimum allocation of 70 and a maximum of 200. Staff members are eligible to loan one laptop per application, requiring a new submission for additional laptops.

Presently, asset loan applications, managed manually, necessitate approval from department managers. To address issues of late returns due to forgotten expiration dates, a project focuses on

developing a laptop-specific asset loan tracking and management system. The primary goal is to implement tracking features identifying the current user and send alerts if the loan date is nearing expiration.

It's crucial to acknowledge that laptops typically have a four-year lifespan, after which proper disposal and replacement are necessary.

## II. MATERIALS

The software used in this project is Eclipse IDE with java Programming language and data are kept in PostgreSQL database. The Process or flow of loan and inventory data are collected from the Staff of ECOLAB Bandar Sunway.

## III. METHODS

This project titled “ALIMS-Assets Loan and Inventory System with SMS Notification” employs System Development Life Cycle (SDLC) consisting of four phases: requirement gathering, analysis, design and implementation. Each phase encompasses specific activities that must be executed to progress to the subsequent step, ensuring the fulfillment of requirements.

### A. Design of the methodology

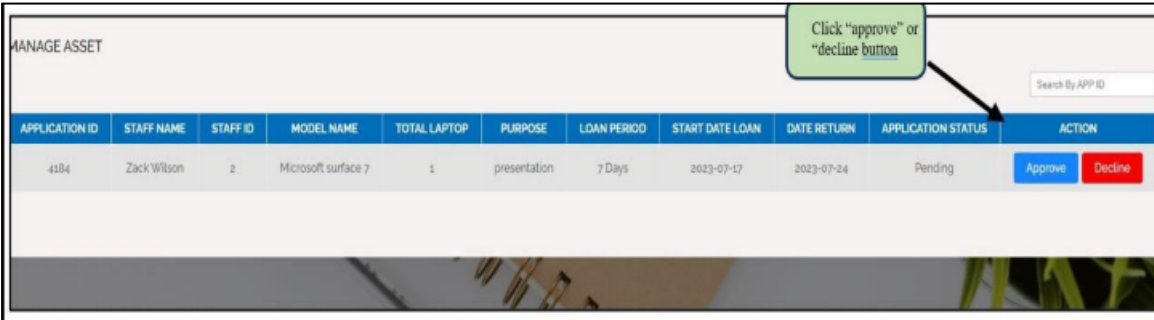
ALIMS IS using waterfall methodology model. It consist of four phases which is requirement gathering, analysis, design and implementation. To create a system that will reduce the issue the issue the ECOLAB Bandar Sunway facing , each process must be finished in order. Each step must be finished before moving on to the next phase.

### B. Methods

The initial phase, more focused on understanding the specific needs of Asset Loan and inventory system also the functionalities. The design phase outlined the overall system architecture, database schema in PostgreSQL and the itegration of Twillio API for SMS notifications. JAVA was chosen as the programming language for ALIMS due to its versatility and compatibility. Twillio API integration facilitated real-time SMS notification for asset loan status updates. This step involved configuring Twillio services within the system to send timely and relevant messages.

## IV. RESULTS AND FINDINGS

Approved Application Asset Loan: Figure 1.0 Shows a list application asset loans which can be viewed by staff manager. Staff manager can decide to give an action either ‘Approve’ or decline after going through the details of application. Once the Staff manager done, application status will be updated from Pending to Approved or declined.



APPLICATION ID	STAFF NAME	STAFF ID	MODEL NAME	TOTAL LAPTOP	PURPOSE	LOAN PERIOD	START DATE LOAN	DATE RETURN	APPLICATION STATUS	ACTION
4184	Zack Wilson	2	Microsoft surface 7	1	presentation	7 Days	2023-07-17	2023-07-24	Pending	Approve Decline

Figure 1.0 List Application Asset Loan

Notify Return Date: Based on Figure 2.0 displays the SMS Alert form and it SMS, which enables IT Staff to set up the date and time, phone number and message to be sent via SMS. Once the date comes, the staff who loan the asset will get hotification message as figure below.

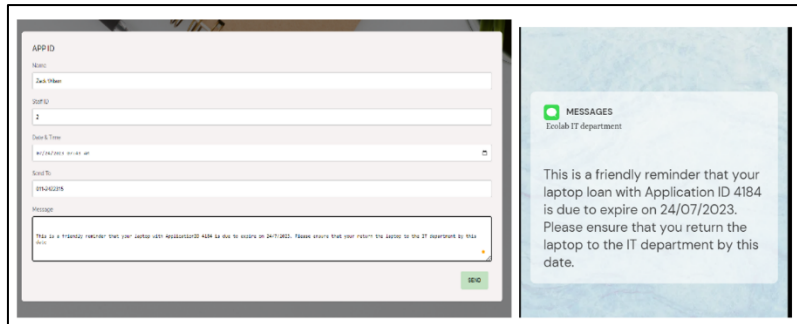


Figure 2.0 SMS Notification

List Outdated Asset: Figure 3.0 shows Manage Inventory Page where IT Staff can access the List of Inventory stored in the database. Additionally, IT Staff have the capability to delete inventory details if necessary. The total Asset in inventory will decrease once the application of staff has been approved.

INVENTORY ID	MODEL NAME	MANUFACTURER	TOTAL ASSETS	ACTION
427953	Microsoft surface Pro 3	Microsoft	90	Delete
70853	Dell Inspiron	Dell	75	Delete
20763	Microsoft surface 7	Microsoft	95	Delete
20268	HP EliteBook	HP	95	Delete

INVENTORY ID	MODEL NAME	MANUFACTURER	TOTAL ASSETS	ACTION
427953	Microsoft surface Pro 3	Microsoft	90	Delete
20763	Microsoft surface 7	Microsoft	95	Delete
20268	HP EliteBook	HP	95	Delete
70853	Dell Inspiron	Dell	71	Delete

Figure 3.0 Manage Inventory

## V. CONCLUSIONS

Based on the studies and research conducted in this project, overall this project is about management of Asset Loan and Inventory with the integration of SMS notification to give notify the staff. The main goal of this project to make IT Staff work efficiently is achieved. Has it have been accomplished all three objectives, the project has been concluded successfully. The objectives that have been achieved are to gather data and analyse the requirements from IT department of ECOLAB Bandar Sunway which are related to ALIMS, to design Assets Loan and Inventory Management with SMS Notification and to develop a syste, of ALIMS- Asset Loan and Inventory Management with SMS Notification.

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