

# Ohmygadget Computer IT Service and Maintenance System

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## Abstract

In today's digital world, where technology is deeply integrated into every facet of life, a reliable computer IT service system is no longer a luxury, but a necessity. This study researches the development of a web-based system using PHP language and MySQL. The system empowers users to submit service requests, track service progress in real-time, and access updates readily. Moreover, automated background tasks, encompassing report generation and client notifications, enhance workflow efficiency. Employing the agile methodology, the system undergoes continuous improvement through iterative cycles, incorporating valuable user feedback to refine functionality and adapt to evolving demands. The research findings reveal significant improvements in service efficiency, enhanced user transparency, and increased user satisfaction. Future research aims to explore the integration of advanced features, such as remote diagnostics and preventative maintenance, further optimizing IT service delivery and solidifying the system's position as a valuable tool for IT teams to ensure seamless and efficient service. A computer IT service system acts as a safety net, ensuring the smooth operation and security of essential technology. Therefore, investing in a robust computer IT service system is an investment in your present and future success. It protects valuable data, ensures optimal performance, and allows technology to its full potential, ultimately contributing to a more productive and secure digital environment.

## 1. Introduction

IT services and maintenance system has remained crucial in business operation more so due to the dynamics of information technology in the market this paper seeks to establish a comprehensive and web-based computer IT services and maintenance framework. The goal of improving the data management and service processes in the field of information technology and database management.

The comprehensive computer IT services and repair which is focus on tracking and sales system. This system was planning to develop the system successfully at the end of the project. The client can experience and improve the level of service through a user- friendly of interface that can simplify the progress of monitoring repair, request of service and access the service the history. It also ensures the information remains accurate and dependable.

## 2. Literature Review

This section explains the tracking service system, web-based system, advantages of web-based system, study of existing related system, comparison with the existing system and summary.

### 2.1 Tracking service system

Tracking service computer systems Tracking service computer systems are rapidly permeating diverse industries, revolutionizing logistics and transportation, healthcare, retail, and beyond [1]. These systems offer real-time data on asset location and status, propelling enhanced efficiency, optimized operations, and elevated customer satisfaction. This case study explores the implementation of such a system, highlighting its functionalities, benefits, and potential challenges.

### 2.2 Web-based system

Web-based systems have revolutionized the way we interact with software, offering a portable and accessible alternative to traditional desktop applications [2]. These systems operate entirely within web browsers, eliminating the need for installation and enabling seamless access across any device with an internet connection. This portability represents a major advantage, simplifying deployment and maintenance for both developers and users by removing the need for multiple versions for different operating systems.

### 2.3 Study of existing related system

Three existing were carried out based systems have been examined to obtain more useful information for the proposed system development. The systems studied were Kanopi-ICT Sdn. Bhd, Liger Zero Comp Service Centre and OK Computer Solution Shah Alam.

#### 2.3.1 Kanopi-ICT Sdn.Bhd

Kanopi-ICT Sdn. Bhd fully uses a web-based system to keep any data information of services which is the system has a function of registration and login module, tracking progress module, report module and notification module. Furthermore, product and service module the organization did not applied any product to sell through online system [4]. The organization uses the system to keep the database with the scheduling within 10 am with organizations manage the database in backup software. The tracking progress can view from client, which is highlight of successful, receive and in progress.

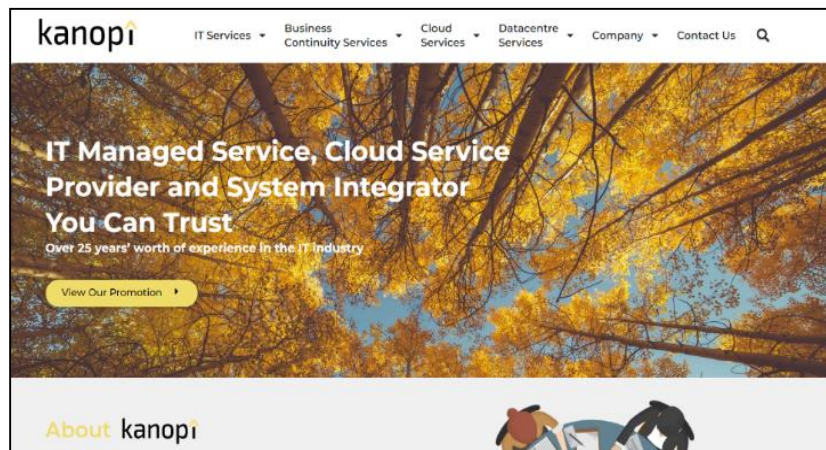


Fig.1 Kanopi-ICT Sdn. Bhd

#### 2.3.2 Liger Zero Comp Service Centre

Liger Zero Comp Service Centre designed computer systems to specific functionalities that are essential for the efficient operation of service center. This system plays a pivotal role in delivering exceptional service. The organization successfully implemented a Client Services system that empowers our team to interact with customers, ensuring the requests and inquiries are addressed promptly and professionally. Moreover, the system was a comprehensive reporting feature, allowing critical insights and data analysis that aids in improving the database system.



Fig.2 Liger Zero Comp Service Centre System

### 2.3.3 OK Computer Solution Shah Alam

Ok Computer Solution in Shah Alam has a several key features and systems that are integral into functionality. The organization has implemented a robust Client Service System, which allows users to interact with customers and manage their service requests. Additionally, the organization has integrated a notification system to ensure timely updates and alert to clients which is through by WhatsApp and Email.



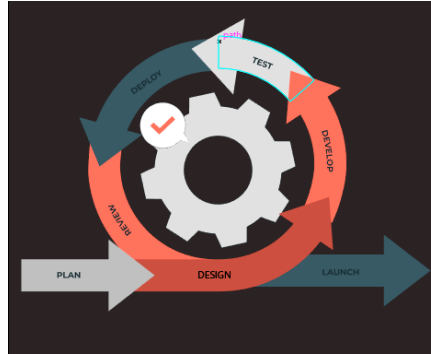
Fig.3 OK Computer Solution Shah Alam System

Table 1: Comparison between the existing system with the proposed system

Phase	Kanopi-ICT Sdn.Bhd	Liger Zero Comp Service Centre	OK Computer Solution Shah Alam	Proposed System
Registration and Login	Yes	No	No	Yes
Client Services	Yes	Yes	Yes	Yes
Product and Service	No	No	No	No
Notification	Yes (Email)	Yes	Yes	Yes (Email, SMS)
Repair Track	Yes	No	No	Yes
Report	Yes	Yes	Yes	Yes

### 3 Methodology

The methodology assists in presenting an outline and simple sketch of the entire research-related work. The development implements the Agile approach as the chosen methodology to ensure the analysis before development commences. The goal of system analysis is to develop a comprehensive understanding of the system its better for decisions can be made about design, implementation, and maintenance [5].



**Fig. 4** Agile Development Model

#### 3.1 Concept Phase

The concept phase focused on defining the overall scope, goals, and feasibility of the system. A preliminary analysis was conducted to identify the needs of IT service users and the key issues with existing service management. Risk assessments and resource evaluations were also performed to ensure the project's viability.

#### 3.2 Inception or Requirement Identification Phase

In this phase, project requirements were gathered through discussions with stakeholders and observation of service center operations. Detailed documentation was created, including a stakeholder register, user stories, and system specifications. Diagrams such as the Data Flow Diagram (DFD), Entity Relationship Diagram (ERD), and flowcharts were developed to visualize system structure and interactions.

#### 3.3 Iteration or Development Phase

System development was carried out in iterative sprints. The development team, including front-end and back-end developers, used PHP and MySQL for coding. The team developed core modules such as the registration and login, service tracking, and notification systems. Each sprint delivered incremental improvements and underwent internal testing.

#### 3.4 Release Phase

In this phase, the system was tested and prepared for deployment. User Acceptance Testing (UAT) was conducted with real users to evaluate interface usability and system functionality. Feedback from users guided final refinements before system release. The system was then deployed in a controlled environment for real-world usage.

#### 3.5 Maintenance Phase

Post deployment from the system was monitored closely for performance and issues. Feedback from users was continuously collected through the system interface and communication channels. The development team implemented updates and fixes based on reported problems and enhancement requests to improve user satisfaction.

#### 3.6 Retirement Phase

Although the system is still active, a retirement strategy has been outlined for the future transition. When the system becomes outdated or is replaced, users will be notified, and support will be discontinued following a structured handover process to the new platform.

**Table 2: Functional requirements**

Phase	Task	Output
Concept	System requirement analysis	<ul style="list-style-type: none"> <li>• User requirement</li> <li>• Software requirement</li> </ul>
Inception or Requirement Identification	Align on system design that features and functionalities.	<ul style="list-style-type: none"> <li>• System requirements</li> <li>• Data Flow Diagram</li> <li>• Entity Relationship Diagram</li> <li>• Flowchart</li> </ul>
Iteration or Development	System development that identified functionality and implementation	<ul style="list-style-type: none"> <li>• System architecture</li> <li>• Schema and data dictionaries</li> <li>• User Interface</li> </ul>
Release	Monitoring system performance and user feedback during the initial deployment phase.	<ul style="list-style-type: none"> <li>• User Feedback</li> <li>• Testing Result</li> </ul>
Maintenance	Fix and identify the errors during testing and complete documentation system.	<ul style="list-style-type: none"> <li>• System documentation</li> <li>• System optimization</li> </ul>
Retirement	Hand over project to client.	<ul style="list-style-type: none"> <li>• Update version</li> </ul>

#### 4 Analysis and Design

System analysis and design in this system using the structured approach of development. There are numerous structural diagrams such as flowcharts, context diagram, data flow diagram and entity-relationship diagram [ERD] with user inter design.

##### 4.1 Functional and Non-functional Requirements

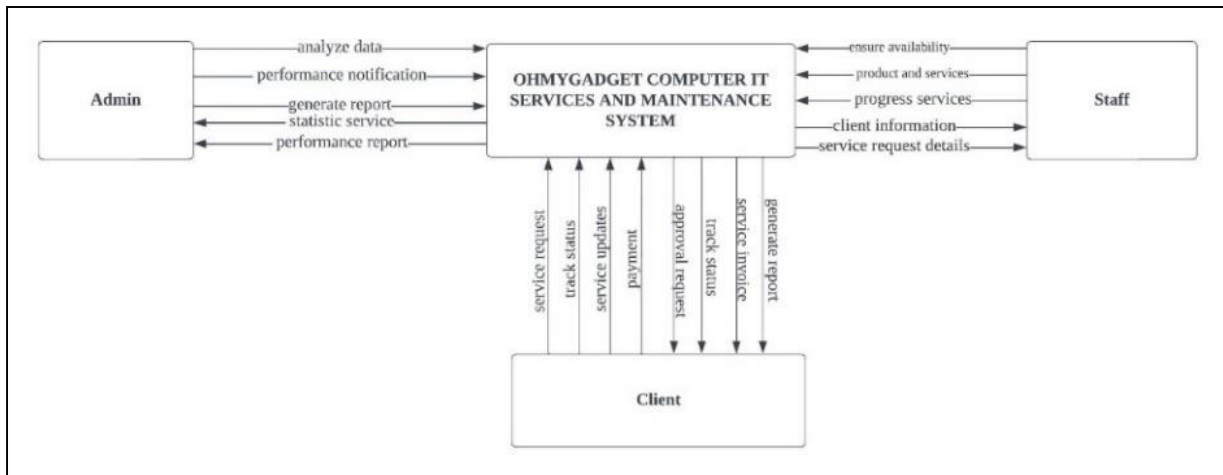
Requirement analysis phase developing effective system by comprehensively understanding and system functionalities. System requirements analysis outlines two primary categories of requirements which are functional requirements and non-functional requirements. Functional requirements typically outline the system’s expected behavior in various scenarios and define its functionalities and limitations [6].

**Table 3: Functional requirements**

Modules	Functionality
Registration and Login Module	<ul style="list-style-type: none"> <li>• Enable existing users to authenticate using registered credentials.</li> <li>• Direct valid users to the dashboard interface.</li> <li>• Login process that can ensure the secure access.</li> </ul>
Client Service Module	<ul style="list-style-type: none"> <li>• Allow to submit request services.</li> <li>• Allow to view service statuses and make payment.</li> </ul>
Notification Module	<ul style="list-style-type: none"> <li>• Allow the notification through Email or SMS with performance alert.</li> </ul>
Repair Track Module	<ul style="list-style-type: none"> <li>• Allow client to view the progress of their equipment repair and customer satisfaction.</li> </ul>
Report Module	<ul style="list-style-type: none"> <li>• Analyze data client, equipment, and services.</li> <li>• Generate invoices and report of service clients.</li> <li>• Monitoring system performance.</li> </ul>

## 4.2 Context Diagram

The context diagram provides a high-level overview of the system and its interactions with the external world. It does not show the internal details of the system, such as how the service requests are processed or how the system updates the service status. These details are shown in lower-level diagrams.



**Fig.5** Context Diagram

## 4.3 Data Flow Diagram

A Data Flow Diagram (DFD) Level 0 is the highest-level representation of a system in a DFD hierarchy. It provides a broad overview of the system's boundaries, primary process, and the external entities that interact with it and level more detailed representation of a system compared to a DFD Level 0. It breaks down the primary process from the DFD Level 0 into subprocesses, providing a more regular understanding of the system's internal workings.

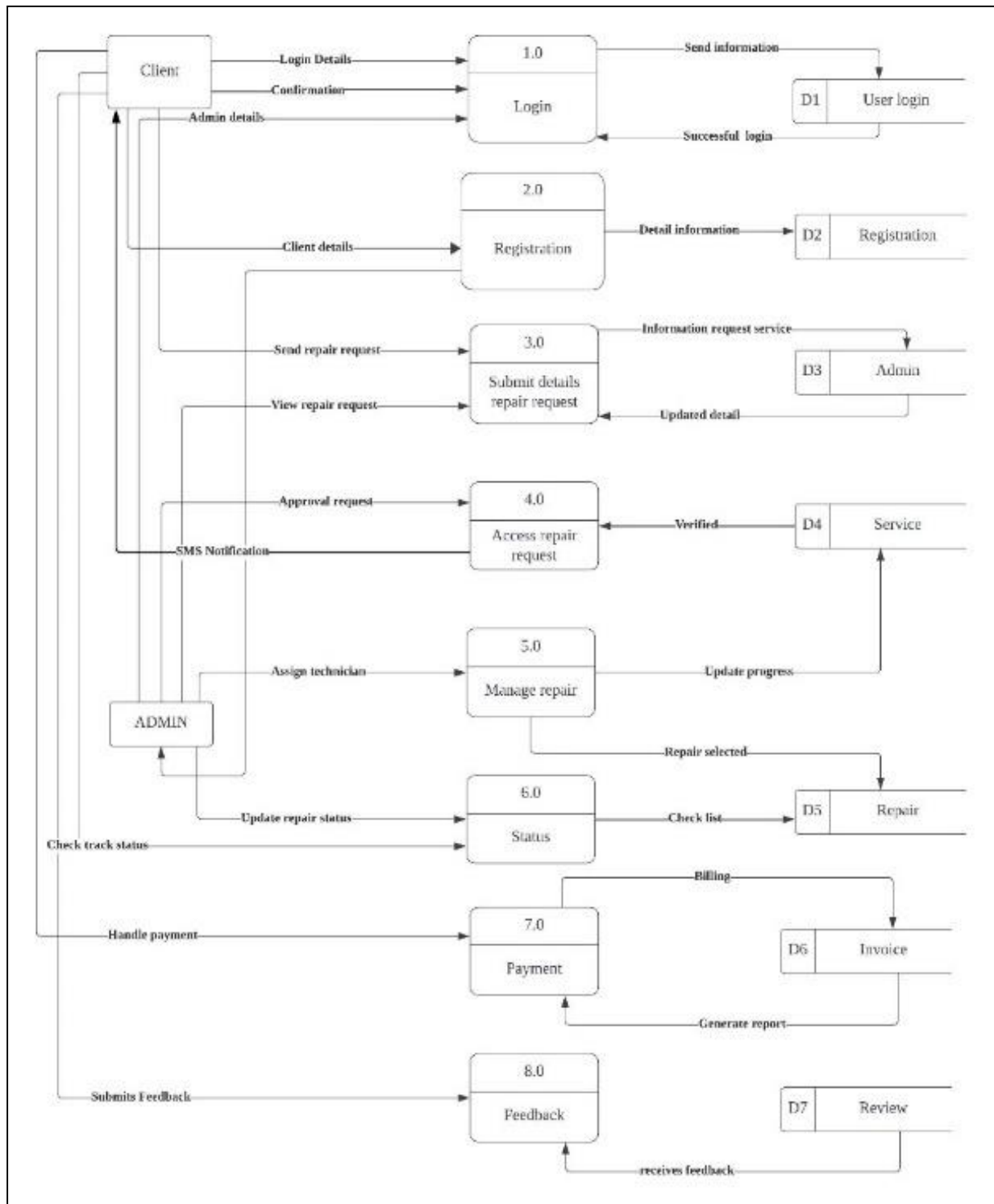


Fig.6 Data Flow Diagram Level 0 (DFD 0)

#### 4.4 Entity Relationship Diagram

An ERD, or Entity Relationship Diagram is a type of graphical representation that describes the structure of a database [7]. It shows the entities (tables), attributes (columns), and relationships between the entities [8]. ERDs are used to plan and design databases, understand data relationships, and communicate database designs to stakeholders [9].

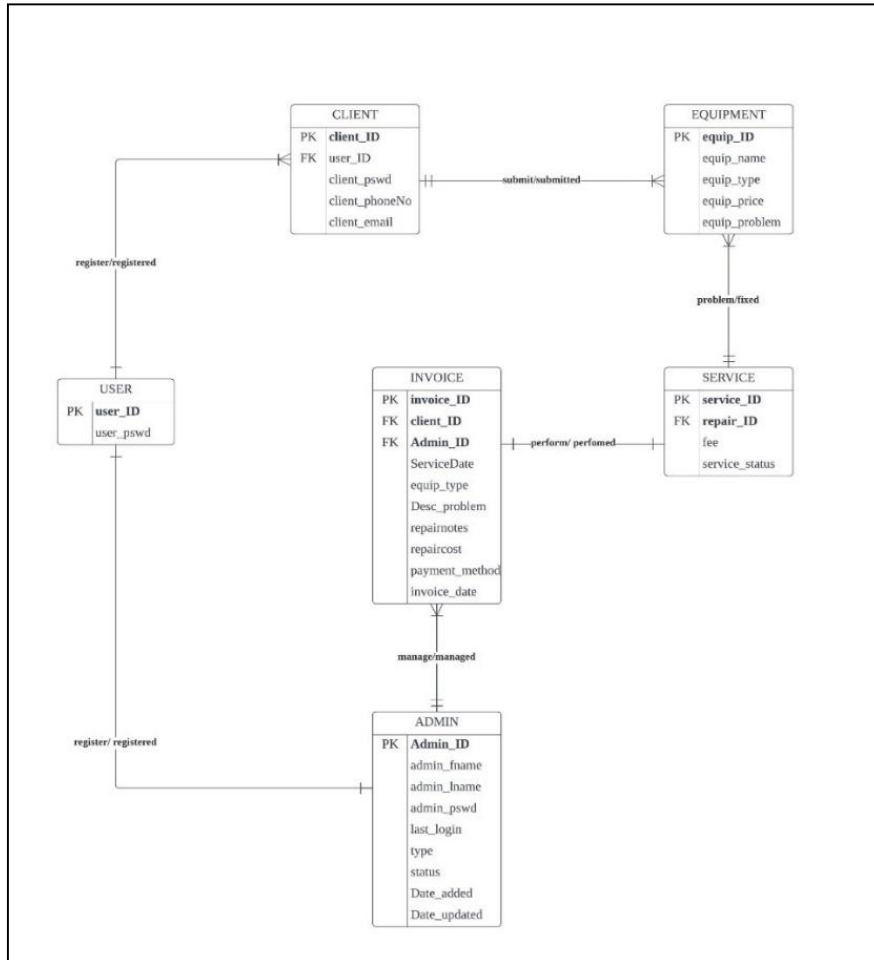
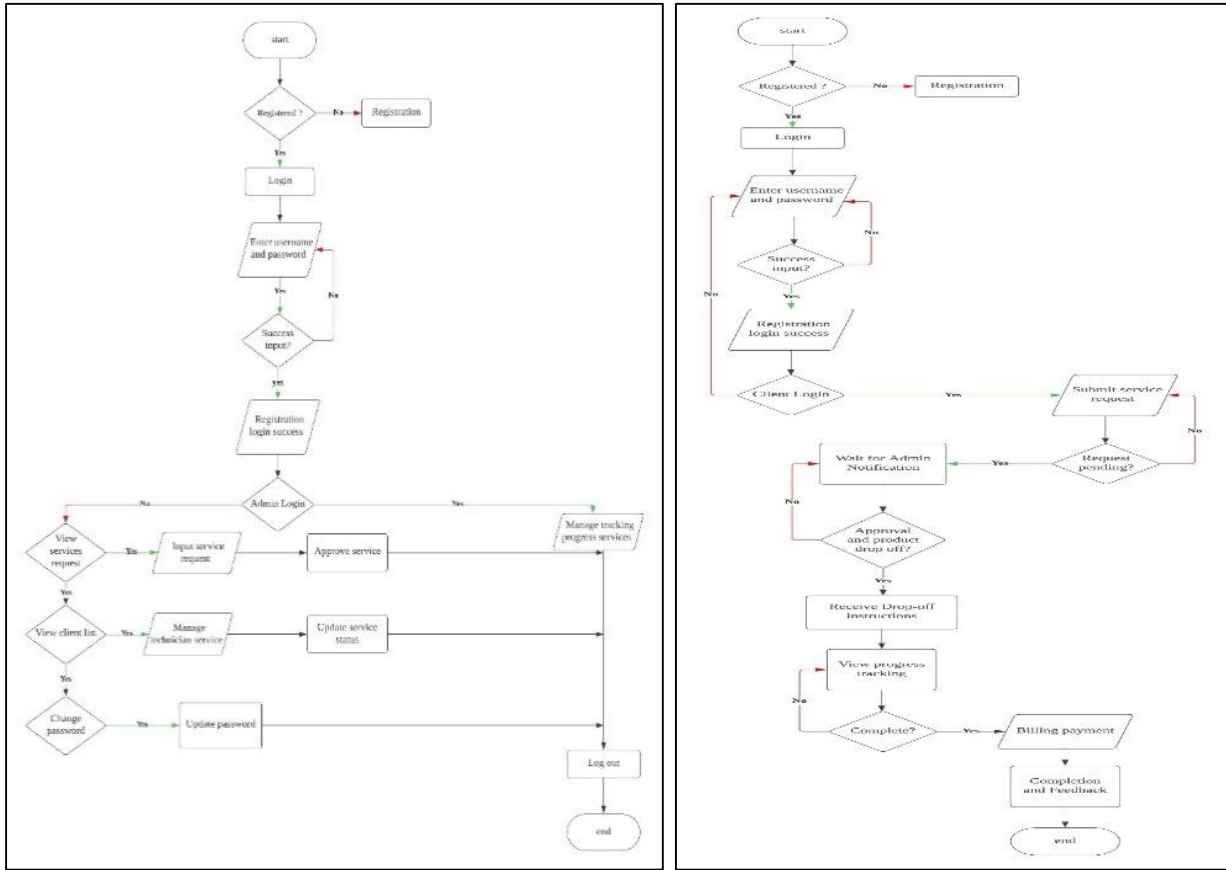


Fig.7 Entity Relationship Diagram

#### 4.5 Flowchart

A flowchart is a visual representation of a process or algorithm. It uses a series of interconnected boxes and arrows to illustrate the steps involved in the process. Flowcharts are a powerful tool for communicating complex processes to both technical and non-technical audiences.



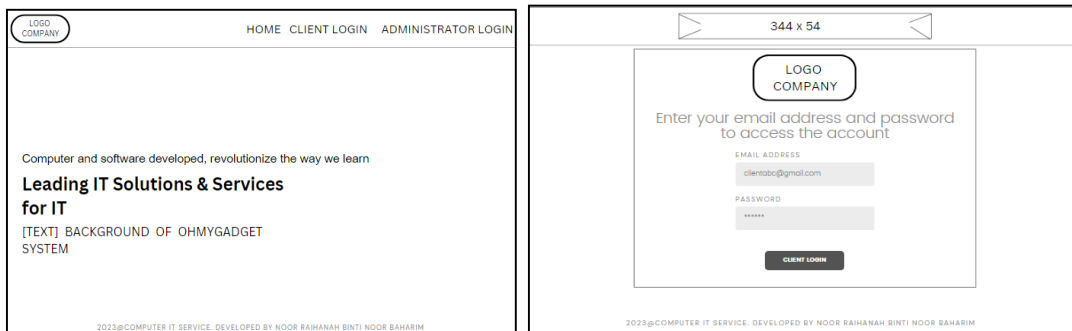
(a)

(b)

Fig.8 Flowchart of Ohmygadget Computer IT Service system (a) Admin Flowchart (b) Client Flowchart

### 4.6 Interface Design

Interface design refers to the process of creating user interfaces for software applications, websites, or any system that users interact with. It involves designing layouts, visual elements, navigational components, and overall user experience to ensure usability and efficiency.



(a)

(b)

Fig.9 Computer IT Service Systems (a) Homepage (b) Admin Login Page

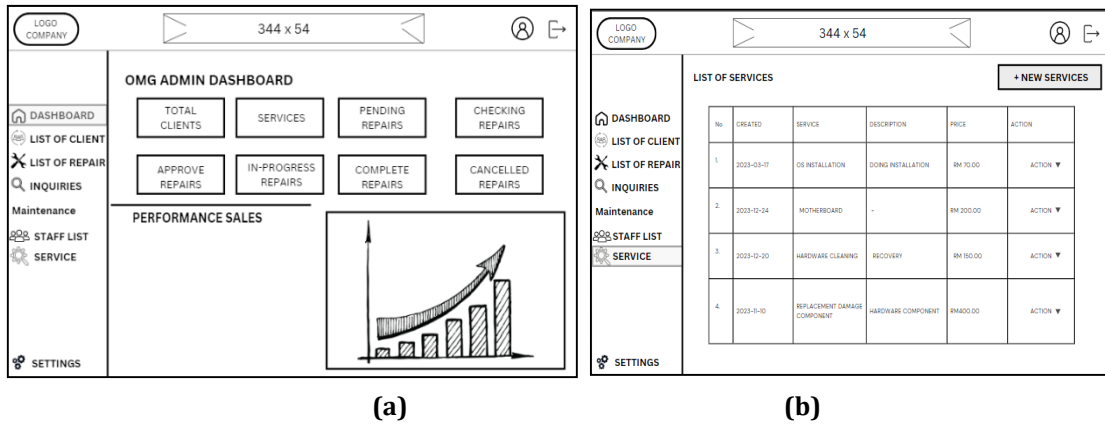


Fig.10 Computer IT Service Systems (a) Admin Dashboard (b) Service List Page

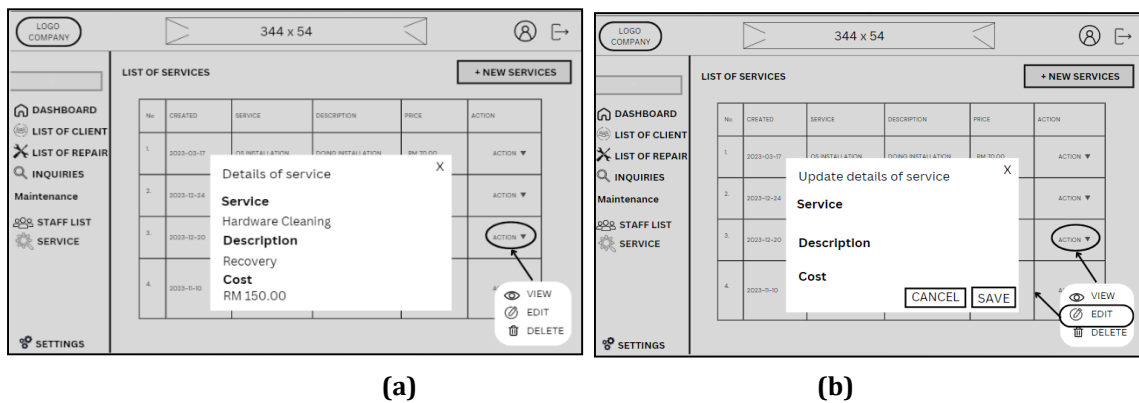


Fig. 11 Computer IT Service Systems (a) View Service List (b) Update Service List

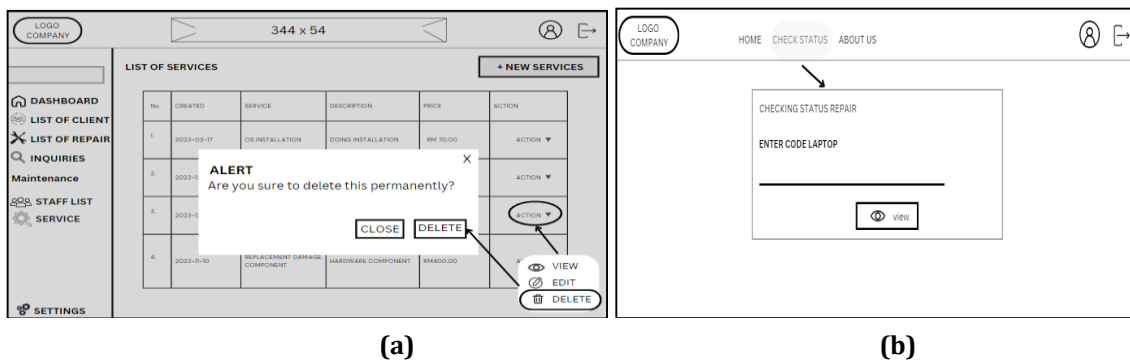


Fig. 12 Computer IT Service Systems (a) Delete Service List (b) Check Status Repair

## 5 Result and Discussion

The actual system implemented here is composed of six functionalities to allow various kinds and types of users to accomplish the task. Therefore, it is performed an User Acceptance Testing (UAT) for collect feed-back and satisfaction of the real target users and next, each module and its functionalities is detailed discussed.

### 5.1 User Acceptance Testing

User Acceptance Testing (UAT) is important in the overall framework definite function of offering a system within which the process of service occurs, it thus has a very important function of factor procurement. Implementation entails aspects of the system whereby end users are trained on its usage, accompanied with confidence that the system meets or rather exceeds the established requirement and is easily deployable in end-user domains. To make sure that the system effectively embodies all functional and operational requirements needed by the end-users, there are fundamental questions and goals that should be posed and attained. Table 4 shows result of user interface design from user which is the features of result using the rating score.

**Table 4:** Result User Interface design from user

No	Feature	Rating					Total
		1	2	3	4	5	
1.	How the design implementation of the interface?	0	0	9	10	1	20
2.	Is it a system easy to navigate?	0	0	11	8	1	20
3.	How satisfied on current interface design?	0	0	11	8	1	20
4.	Are the design elements such as colors, fonts, and layout consistent?	0	0	10	9	3	20
5.	Facilitating easy understanding and interaction?	0	0	7	12	1	20

Table 4 shows result of user interface design from user which is the result was in level moderate.

**Table 5:** Result System Functionalities Admin

No	Feature	Rating					Total
		1	2	3	4	5	
1.	Login Function	0	0	2	2	0	4
2.	Add Service Repair Function	0	0	1	2	1	4
3.	Approval Service Function	0	0	2	1	1	4
4.	Status Service Function	0	0	3	1	0	4
5.	Update Status Function	0	0	3	0	1	4

Table 5 shows the result of admin on system functionalities which is the result be implemented in level moderate.

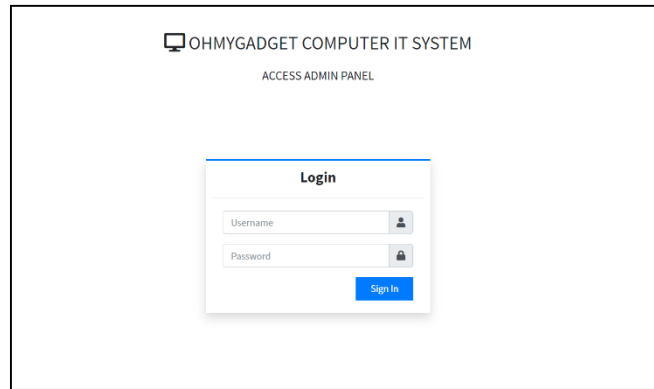
**Table 6:** Result System Functionalities of Organization

No	Feature	Rating					Total
		1	2	3	4	5	
1.	Login Function	0	0	2	2	0	4
2.	Add Service Repair Function	0	0	2	1	1	4
3.	Approval Service Function	0	0	1	2	1	4
4.	Status Service Function	0	0	3	1	0	4
5.	Company Profile Function	0	0	2	2	0	4

Table 6 shows the result of admin on system functionalities which is the result be implemented in level moderate which is mean the implementation was satisfaction.

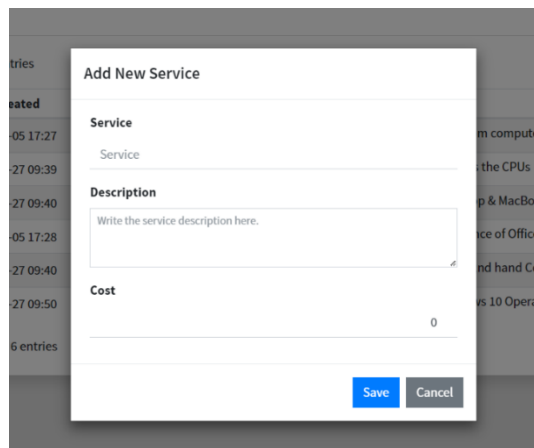
### 5.2 Modules of Functionalities

First of all, the first functional modules are login module which is admin and client can access the system if user insert the username and password that been authorized. The input of username and password in database management will be matched and approve in database table of registration. Figure 12 shows the login interface.

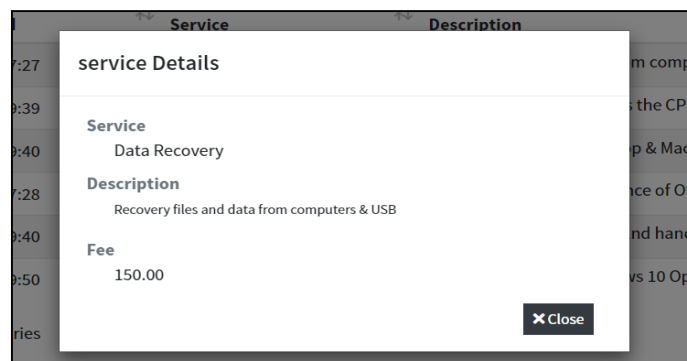


**Fig.13** Login Interface for Admin

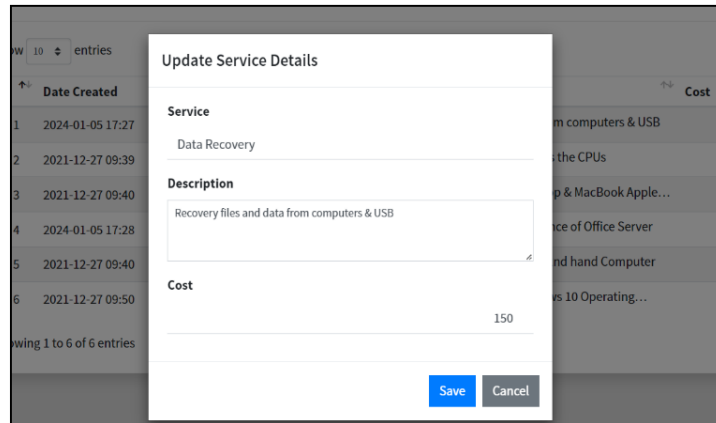
Next module of functionality is service module. In this interface of service module, the action function where admin managing the type of service that been available on the organization which is create, read, update and delete service (CRUD). Figure 13, 14, 15 and 16 shows the interface of interface module.



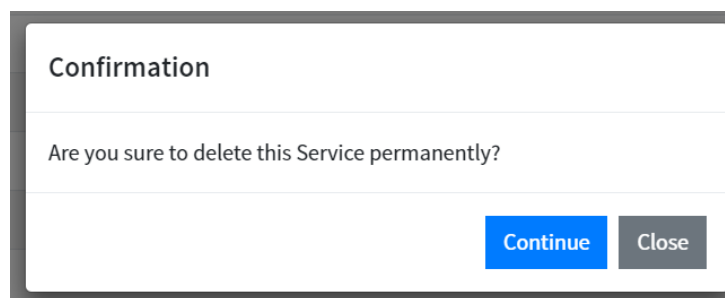
**Fig.14** Create Service Interface



**Fig.15** View Service Interface

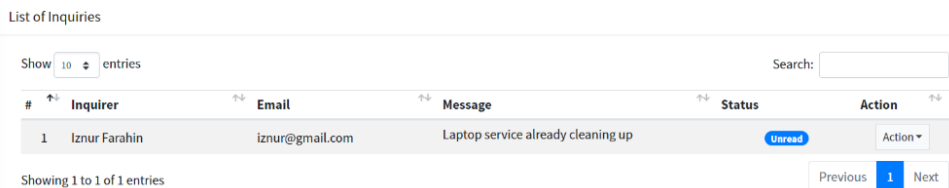


**Fig.16** Update Service Interface



**Fig.17** Delete Service Interface

Third module is notification module where admin or staff notified into client through inquiries on the system to alerting the progress of service. Figure 17 shows the interface of notification module.



**Fig.18** Notification module

## 6 Conclusion

To conclude, the development of Ohmygadget Computer IT Services systems can give a benefit to both businesses and end-users. Through its web-based interface, the Ohmygadget Computer IT Services system has the capacity to democratize access to efficient IT solutions, making it user-friendly for both technical and non-technical individuals. Additionally, centralizing IT services to improves better resource management and cost effectiveness for business and contribute to improve the operational agility.

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## Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

## Author Contribution

This journal requires that all authors take public responsibility for the content of the work submitted for review. The contributions of all authors must be described in the following manner:

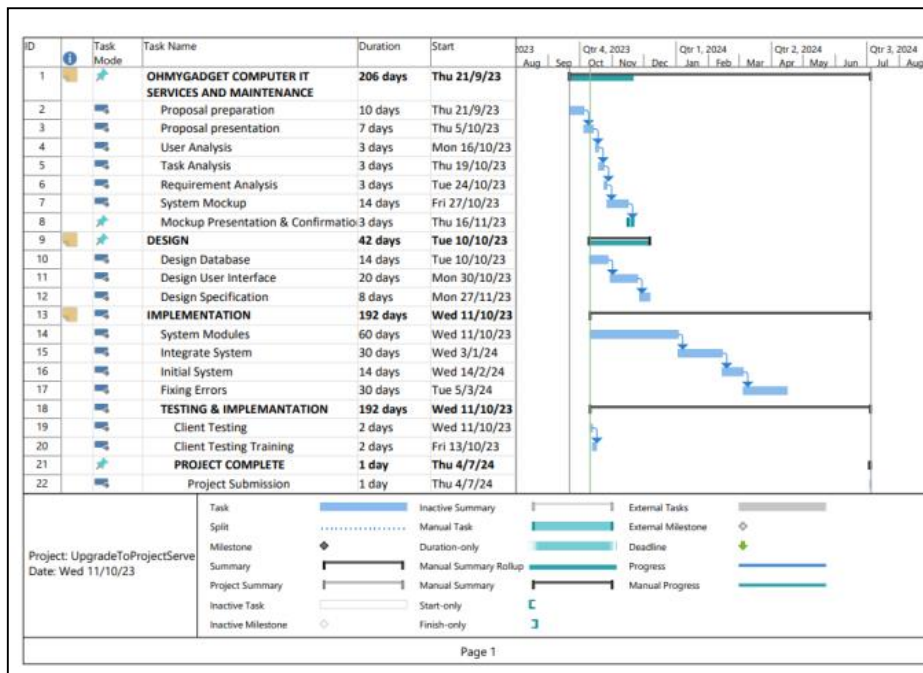
The authors confirm contribution to the paper as follows: **study conception and design:** Noor Raihanah Noor Baharim, Mohd Amin Mohd Yunus; **data collection:** Noor Raihanah Noor Baharim; **analysis and interpretation of results:** Noor Raihanah Noor Baharim; **draft manuscript preparation:** Noor Raihanah Noor Baharim. All authors reviewed the results and approved the final version of the manuscript.

## References

- [1] S. S. Al-Fedaghi and Y. Atiyah, "Tracking systems as thinking machine: A case study of a service company," *Int. J. Adv. Comput. Sci. Appl.*, vol. 9, no. 10, pp. 110–119, 2018, doi: 10.14569/IJACSA.2018.091014.
- [2] J. Smith, "Web-based systems and their role in advancing business efficiency," *J. Inf. Technol.*, vol. 25, no. 3, pp. 125–142, 2021, doi: 10.xxxxxx/jit.2021.25.3.125.
- [3] P. Kamooshi, "The benefits of using web-based applications," *Geeks Ltd.*, Feb. 22, 2019. [Online]. Available: <https://www.geeks.ltd.uk/insights/articles/the-benefits-of-using-web-based-applications>
- [4] Kanopi-ICT Sdn. Bhd., "Innovative ICT solutions for modern businesses," 2023. [Online]. Available: <http://www.kanopi-ict.com/innovative-solutions-report>
- [5] S. Al-Saqqa, S. Sawalha, and H. AbdelNabi, "Agile software development: Methodologies and trends," *Int. J. Interact. Mobile Technol.*, vol. 14, no. 11, 2020.
- [6] AltexSoft, "Functional requirements," Aug. 29, 2019. [Online]. Available: <https://www.altexsoft.com/blog/functional-requirements/>
- [7] N. A. M. Saad and M. Muniandi, "The reflections on the using of Oracle Data Modeler in creating entity relationship diagram (ERD)," *Int. J. Res. Publ.*, vol. 66, no. 1, pp. 20–26, 2020
- [8] T. J. Teorey, *Database Modeling and Design: Logical Design*, 5th ed. Morgan Kaufmann, 2009.
- [9] J. L. Harrington, *Relational Database Design and Implementation*. Morgan Kaufmann, 2016.

## Appendix A

### Gantt Chart



Appendix B

