

MELAKA
INTERNATIONAL
INTELLECTUAL EXPOSITION

MIIEX'24

12 JUNE '24

Dewan Taming Sari,
Universiti Teknologi MARA Caw. Melaka,
Kampus Alor Gajah, Melaka

*"Empowerment of Special
Needs through Invention
& Innovation"*

**EXTENDED
ABSTRACT**

MiiEX'2024

MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024

**“EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND
INNOVATION”**

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UiTM Cawangan Melaka

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78000 Alor Gajah

Melaka Bandaraya Bersejarah

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MiiEX'2024

MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024

**“EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND
INNOVATION”**

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PUBLISHED BY:

UiTM Cawangan Melaka

KM26 Jalan Lendu,

78000 Alor Gajah

Melaka Bandaraya Bersejarah

Tel: +606-5582094 / 2190 / 2113

eISBN: 978-967-2846-81-9

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FOREWORD BY THE RECTOR OF UiTM CAWANGAN MELAKA



Professor Ts. Dr. Mohd Rasdi bin Zaidi

Rector, Universiti Teknologi MARA (UiTM)

Cawangan Melaka

Welcome to the Melaka International Intellectual Exposition 2024 (MIIEX '24). It is an honour for me, on behalf of UiTM Cawangan Melaka, to thank all of you for joining MIIEX '24. We are proud to inform you that this is the 13th consecutive year that UiTM Cawangan Melaka is organizing this exposition. Since 2009, UiTM Cawangan Melaka has successfully hosted this innovation exposition. Not only have we succeeded in organizing the exposition, but we have also successfully embarked on commercialized products.

2024 is a special year where MIIEX 2024 emphasizes the development of special needs. As we know, special needs indicate a limitation in a person's ability to engage in and benefit from various aspects, such as daily activities and education. Hence, with the theme "Empowering Special Needs Through Invention and Innovation," it is a platform for industries, professionals, academicians, students, and communities to share their innovative ideas and products to increase accessibility for those with special needs.

The successful implementation of MIIEX '24 is our joint success. This event was supported by the Melaka state government through YB Datuk Fairul Nizam bin Roslan, the EXCO of Science, Technology, Innovation, and Digital Communication. I also want to express my

gratitude to Universitas Negeri Padang, Indonesia, Universitas Muhammadiyah, Makassar, Indonesia, the International Association of Economic and Businesses (IAEB), Universiti Sains Islam Malaysia, Ibnu Umami Maktum Research Center (UMMI), USIM, and The Southeast Asia Minister of Education Organization Regional Centre for Special Educational Needs (SEAMEO SEN) as our co-collaborators for MIIEX 2024.

The collaboration from various parties in MIIEX '24 is a platform that will improve cooperation and interweaving among industries, professionals, academicians, students, and communities in shaping their potential in developing innovation products. This exposition also serves as a platform to cultivate and uphold the nation's innovation culture by presenting new ideas and research by young people, especially from academia and universities. Indirectly, MIIEX '24 will encourage all inventors towards empowering Science, Technology, Engineering, and Mathematics (STEM), especially in primary and secondary schools.

The new digital landscape also inspires more innovation and new ideas that contribute to various activities, such as business and industries. As a university that encourages "Research and Innovation," we aim to foster more innovative products that benefit scholars, industries, and communities, addressing issues to improve our present and future life.

This exposition would never happen without dedication, teamwork, and commitment. A round of applause should be given to the committee teams, who are the backbone of this exposition. Their hard work, effort, and time made this exposition possible.

Finally, I would like to conclude this brief remark by thanking all the participants and stakeholders for joining the exposition. We hope that this collaboration never ends here.

Thank you.

FOREWORD BY THE DEPUTY RECTOR (RESEARCH & INDUSTRIAL LINKAGES)



Associate Professor. Dr. Nur Hayati binti Abd Rahman

Deputy Rector (Research & Industrial Linkages), Universiti Teknologi MARA (UiTM) Cawangan Melaka

With much passion and privilege, let me warmly welcome all of you to the Melaka International Innovation Exhibition (MIIEEX), UiTM Cawangan Melaka's flagship event. I firmly believe that events such as these demonstrate the gradual evolution of this platform in terms of its significance and its governing principles within the sphere of learning and the broader scholarly society.

The theme for this year, "Empowering Special Needs Through Invention and Innovation," strongly connects to our mission of using research and technology to make a positive impact on the world we live in. Besides enforcing the message of diversity, this theme also reaffirms our focus on creating products to improve the lives of people with disabilities (PWDs). Such innovations are vital as only through focused constructive changes can society become more sensitive to the needs of all members.

MIIEEX allows researchers, students, and industry professionals to come together, share their innovative research, and develop viable research partnerships. It has been great to see the enthusiasm of the participants and the efforts they put into their projects, which can offer various social and economic benefits. This is why one can state that MIIEEX is a great

opportunity for creating connections between the academic environment and industry, facilitating the implementation of innovative and promising projects.

Finally, I would like to express my sincere appreciation to all the members and supporters of the organizing committee, all the participants, sponsors, and everyone involved in preparing this event. I want to express my gratitude for your commitment and involvement, as the success of MIIEX and the development of an active culture of innovation in our university and beyond is partly owed to your support.

Thank you

FOREWORD BY THE PROJECT DIRECTOR



Dr Zulkefli bin Muhamad Hanapiyah

Senior Lecturer

Assalamualaikum and Warmest Greetings,

It gives me a great pleasure, on behalf of the organizing committee, to welcome all participants and speakers to the Melaka International Intellectual Exposition 2024 (MIIEX '24) with the theme "Empowering Special Needs Through Invention and Innovation." We are honoured and pleased to welcome all participants to this biennial event.

MIIEX '24 is a platform that gathers experts from local and international industries, academia, scientists, researchers, and the community to contribute to the advancement of scientific and technological knowledge. This knowledge helps develop disruptive innovation products that improve daily activities for businesses and the community, especially those with special needs.

MIIEX '24 provides an atmosphere for inventors of all levels to gain new exposure and collaborate. Indirectly, this promotes a collaborative and innovative culture that focuses on cutting-edge technologies and new standards in technology and creativity.

MIIEX '24 is anticipated to serve as an arena for participants to acquire and disseminate revolutionary information on ideas and innovation. It is intended that the competition will expose the contestants' minds to the latest technologies and designs, aligning with the government's goal of encouraging innovation in Malaysia.

Finally, I want to compliment my fellow committee members on their amazing efforts, which were vital to the event's success. In addition, I want to thank our co-organizers, event sponsors, and participants. Optimistically, we hope that all new knowledge discovered, invented, or innovated will lead us toward future sustainability.

Thank you.

**FOREWORD BY MELAKA STATE EXCO OF SCIENCE, TECHNOLOGY,
INNOVATION AND DIGITAL COMMUNICATIONS**



YB Datuk Fairul Nizam bin Roslan

Melaka State Exco of Science, Technology, Innovation and Digital Communications

Welcome to the Melaka International Intellectual Exposition 2024 (MIIEX '24). It is an honor for me, on behalf of UiTM Cawangan Melaka, to thank all of you for joining MIIEX '24. We are proud to inform you that this is the 13th consecutive year that UiTM Cawangan Melaka is organizing this exposition. Since 2009, UiTM Cawangan Melaka has successfully hosted this innovation exposition. Not only have we succeeded in organizing the exposition, but we have also successfully embarked on commercialized products.

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Finally, I would like to conclude this brief remark by thanking all the participants and stakeholders for joining the exposition. We hope that this collaboration never ends here.

Thank you.

MIIEX'24 ORGANISING COMMITTEE

COMMITTEE	NAME
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	BUSHRA ABDUL HALIM
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	FAIQAH HAFIDZAH BINTI HALIM
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	AFZAN SAHILLA BINTI MOHD AMIR HAMZAH
	MUHAMMAD FURQAN BIN AZHAR
	KHAIRUL AZHAR BIN LOCHMAN

ABOUT MIIEX'24

MIIEX'24 is an innovation competition annually organised by UiTM Melaka with the intention to bring together ideas and inspiration that could fit in for commercialization needs.

This event creates a platform for researchers to establish networking, partnership and opportunities to collaborate with industries.

OBJECTIVES

1. Encourage and instil passion towards inventing and innovating among UiTM Cawangan Melaka staff, students and academicians of local and international higher education institutions;
2. Highlight distinguished talents of skilful inventors and exhibit intellectual products, inventions and innovations among local and private tertiary institutions, government and private agencies, including international participants;
3. Become an effective Business Matching platform for participating research products, matching industries and partnering government agencies;
4. Recognise, inspire and promote invention and innovation products to be patented and commercialized;
5. Increase passion towards inventing and innovating through research and boost interests of government and non-government agencies to obtain consultancy services from a line up experts of higher education institutions and UiTM Cawangan Melaka.

THEME

'EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND INNOVATION'

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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

1. 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.

2. MATERIAL

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.

3. 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.

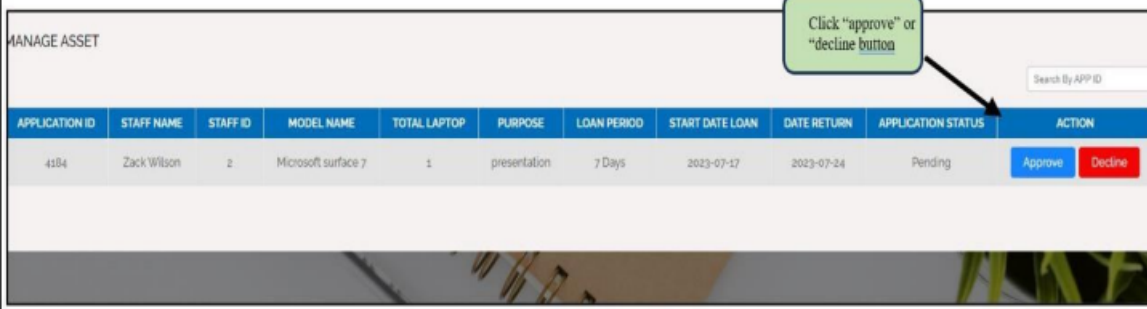
4. DESIGN OF THE METHODOLOGY

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 ECOLAB Bandar Sunway facing , each process must be finished in order. Each step must be finished before moving on to the next phase.

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.

5. 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.

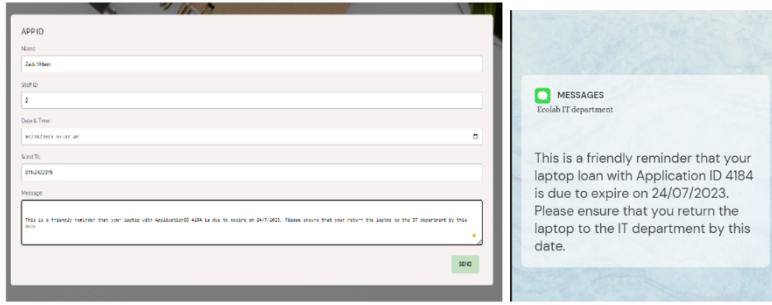


Figure 2.0 SMS Notification

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
427554	Microsoft surface Pro 3	Microsoft	80	Delete
14853	Dell Inspiron5	Dell	91	Delete
307554	Microsoft surface 7	Microsoft	88	Delete
212558	HP EliteBook	HP	95	Delete

INVENTORY ID	MODEL NAME	MANUFACTURER	TOTAL ASSETS	ACTION
427554	Microsoft surface Pro 3	Microsoft	80	Delete
307554	Microsoft surface 7	Microsoft	88	Delete
212558	HP EliteBook	HP	95	Delete
14853	Dell Inspiron5	Dell	91	Delete

Figure 3.0 Manage Inventory

6. 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.

ACKNOWLEDGMENT

All praise and gratitude are due to Allah, the Almighty, for His boundless blessings, enabling me to successfully conclude this project within the designated timeframe. I extend special acknowledgment and sincere appreciation to my supervisor, Dr. Nur Suhailayani binti Suhaimi, whose guidance and advice were instrumental in making this endeavor possible. I am grateful for her consistent direction and assistance whenever I faced challenges. I also express my thanks to ECOLAB Bandar Sunway for sharing valuable information and workflow procedures.

REFERENCES

- [1] Alrjoub, A. M. S., & Ahmad, M. A. (2017). Inventory management, cost of capital and firm performance: evidence from manufacturing firms in Jordan. *Investment Management and Financial Innovations*, 14(3), 4–14. [https://doi.org/10.21511/imfi.14\(3\).2017.01](https://doi.org/10.21511/imfi.14(3).2017.01)
- [2] Bhana, B., & Flowerday, S. V. (2021). Usability of the login authentication process: passphrases and passwords. *Information & Computer Security*, 30(2), 280– 305. <https://doi.org/10.1108/ics-07-2021-0093>
- [3] Carneiro, & Silva. (2018). Scrum Agile Project Management Methodology Application for Workflow Management: A Case Study. 2018 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM). <https://doi.org/10.1109/ieem.2018.8607356>
- [4] Ding, W. (2021). Analysis and Design of College Student Award Management System. 2021 2nd International Conference on Computer Science and Management Technology (ICCSMT). <https://doi.org/10.1109/iccsmt54525.2021.00027>
- [5] Lappanitchayakul, K. (2018). Development of Email and SMS Based Notification System to Detect Abnormal Network Conditions: A Case Study of Faculty of Business Administration, Rajamangala University of Technology Phra Nakhon, Thailand. *IEEE Xplore*, 3, 98–105. <https://doi.org/10.1109/ICIIBMS.2018.8549920>
- [6] Muftinisa, A., & Ginanjar, R. (2017). Development and implementation of fixed asset management system. 2017 Second International Conference on Informatics and Computing (ICIC). <https://doi.org/10.1109/iac.2017.8280591>