Software Requirements Specification

for

Laundry Cashflow Monitoring and Management System

Version 1.0

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1. Introduction

1.1 Purpose

The purpose of this paper is to guide the developers in developing the system with the established project description, methodology, requirements definition, various diagrams that is vital for the system development. The paper would also serve as the repository of updates on both requirements and the system development itself and provides clear breakdown of the workload needed in the development. In addition, this paper will also serve as the assurance on the clients that the developers were able to understand their problems and can solve or providing solution with the identified concerns.

1.2 Intended Audience and Reading Suggestions

This software requirements specification is intended for the developers, tester, documentation writer and the users of the service management system.

The Developers and Tester. The developers and at the same time the tester will have no issues in reading and understanding the entirety of this paper, upon understanding the introduction and project description, they can then proceed on the Analysis and Design, Data Models, The System, Non-functional Requirements, and then the Implementation

Documentation Writer. The documentation writer can read the introduction and the project description, then upon understanding those part, they can then proceed to the Methodology, Requirements Definition, The System, and down to the Conclusions.

The Client. The client can read and understand the introduction and project description, then they can have their way on The System, which includes the system overview and the system features and functions.

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2. Project Description

The proposed system is a laundry cashflow monitoring and management system. This will include an integrated cashflow monitoring for *Miggy's Laundry,* wherein, it can help the owner and staffs to lessen the time on listing records and calculating manually the cashflow. This can also assist them in reducing costs, avoiding losing records and the risks of exposing the business to mismanaged funds due to human errors. Therefore, the system provides a digitalized platform for managing the laundry business instead of paper-based management.

2.1 Overview of the Current System

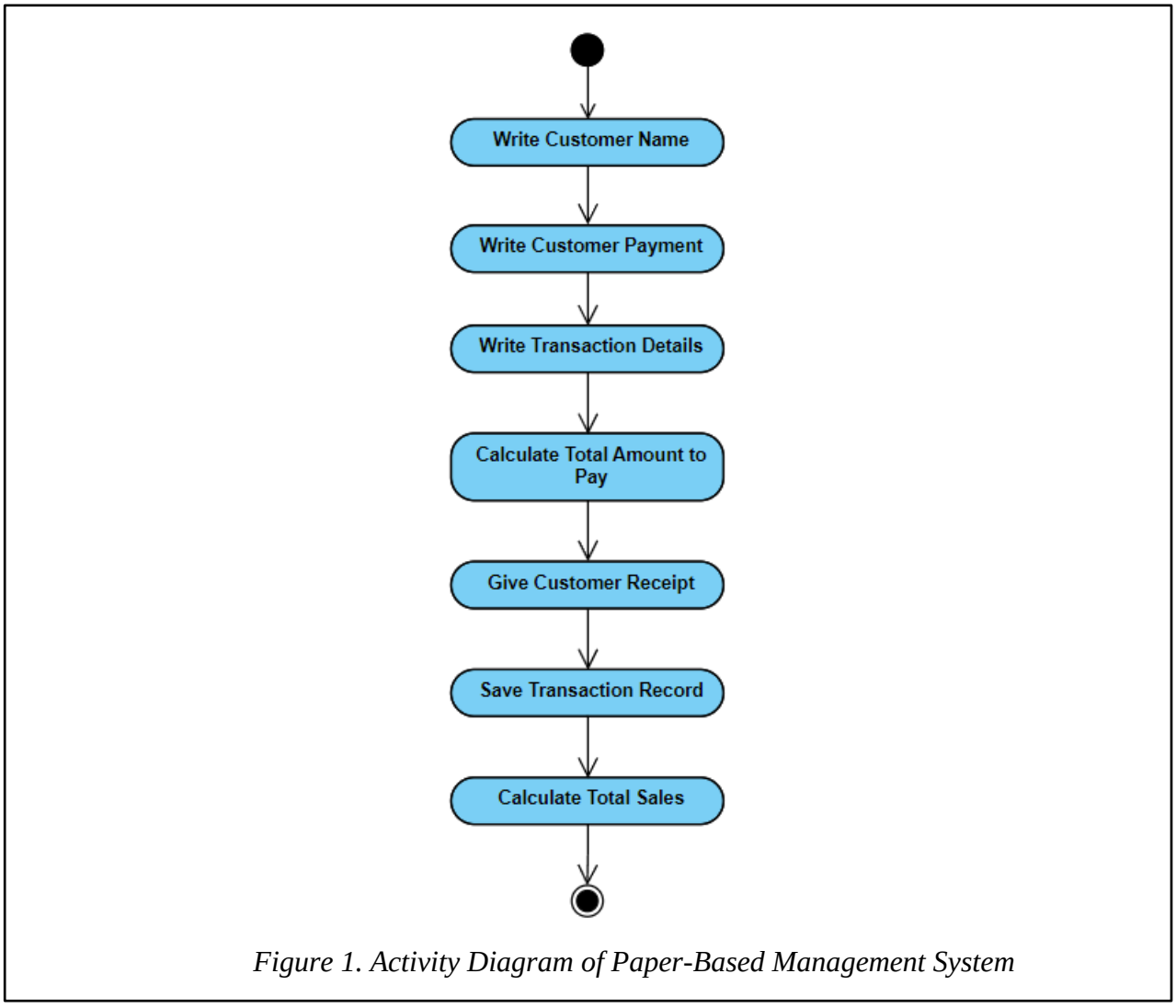


Figure 1. Activity Diagram of Paper-Based Management System

Figure 1 shows the flow and series of the current system of Miggy's Laundry shop which is paper-based management. The first step in the diagram illustrates that when customers arrive, the

owner or staff will write and record their name, followed by the transaction information, which includes the weight of their laundry load and the type of laundry they select. After they record the information, they will calculate the amount and provide the customer receipts so the customer knows how much they will pay and can show the receipt when it is time to retrieve their laundry. After the staff or the owner saves and records transactions on that day, the owner will calculate the overall sales for the day.

2.2 Problem Statement

In *Miggy's Laundry* shop, the staff uses the traditional way in managing their business-related data. Writing and retrieving records on paper to manage a laundry shop takes longer and increases the risk of errors. Manually writing records not only take up time but can also stack up the number of business documents. With the accumulation of written records, this will result into the difficulty of managing business-related data.

2.3 Objectives

2.3.1 General Objective

The main objective is to develop a system for Miggy's Laundry Shop.

2.3.2 Specific Objective

-To gather requirements needed for creating a system.
-To design the system architecture.
-To develop the working system of the cash flow management system.
-To test and evaluate the developed system.

2.4 Significance of the System

The significance of this system is that it automates the transaction process of Miggy's Laundry Shop and provides ease in tracking the cash flow of the business. The Laundry Cashflow Monitoring and Management System basically incorporate cashflow tracking into the management system itself, so that the owner and staff will not spend most of their time listing records and manually evaluating cashflow in their preferred time frame. The group also aims that this system will assist in reducing management costs, avoidance of record loss, and to avoid the risk of exposing the company to mismanaged funds due to human error, which is vital in improving the business as it eliminates the risks from using paper-based management.

2.5 Scope and Limitation

The Laundry Cashflow Monitoring and Management System is currently intended for Miggy's laundry Shop and other laundry shops which has the same transaction method. On managing

the transactions, this includes entering customer details, transaction details and their payment. While, in monitoring cashflow, this includes calculating both cash inflow and outflow, generating profit, as well as tracking the business records.

2.6 Gantt Chart

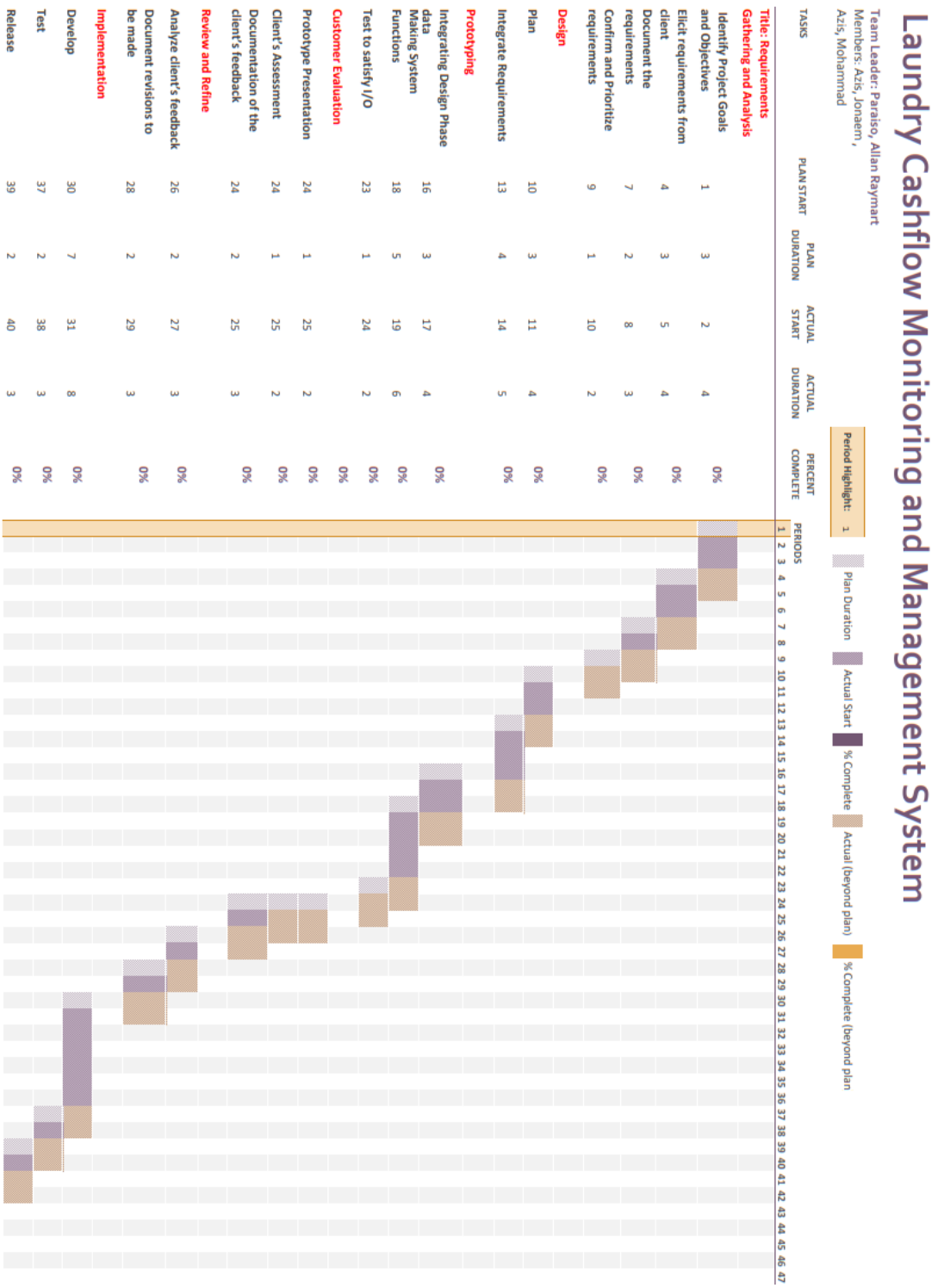
This Gannt chart is made based on the Prototype Model, which the developers will be using as they will work on the system.

Title	**Outline**	
	Activities	***Duration***
Requirements Gathering and Analysis	Identify Project Goals and Objectives	3
	Elicit Requirements from Client	3
	Document the Requirements	2
	Confirm the Requirements Prioritize Requirements	1
Design	Plan	3
	Integrate Requirements	4
Prototyping	Integrating Design Phase data	3
	Making System Functions	5
	Test to Satisfy I/O	1
Customer Evaluation	Prototype Presentation	1
	Client's Assessment	1
	Documentation of the Client's Feedback	2
Review and Refine	Analyze Client's Feedback	2
	Document Revisions to be Made	2
Implementation	Develop	7
	Test	2
	Release	2

Table 1. Gantt Chart

[a.] The table above, Gannt Chart, provides the tasks outline and their respective title and duration, all in reference to the Work Breakdown Structure provided in the appendix.

Work Breakdown Structure (WBS)



[a.] The image above is the Work Breakdown Structure, provides the full set of tasks with their corresponding start, end, and duration, for which the data of Table I. Gannt Chart is referenced from.

3. Methodology

The developers will adapt the Software Development Life Cycle (SDLC): Prototype Model. Model description of (Martin, 2022) is acknowledged.

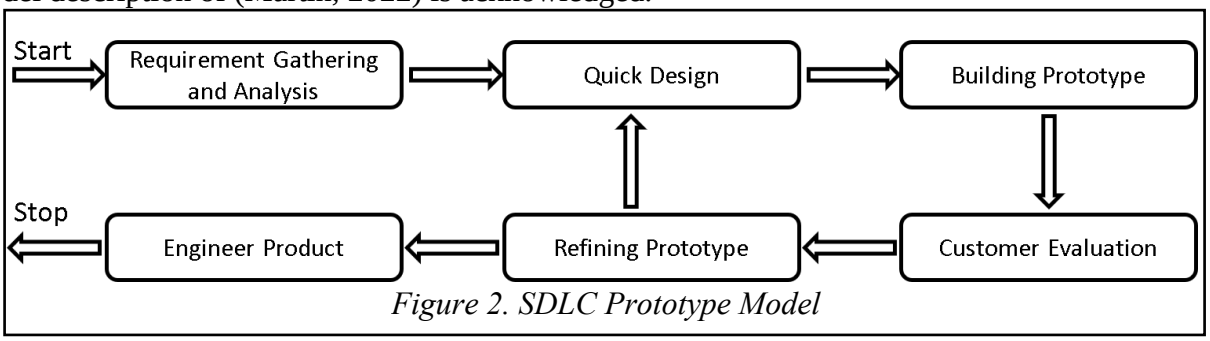


Figure 2. SDLC Prototype Model

The developers will use the Software Development Life Cycle (SDLC): Prototype Model. A prototype will come first to have a better clear grasp of the client's requirements. The SDLC phases are the requirement analysis and model, that will explain the first step in which the developer will determine the aim and scope of the study, the requirement specification, this is how the developer will analyze the requirement elicitation and the features of the system that will help the current system, the design, which is designing the prototype based on the information obtained from the requirement elicitation, the implementation, which is the phase that the developer will build the system, the testing phase will test the generated software to see if there are any faults or errors in the system's functionality. Finally, the deployment and maintenance phase will deliver the system to the end user while monitoring the system for bugs and errors.

The advantage of using prototype model is that it allows the client and the developers to have more hands-on collaboration before the actual implementation and deployment of the system.

3.1 Requirements Analysis and Model

The process of determining the expectations of the functioning system is known as requirement analysis. The first step in this process is for the developers to determine the scope of the project and the end-user of the system, who is the owner of *Miggy's Laundry* shop. After determining the aim of the study, they will begin interviewing the client to acquire detailed requirements for the working system. Once the interview is completed, they will proceed to analyze what the client needs and develop a method for a system. The *use case* will be utilized by the developer to offer a walkthrough of the entire system. This will help in understanding how the system will function.

Once categorizing the requirements, the developer will determine which needs are achievable and record each one of them. The developers must ensure that the need is well stated, sufficiently detailed, and related to business needs. In the last phase, they will conduct a complete analysis of the product based on the requirements gathered to verify its reliability and identify any main problems. Once a final decision on the requirements is made, the developers will ensure that there are no changes or uncontrolled increase in the scope of the project.

3.2 Requirements Specification

The developers of this project conducted an interview with the owner and staff of *Miggy's Laundry* shop to have them the problem and issues with their current system, then, they analyzed the interview transcripts and understood the factors that contribute to their problem. It is then agreed that there will be a feature that contains information about the customers, creation of transactions, automatic calculations of sales and profit, and records of all transaction related data. A table of questions and answers from the interview was provided below.

No.	Questions	Answers
1	What is your current way of saving or recording important business transactions?	"...I have a notebook there to lists first the customer, number of kilos, and amount. Then I will transfer it on a bond paper (sales report paper) with the same data to compute the sales including the expenses..."
	Are there any problems that arise when using this system? If there are, what are they?	"Yes, like for example... the cash in the drawer is less than the computed sales, because sometimes there are expenses that we forgot to list... then, sometimes I unconsciously listed that (the customer) already paid even though they are not still paid..."
2	Have you experienced losing customer records?	"Yes, there are. Sometimes I forgot to list a transaction that have happened, but fortunately all of the transactions were saved first in the receipt..."
	How about miscalculation of daily sales and profit?	"...Sometimes the input in the calculator is incorrect..."

	How do you think using papers affects your business in terms of managing transactions and calculating sales?	"...it's tiring, and a lot of work has to be done... but you know the sales report is helpful because it can be used for verification for some of the customer's inquiries."
3	What do you think of having a Laundry Cashflow Monitoring and Management System?	"I think that (sales management system) is good because of automatic generation of data, it will be faster... I think I am familiar with that...my former business has used something like that, you know, you just need to click and click."
4	Do you have any comments or suggestions for this system?	"...I am not that expert in using applications that I am not used to, I just hope that you will teach it first to us so that we can understand it better...and what if that system will be inflicted with viruses (faulty, defective), will my saved data be erased?"

Table 2. Interview Scripts

3.3 Design

This phase consists of diagrams that are crucial in developing the prototype, the information from the requirement elicitation, the analysis of the interview transcripts, and the requirement specification are linked together to provide detailed information through diagrams of the visioned prototype.

3.4 Implementation

To implement the working system, the developer needs to analyze the information from the interview conducted. This will allow them to build a system that meets the expectation of the client, the *Miggy's Laundry* shop. Before implementing the working system, the developers must understand the flow of the project, they need to create deliverables of the project like creating a Gantt chart that shows the timeline and schedule of the project, Entity Relationship Diagram (ERD) to represent the starting point of the system, and the sequence diagram to understand the desired outcome of the system. After planning with all the expectations to the system, it is time to build the working system. During this step of making the working system, the developers need a regular meeting to discuss their progress and measure the project timeline against the project schedule. Also, they need to make changes, such as to address additional features, and adjustments to fulfill the expectation of the client. Once the developer has completed the system, they will gather their feedback about the system and be ready for testing through the client.

3.5 Testing

Once the prototype is done, the developers will then test it. The developers will act as the users of the system. They will then make an account then log in to the system. After the log-in, the developers will test the functionality of the system. A sample transaction will be inputted. After inputting samples sales, the developers will look at the records if the inputted sample transactions are stored. The developers will also search for a specific record and test if the said records are easy to access. After checking the functionality of inputting and searching of records, the functionality of cash flow is also tested. Since there are already sample transactions, the developers will make sure that the cash flow management is functioning properly. If the tests reveal that there are no problems in the systems functions, then the developers will proceed to the next step. If the developers do find problems in the system, the developers will fix the found problems.

After the testing is done, the developers will then proceed with the usability test with the client. This time, the users of the system will be the staff and owner themselves. Starting with the making of their accounts and then logging into the system. The staff and owner will be testing the same way the developers tested the system. If the staff and owner are satisfied with the current functions and features of the system, then the developers will proceed in the finalization of the system. If there are changes that the staff or owner want, then the developers will proceed with in the modification of the system according to the staff and owner’s preferences.

3.6 Deployment and Maintenance

Before proceeding to the final phase of the methodology, the developers have already performed several testing phases of the prototype. This will verify that the developed laundry cashflow monitoring and management system is ready to deploy to the end-user, *Miggy's Laundry* shop. However, the team must ensure first a detailed plan or documentation for the preparation of deployment and maintenance phase. This includes a deployment schedule to meet with the client, a brief description of the system that will be easy to understand by the owner and staffs, and their role while operating the system. Also, it is necessary for the team to provide a solution for possible errors or bugs within the new and automated system. In this case, they must be ready for revisions of document until the final phase has been satisfied. Hence, after the deployment it is important to perform maintenance or monitoring of the system.

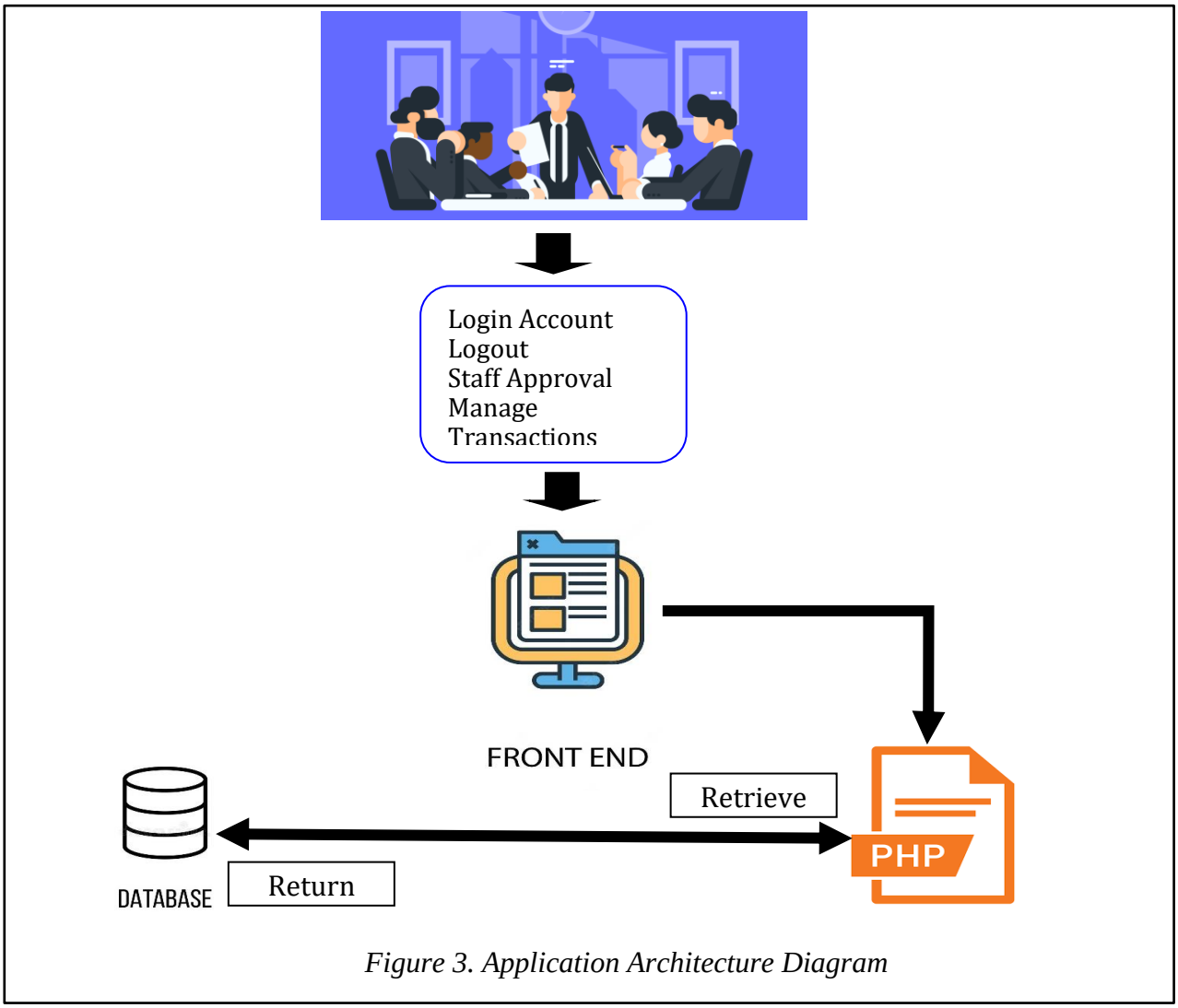


Figure 3. Application Architecture Diagram

4. Requirements Definition

This section will discuss the functional and nonfunctional business requirements based on the results of the interview from the client. The functional requirements will include the create/add, read/view, update/edit, and delete/remove of necessary data in Laundry Cashflow Monitoring and Management System. In addition, the system will also have a search and pagination functionalities for the client to have a better user experience. Specifically, the functions that the client wants or expecting from the developers are listed below:

- **Login Account.** This pertains on how the staff and the owner logs into the system.
- **Logout Account.** This requirement describes how the staff, and the owner logs out of the system.
- **Manage Transaction.** This requirement describes how the staff, and the owner adds a new order, update and view transactions.
- **Monitor Cash Flow.** This requirement describes how the owner add, edit, and view expenses. It also describes how the owner views reports.
- **New Staff Approval.** This requirement describes how the owner accept or decline a staff in the system.

In general, the client which is the owner of the *Miggy's Laundry* wants a user-friendly laundry cashflow monitoring and management system. It was provided in the interview that the future users of this system are not that skilled in using computer-assisted programs.

4.1 Requirements Traceability Matrix

The Requirements Traceability Matrix consists all of the requirements proposed by Miggy's laundry Shop and their corresponding requestor, date of request, and status to provide traceability on the overall requirements.

RTM ID	Requirements	End Users	Start Date	Target Date	Status	TestCase ID
1	log in	Staff and Owner	30-Oct-22	31-Oct-22	Completed	1
1.1	register	Staff	30-Oct-22	31-Oct-22	Completed	2
2	log out	Staff and Owner				3
3	**Manage Transaction**		30-Oct-22	31-Oct-22	Completed	
3.1	Enter order details	Staff and Owner	02-Nov-22	11-Nov-22	Completed	4
3.1.1	search customer	Staff and Owner	02-Nov-22	05-Nov-22	Completed	5
3.1.2	enter new customer	Staff and Owner	06-Nov-22	07-Nov-22	Completed	6
3.2	update transaction details	Staff and Owner	08-Nov-22	09-Nov-22	Completed	7
3.2.1	edit transaction status	Staff and Owner	10-Nov-22	11-Nov-22	Completed	8
3.3	view transaction records	Staff and Owner	12-Nov-22	13-Nov-22	Completed	9
4	**Manage Cash-Flow**					
4.1	add expenses	Owner	14-Nov-22	17-Nov-22	completed	10
4.1.1	edit expenses	Owner	18-Nov-22	19-Nov-22	completed	11
4.2	view expenses	Owner	20-Nov-22	24-Nov-22	Completed	12
4.3	view sales report	Owner	25-Nov-22	29-Nov-22	pending	13
5	new staff approval	Owner	30-Nov-22	09-Dec-22	Pending	14

Table 3. Requirements Traceability Matrix

The Requirements Traceability Matrix entails all the requirements that is requested by the client, Miggy's Laundry Shop, request date, and status. The requirements are primarily divided into five (5) parts; login account, logout account, manage transaction, monitoring cash flow and new staff approval.

TC ID	Test Case Description	Test Step	Expected Result	Status
1	User Must be able to log in	Input username and password then press log in button.	User must be directed to landing page	Pass or fail
2	User Must be able to register	Input log in credentials on the respective fields, press submit, and test it on log in	User must be able to log in with saved log in credentials	Pass or fail
3	User Must be able to log out	Press sign out button	User must be redirected to login page	Pass or fail
4	User must be able to add order details	Input transaction related information on the transaction forms then press submit.	User must be able to save transaction data and see it on transaction data table	Pass or fail
5	User must be able to search customer	Enter any characters in the search form.	Customer must be displayed based on the characters entered.	Pass or fail
6	User must be able to add new customer	Input customer related information on the customer forms then press submit.	User must be able to save customer data and see it on customer data table	Pass or fail
7	User must be able to update data from transaction data-table	Press edit then enter update details	Updated data must be displayed	Pass or fail
8	User must be able to edit transaction status	Update transaction status from transaction data-table	Updated transaction status must be displayed	Pass or fail
9	User must be able to view transaction records	Press transaction tab on the sidebar	User must be able to see transaction records	Pass or fail
10	User must be able to add expenses	Input expenses related information on the expenses forms then press submit.	User must be able to save expenses data and see it on expenses data table	Pass or fail
11	User must be able to edit expenses	Update expenses from expenses data-table	Updated expenses data must be displayed	Pass or fail
12	User must be able to view expenses	Press expenses tab on the sidebar	User must be able to see expenses records	Pass or fail
13	User must be able to view sales report	Press reports tab on the sidebar	User must be able to see summarized sales report	Pass or fail
14	User must be able to approve new staff	press accept or reject on the staff requests	When accepting, the staff must reflect on staff data-table, when rejected, the staff request must be deleted and not reflect on the staff data-table	Pass or fail

Table 4. Test Case Description

The test case description, lists all of the test case descriptions, with its respective test steps, expected results, and status, which will serve an instruction or a guide to a tester to execute the tests properly which will validate a specific part of the prototype.

4.2 Activity Diagram

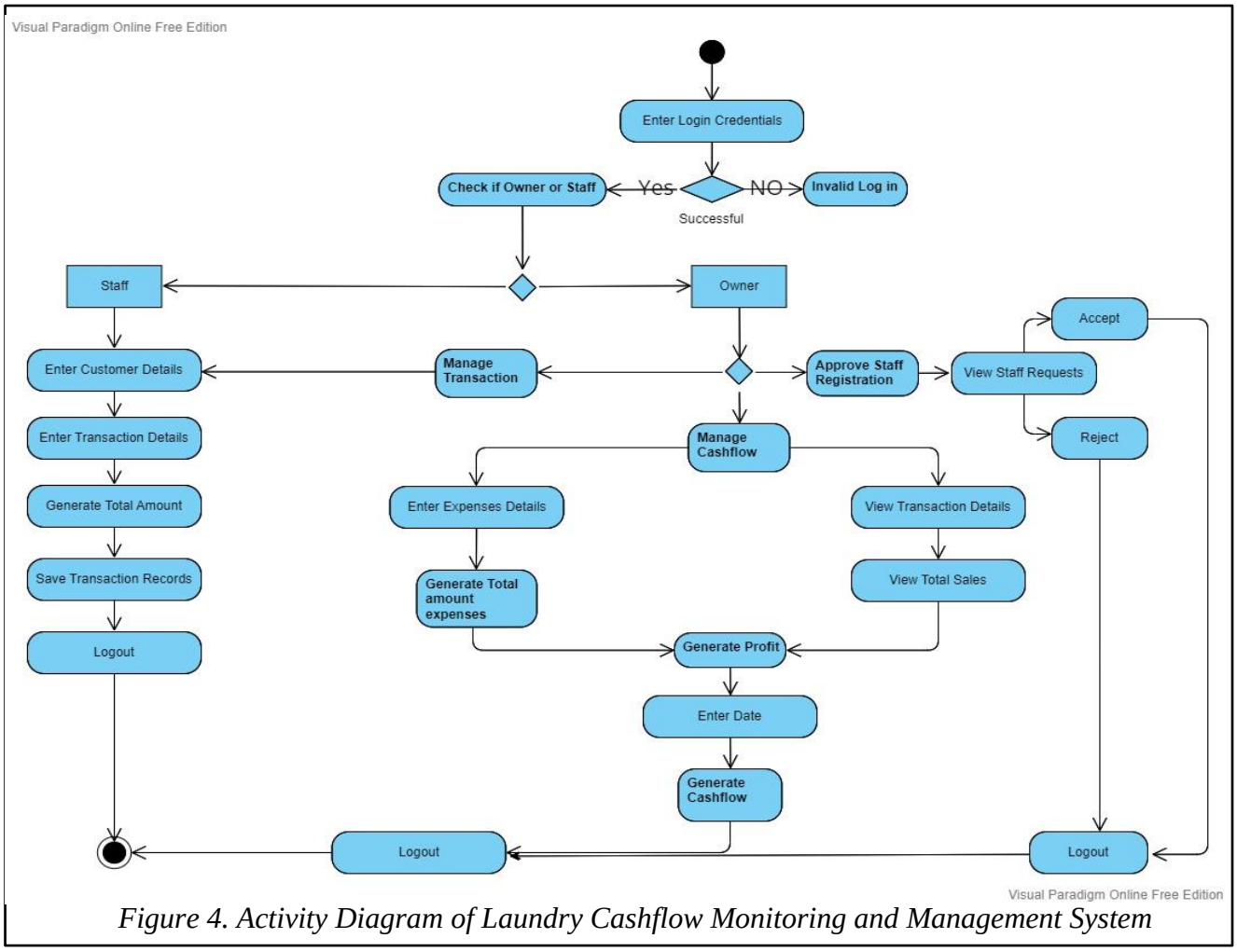


Figure 4. Activity Diagram of Laundry Cashflow Monitoring and Management System

The diagram shows the activity diagram, the system will be responsible for recognizing the roles of the user during the login process. Once identified, it will redirect the user into a landing page for which the owner has additional tabs for managing staffs, and cashflow. The staffs will be managing business transactions from the customers only, including customer details, transaction details, and payment. After that, the data will be saved. On the other hand, the owner can also perform business transactions since there are instances wherein the staff members are busy dealing with the laundries. The owner can also monitor the cash flow and approve staff requests. In terms of cash inflow (sales), it will be the total sales of the day based on the record on transactions. Cash outflow (expenses) will be computed from the generated expenses table that happened during that day, while the profit will be the difference of sales from expenses. The output of the computation will be saved for future purposes such as tracking the business sales.

5. Analysis and Design

The process of recognizing the system's problem and defining how the system will satisfy its needs is known as analysis and design. This will assist the developers to comprehend the system's problem as well as the system itself. The analysis and design in this study will demonstrate the use case diagram and the use case description, which will offer the interaction of the user via the system and how the user will execute the system. It also displays the sequence diagram, which depicts the behavior of the actor when engaging with the system, and the collaboration diagram, which depicts the interaction of the objects in the system.

5.1 Use Case Diagram

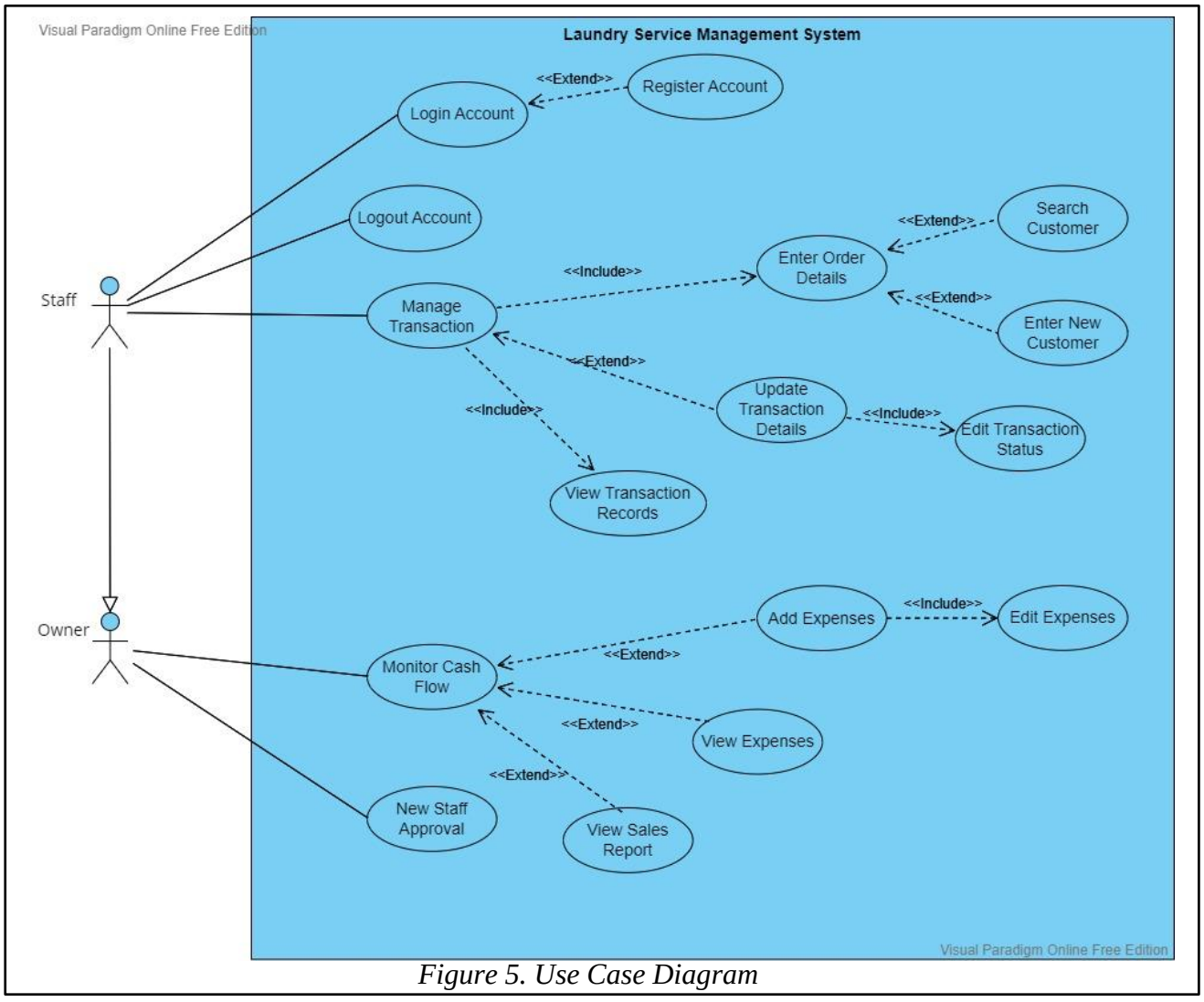


Figure 5. Use Case Diagram

This use case diagram shows the behavior of the actors (users) while interacting with the system. The actors for this diagram are the staff members and the owner. This interaction happens every time the business receives customers. Before the users can manage transactions and monitor the cash flow, they must first login to the system. Both the staff members can manage transactions data while only the owner can monitor the cash flow of the business.

5.2 Use Case Description

Use Case ID:	UC-1
Use Case Name:	Log-in
Actors:	Staff and Owner
Description:	This use case describes how the staff and the owner logs into the system.
Trigger:	The staff and owner must have access to the app, and they enter their credentials correctly.
Preconditions:	The staff and owner must have an account.
Normal Flow:	1.1 Log-in 1. Enter username. 2. Enter password. 3. Click the log-in button. 4. The owner and staff are logged into the system.
Alternative Flows:	1.1 Log-in 1. Enter username. 2. Enter password. 3. Click the log-in button. 4. Invalid username or password. 5. The owner or staff are not logged into the system.
Exceptions:	N/A
Post conditions:	The owner or staff is logged in to the system.

Use Case ID:	UC-2
Use Case Name:	Log-out
Actors:	Staff and Owner
Description:	This use case describes how the staff, and the owner logs out of the system.
Trigger:	The staff and owner click the log-out button.

Preconditions:	The staff and owner must be logged in to the system.
Normal Flow:	2.1 Log-out 1. Click the sign-out button.
Alternative Flows:	N/A
Exceptions:	N/A
Post conditions:	The owner or staff is logged out of the system.

Use Case ID:	UC-3
Use Case Name:	Manage Transactions
Actors:	Staff and Owner
Description:	This use case describes how the staff, and the owner adds a new order, update and view transactions.
Trigger:	Successful login to the system.
Preconditions:	The staff and owner must be logged into the system.
Normal Flow:	3.1 Add Customer. 1. Click add new customer button. 2. Input customer first name. 3. Input customer last name. 4. Input customer contact number. 5. Click add customer. 6. Customer is added. 3.2 Add Order 1. Click add order button. 2. Select customer from the list. 3. Select service and laundry type. 4. Input the laundry weight and its amount.

	5. Select the status (laundry, payment, claim). 6. Insert Order. 7. Order successfully added the transactions. 3.3 Update order 1. Click the transaction to be updated. 2. Click update button. 3. Update details that needs to be updated. 4. Click save changes. 5. Transaction is updated. 3.4 View transactions 1. Click transactions tab. 2. Transactions are displayed.
Alternative Flows:	3.1 Add Customer. 1. Click add new customer button. 2. Input customer first name. 3. Input customer last name. 4. Input customer address. 5. Click add customer. 6. Customer already exists.
Exceptions:	N/A
Post conditions:	A new customer is added, and transactions are added or updated.

Use Case ID:	UC-4
Use Case Name:	Monitor Cashflow
Actors:	Owner
Description:	This use case describes how the owner add, edit, and view expenses. It also describes how the owner views reports.
Trigger:	Determine if staff or owner will login to the system.
Preconditions:	The owner must be logged into the system.

Normal Flow:	4.1 Add expenses 1. Click add expense button. 2. Input name of expense. 3. Input date of expense. 4. Input amount. 5. Click add expense. 6. Expense successfully added. 4.2 Edit expenses. 1. Click the expense to be edited. 2. Click edit button. 3. Edit details that needs to be edited. 4. Click save changes. 5. Expense is updated. 4.3 View expenses. 1. Click view expenses. 2. Transactions are displayed. 4.4 View reports 1. Click the reports tab. 2. Reports are displayed. (Sales, expenses, profit, with their corresponding dates).
Alternative Flows:	N/A
Exceptions:	N/A
Post conditions:	A new expense is added, and an expense is edited.

Use Case ID:	UC-5
Use Case Name:	New Staff Approval
Actors:	Owner
Description:	This use case describes how the owner accept or decline a staff in the system.
Trigger:	The owner clicks on staffs tab.

Preconditions:	The owner must be logged into the system.
Normal Flow:	5.1 Accept staff 1. Click staffs tab. 2. Choose staff to be approved. 3. Click Accept staff. 4. Staff is approved.
Alternative Flows:	5.2 Reject staff 1. Click staffs tab. 2. Choose staff. 3. Click Decline staff. 4. Staff is declined and is deleted.
Exceptions:	N/A
Post conditions:	A staff is accepted or declined.

5.3 Sequence Diagram

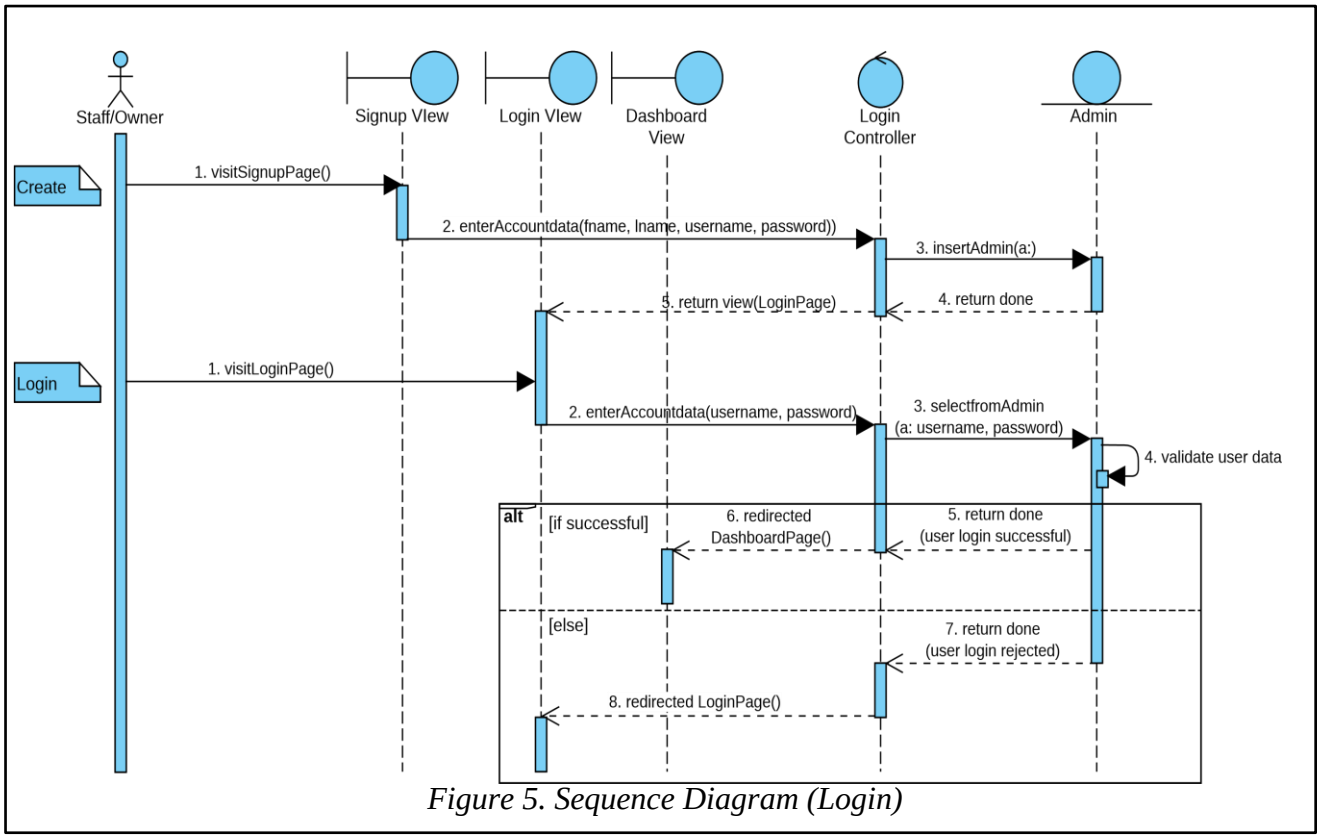


Figure 5. Sequence Diagram (Login)

This diagram shows the sequence on how the actors can have an access of the system. The signup page will be used whenever there will be a new staff hired in the business. It will get inputs such as name, username and password for that account. Every new staff added will be saved in the database, however, they cannot instantly access the system due to staff approval function. Once, the account was approved by the superuser (owner), both the actors can login the system by entering account details. If successful, they will be redirected to the user interface of the system. If not, they will return in the login page.

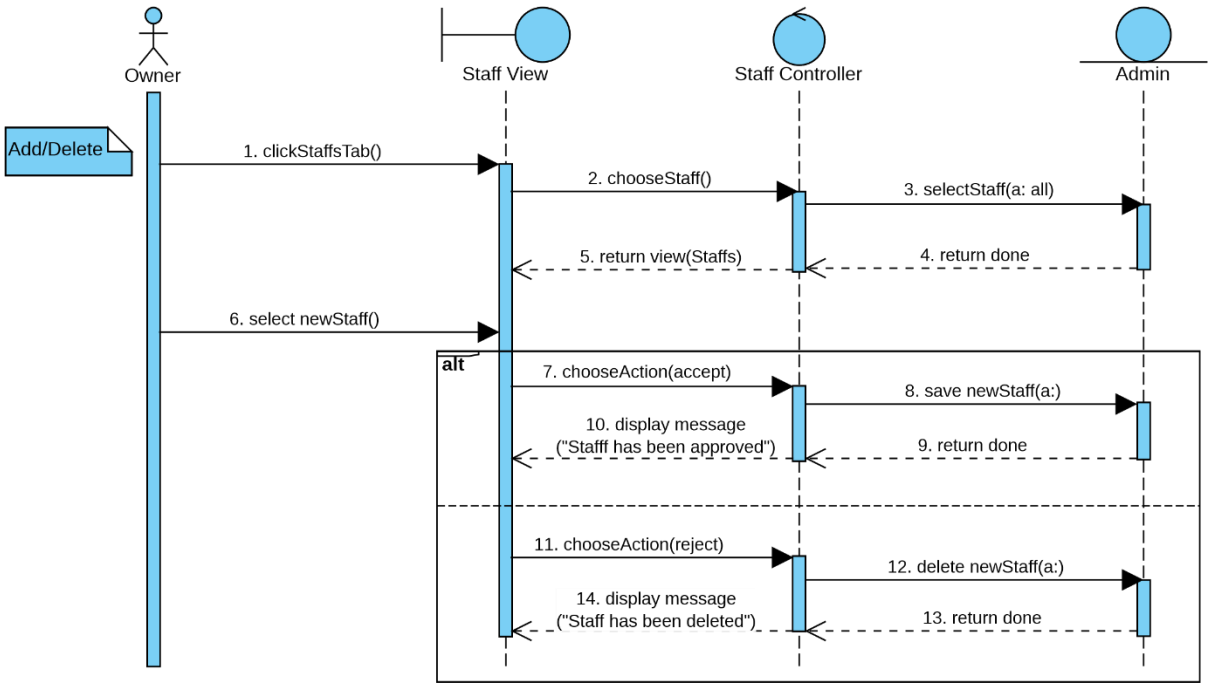


Figure 6. Sequence Diagram (New Staff Approval)

Since the owner is the superuser of the system, he/she will be responsible in performing the new staff approval function for every new account that was saved in the database. In the staff section, the actor can freely accept and reject the staff accounts in the list. The actor can also view the staff members that are already an employee in the business.

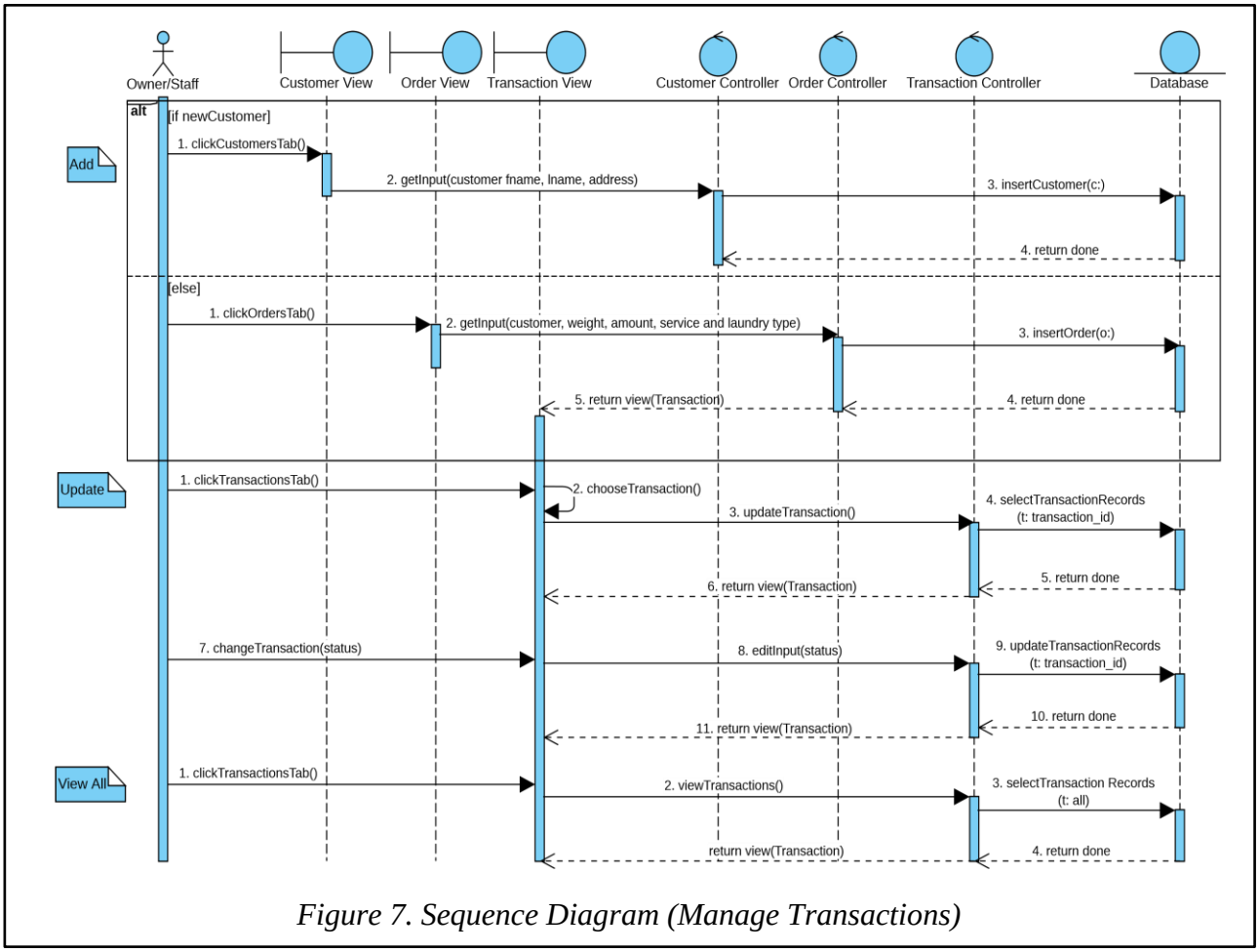


Figure 7. Sequence Diagram (Manage Transactions)

Assuming that the actors are already done logging in to the system, they can proceed in managing transactions data. First, if the customer is not yet registered into the database of the system, the actors will have to enter necessary details for that customer. However, if the customer is registered already, they can proceed on creating a transaction. In adding a transaction, they must be in ‘Orders’ tab of the user interface. Then, this is where the necessary data for every transaction will be entered. The transaction details will be saved in the database and will be displayed in ‘Transactions’ tab. In this section, the actors can update or edit specific details for transactions such as the status of laundry and payment. By editing a data, they will choose first a transaction on the lists and change a specific value on the details. After that, the database will store the updated data and will return the value in the ‘Transactions’ tab. Lastly, the actors can view all of the transactions made inside the same tab.

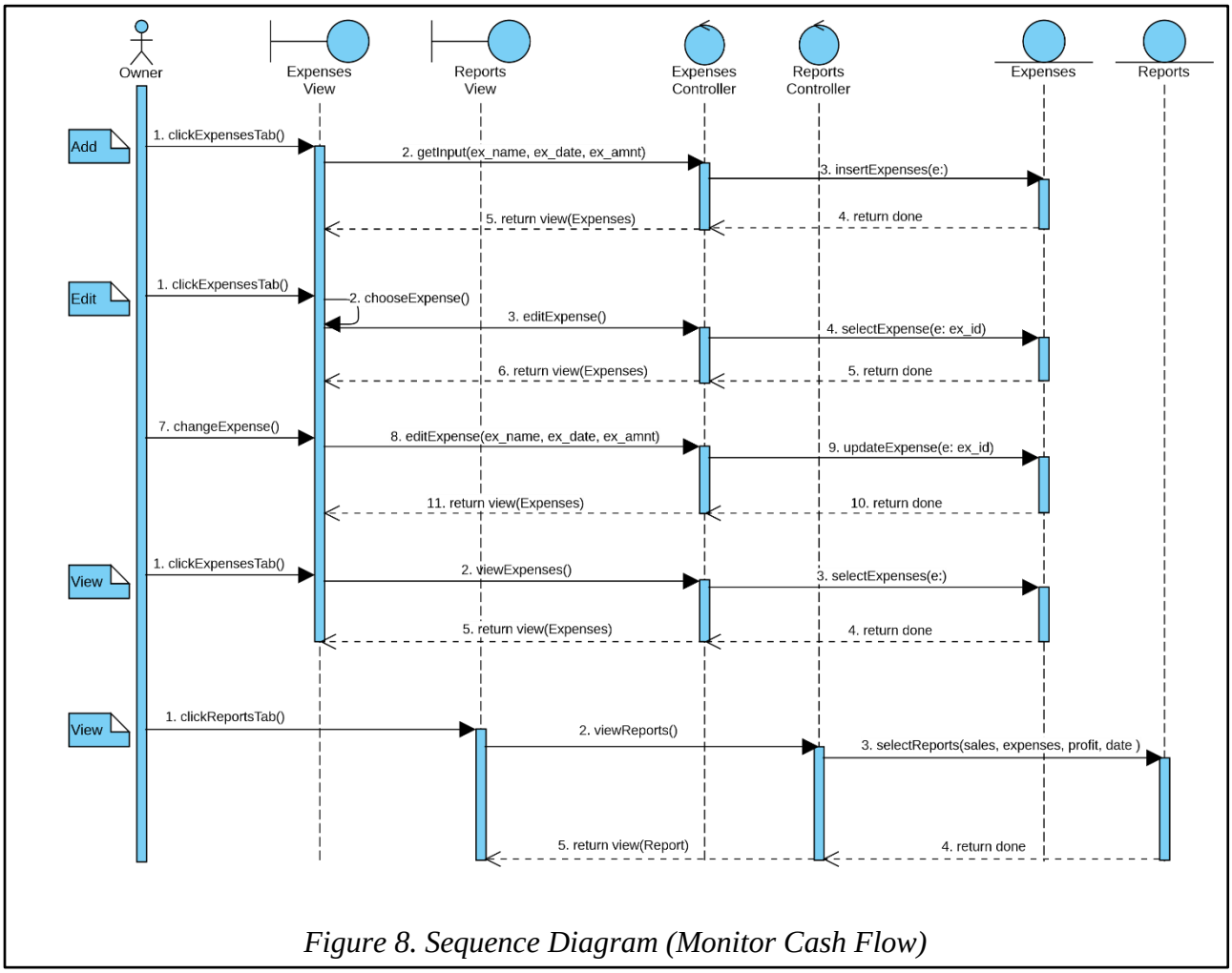


Figure 8. Sequence Diagram (Monitor Cash Flow)

In this sequence, only the owner will be the actor in monitoring the cash flow of the business. This process will start first by creating cash outflow data which includes the name and amount of expenditures in the 'Expenses' tab. Every expenditure saved in the database will return the value in the same tab or panel. Then, the actor can also edit the values saved in the Expenses tab. By doing so, the actor must choose first a specific expense data on the list and can proceed on editing the values like the name and amount of the expense created. After performing the editing, the value will be updated in the database. In terms of tracking sales report, the actor can view the data in the 'Reports' tab. This section of the system will include all the necessary data about cash flow such as the total amount of calculated sales, expenses and profit. The actor can also request a report on sales for a specific date or time frame.

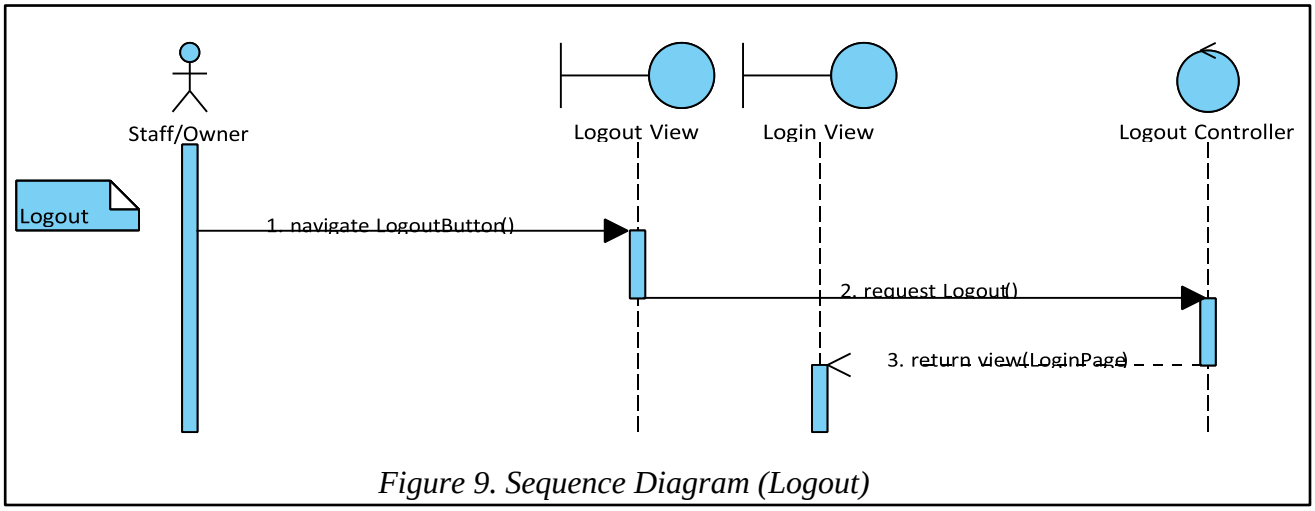


Figure 9. Sequence Diagram (Logout)

The diagram above shows how will the actors/users will logout the system. Inside the user interface, there is a sign-out button below that will request to logout the user. After that, they will be redirected in the login page of the system.

5.4 Collaboration Diagram

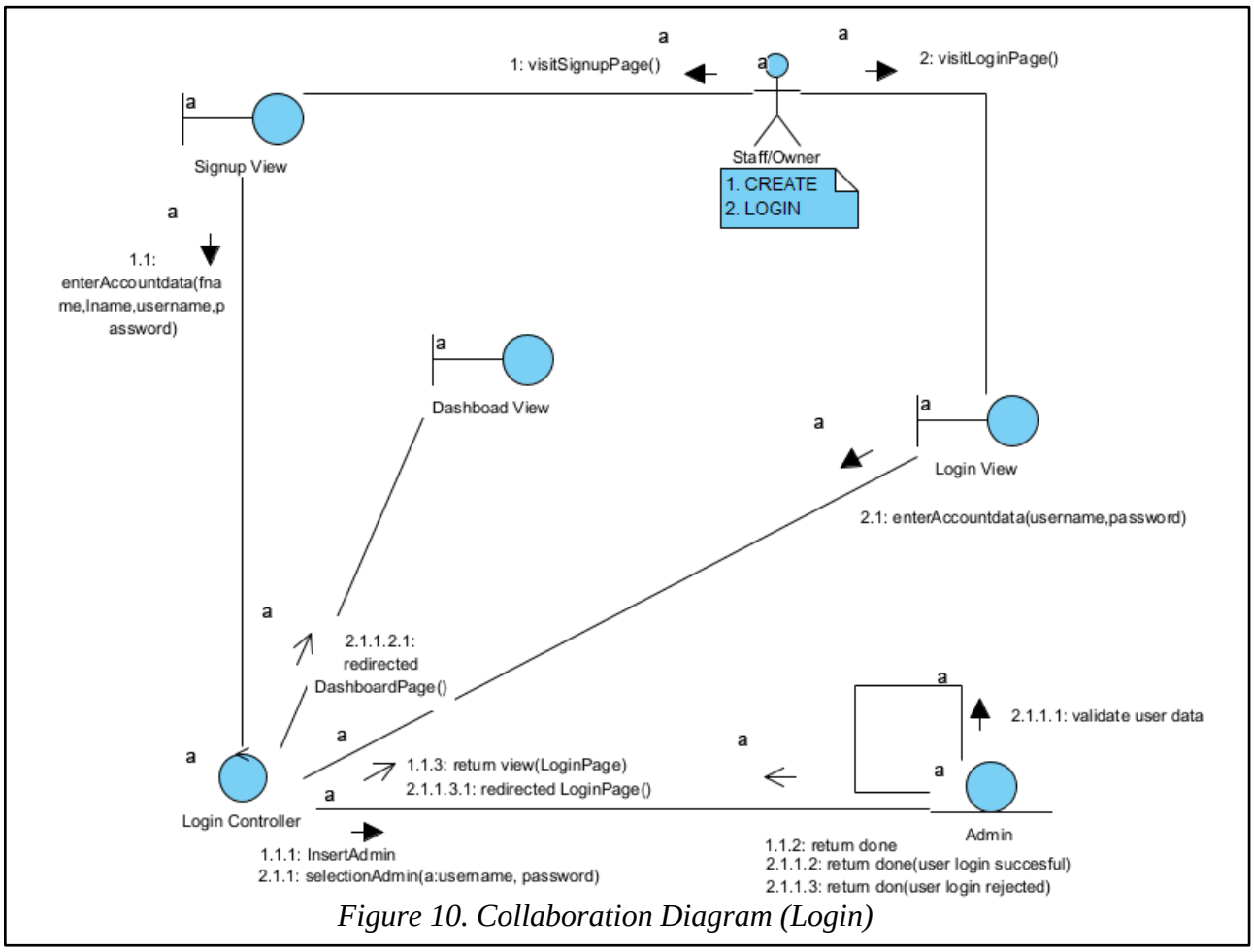


Figure 10. Collaboration Diagram (Login)

This diagram shows when the user or the actor of the business will log in to the system. If the actor has not yet been registered in the system, the actor will visit the signup page. After visiting the page, the actor can sign up to save its information to the database. Once it has been stored in the database, it will go to the Login page to enter the information, which the system will approve.

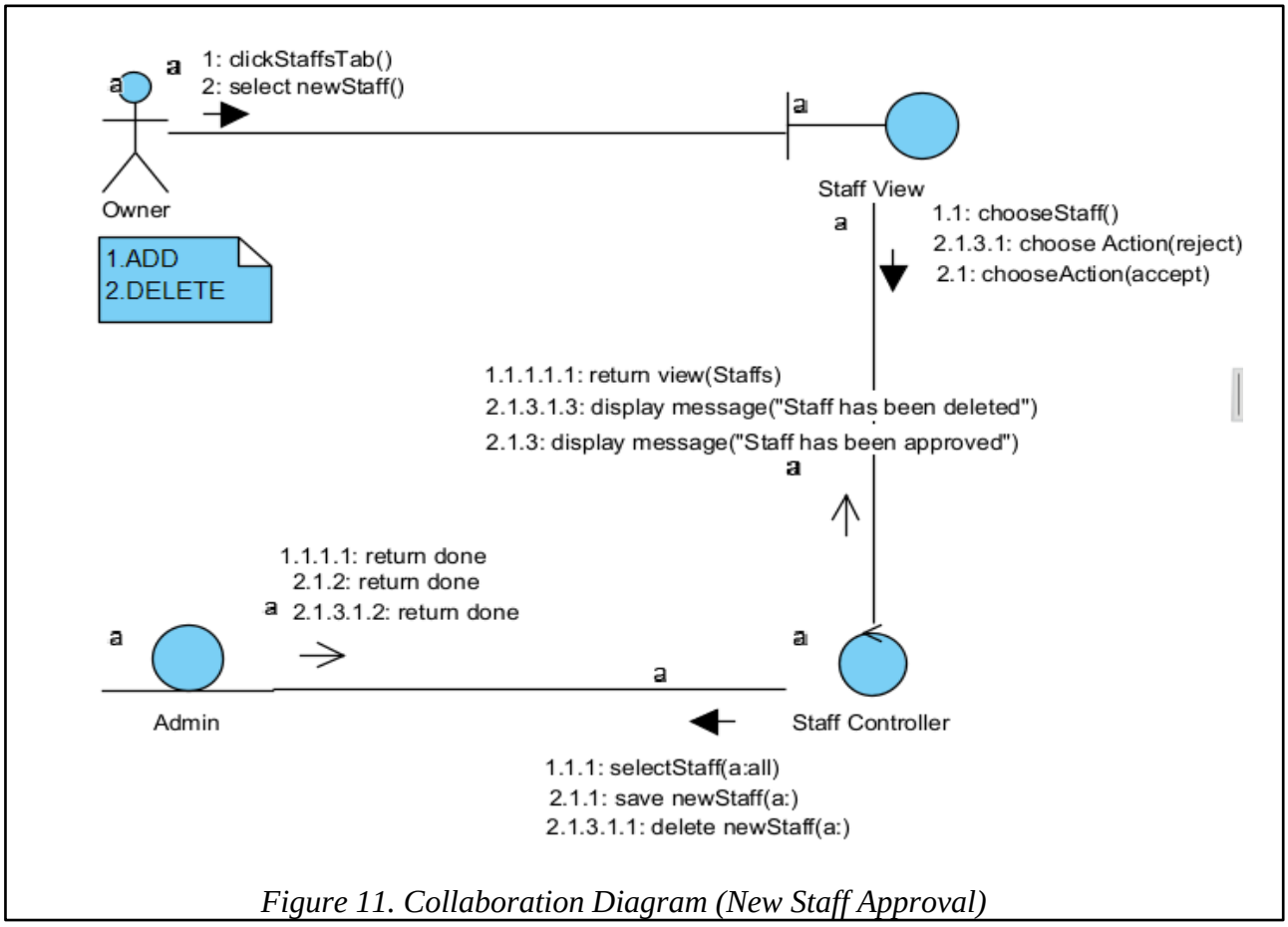


Figure 11. Collaboration Diagram (New Staff Approval)

Only the owner is represented in the actor in the collaboration diagram above for new staff approval since the owner is the only one who will approve a staff to work on its business. If the owner wants to remove a staff member, he can select the delete staff button, and after deleting the data, a message will appear on the screen saying "Staff has been deleted" for the user to know if he successfully deleted a staff data. If the user wants to add a staff data, the user will choose the save new button, to save a new data of staff. After saving the data there will be also a message will display "Staff has been approved".

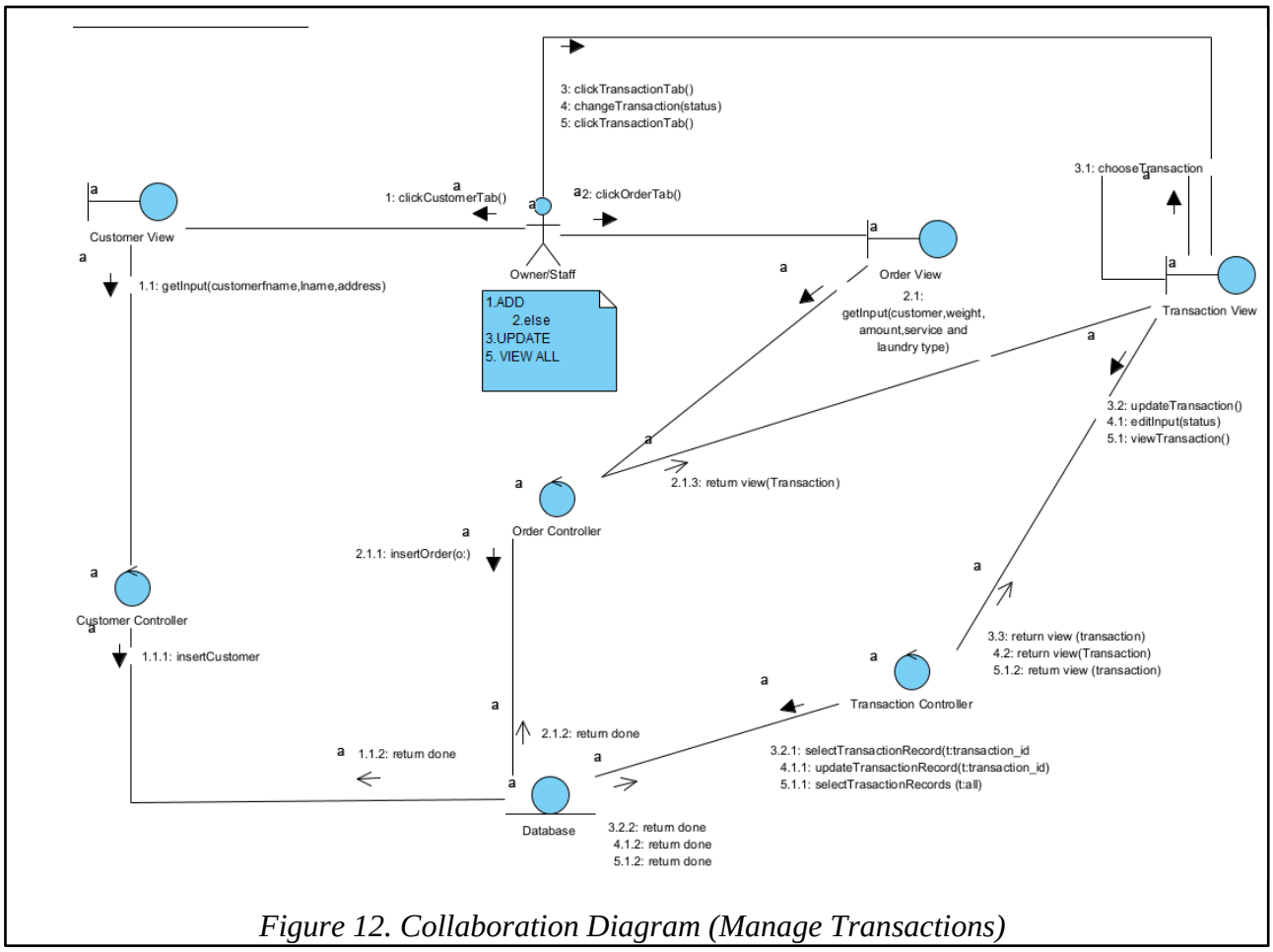


Figure 12. Collaboration Diagram (Manage Transactions)

The diagram shows the event sequence during which the actor who is the owner or the staff will use the system by messaging the control object. In the first flow, it shows that when the user wants to add customer details. If the customer details are already saved from the database, the user will go through the second flow which will go to the order view, then after saving the detail of the customer order through the database, it will go through the transaction view object. Once the user updates a transaction or edit a transaction, the flow will be going first to the transaction view object then after choosing which transaction will perform, it will go through the transaction controller object and get the record when it's done saving it to the database.

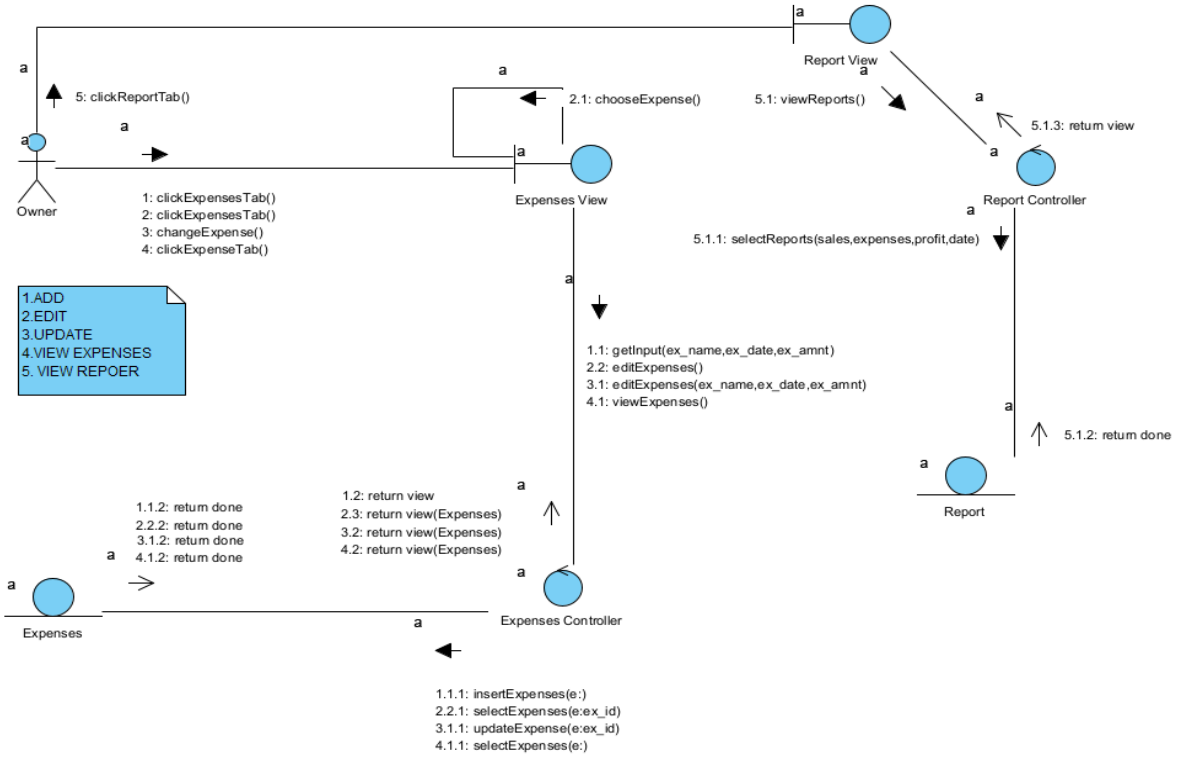


Figure 13. Collaboration Diagram (Monitor Cash Flow)

This diagram shows the flow when the owner performs the monitoring cash flow in the system. The diagram begins with the owner interacting with the system, selecting the option to input, update, or view expenses. Once this selection is made, the system prompts the owner to enter or modify the necessary information and then stores this data in its database. After the data has been successfully saved, the system returns the owner to the expenses display to show that the changes have been made. If the owner wants to view a report of the business, he simply needs to click on the 'Reports' tab. The system will then present a variety of options for the types of reports that can be generated. The owner can select the desired report and the system will generate it.

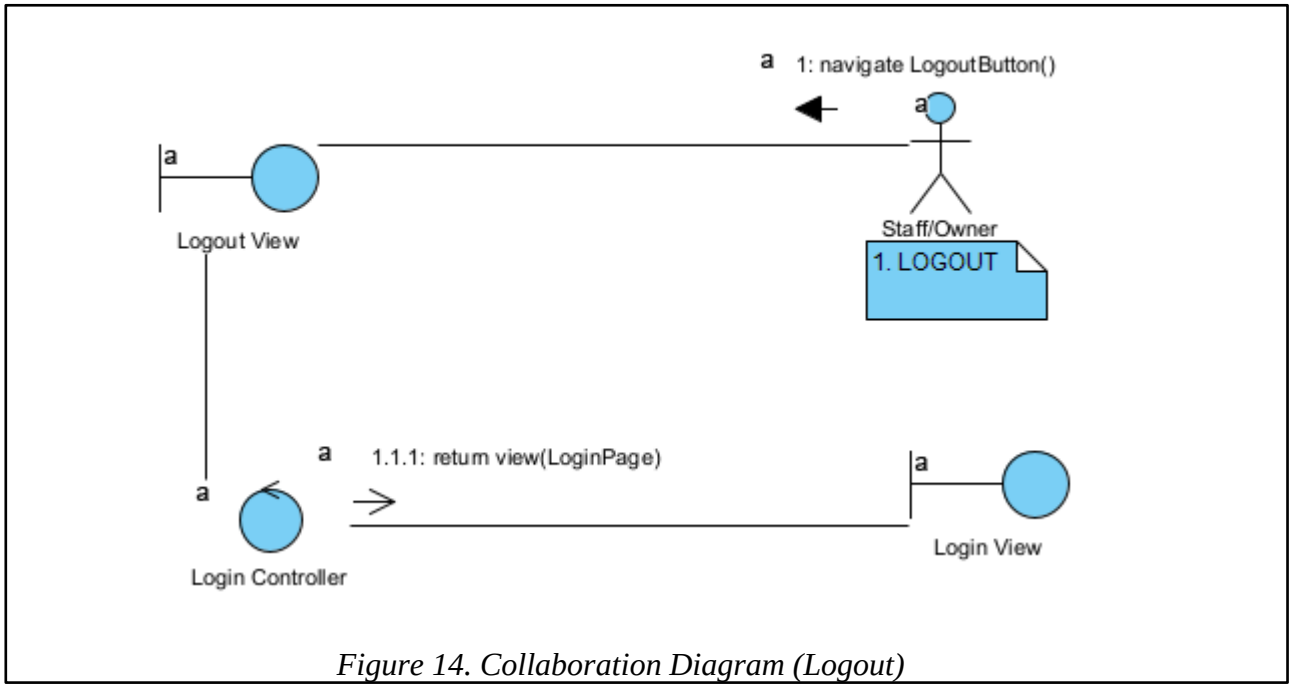


Figure 14. Collaboration Diagram (Logout)

When the actor decides to exit the system, he must click to the sign-out button below. After he click the sign-out button, it will go straight to the log-in screen.

6. Data Models

This section represents the visual process of the database, standardizing how they connect to one another and to the properties of real-world things. This data model includes the entity relationship diagram, which connects the entities and attributes, as well as the class diagram, context diagram, component diagram, and package diagram.

6.1 Entity-Relationship Diagram

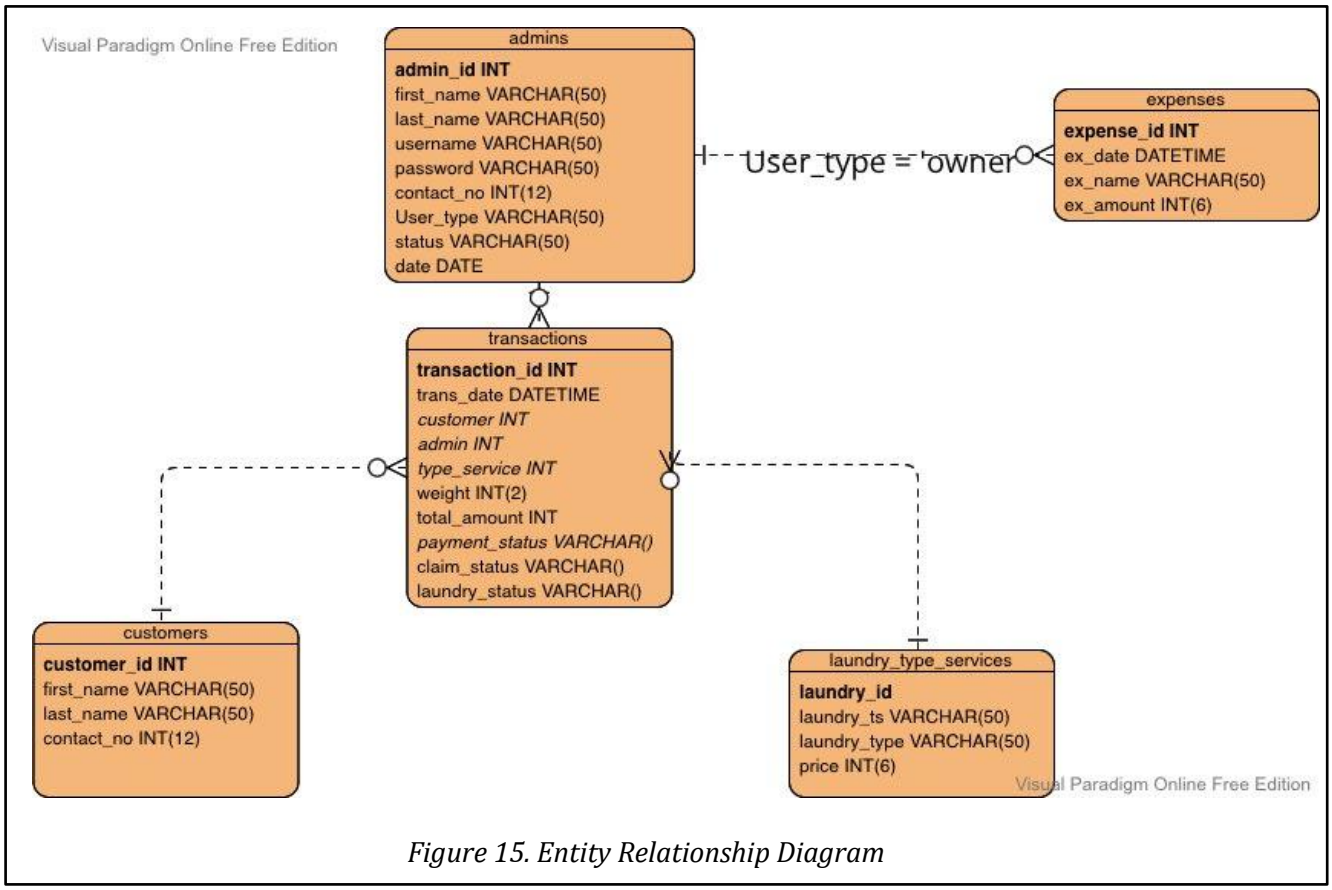


Figure 15. Entity Relationship Diagram

The diagram above represents the link between the entities and attributes, which is how entities in the database share information. The admin has a connection with the employees and the owner, who are the end users of the system. Admin can perform several transactions and only the owner in the admins can generate expenses. The transactions entity is associated to customers, status and the laundry type. The relationship of the transactions in the customer is receiving the customer's data and displaying them on the transactions, as well as the status of the laundry and the laundry type services.

6.2 Class Diagram

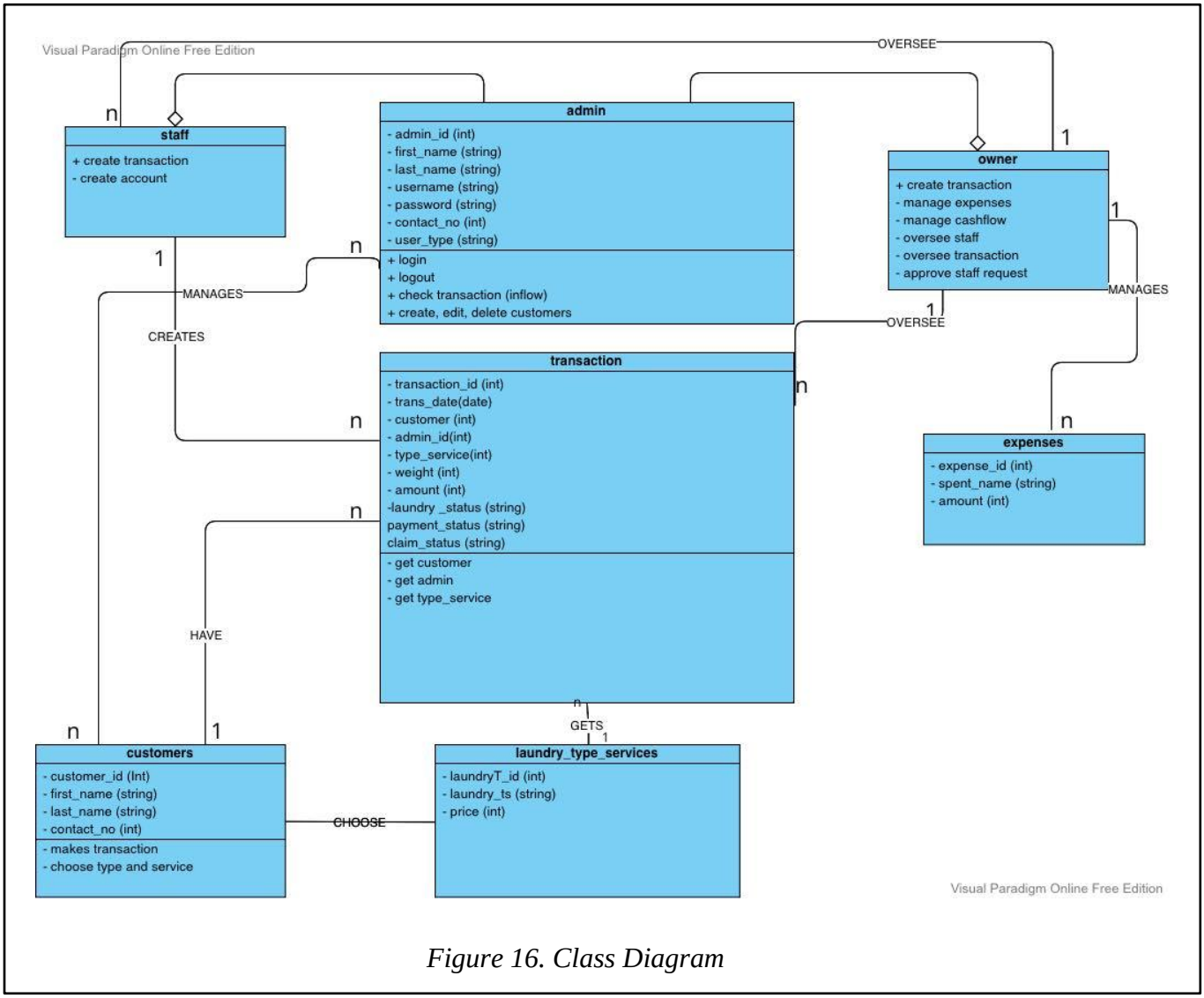


Figure 16. Class Diagram

The diagram above illustrates the attributes and operations in the entities. The admin is the aggregate of the staff and the owner. The owner manages the expenses entity and may also oversee the staff as the staff manages the transactions. The transaction entity contains the information of the customer as well as the laundry service type and the laundry status. Lastly, the customer entity can choose the desired type of laundry services.

6.3 Context Diagram

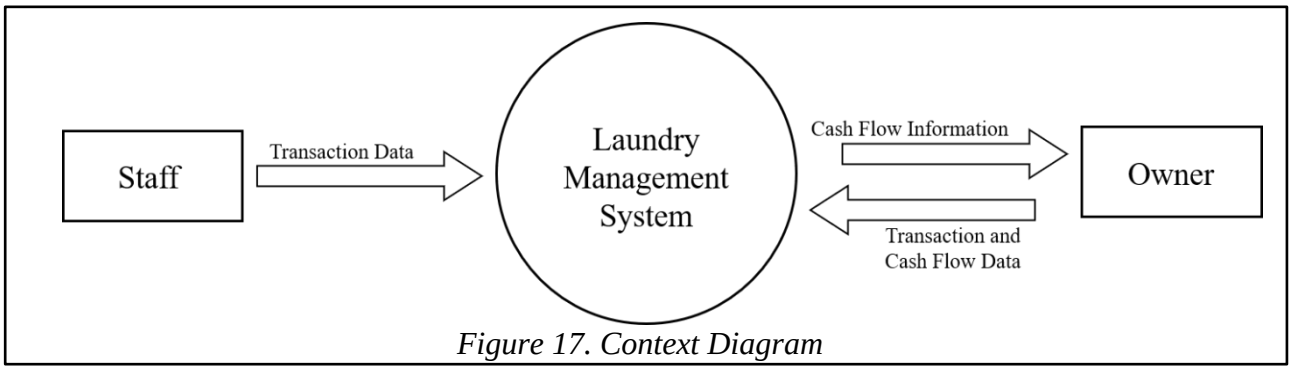


Figure 17. Context Diagram

This diagram shows the relationship that the system has with other external entities. As shown above, the staff members and the owner are the external entities or data sources that can interact with the system, while the system itself represents the processes. The arrows represent the direction of data flow happening between the two, and there are labels to understand better their relationship.

6.4 Component Diagram

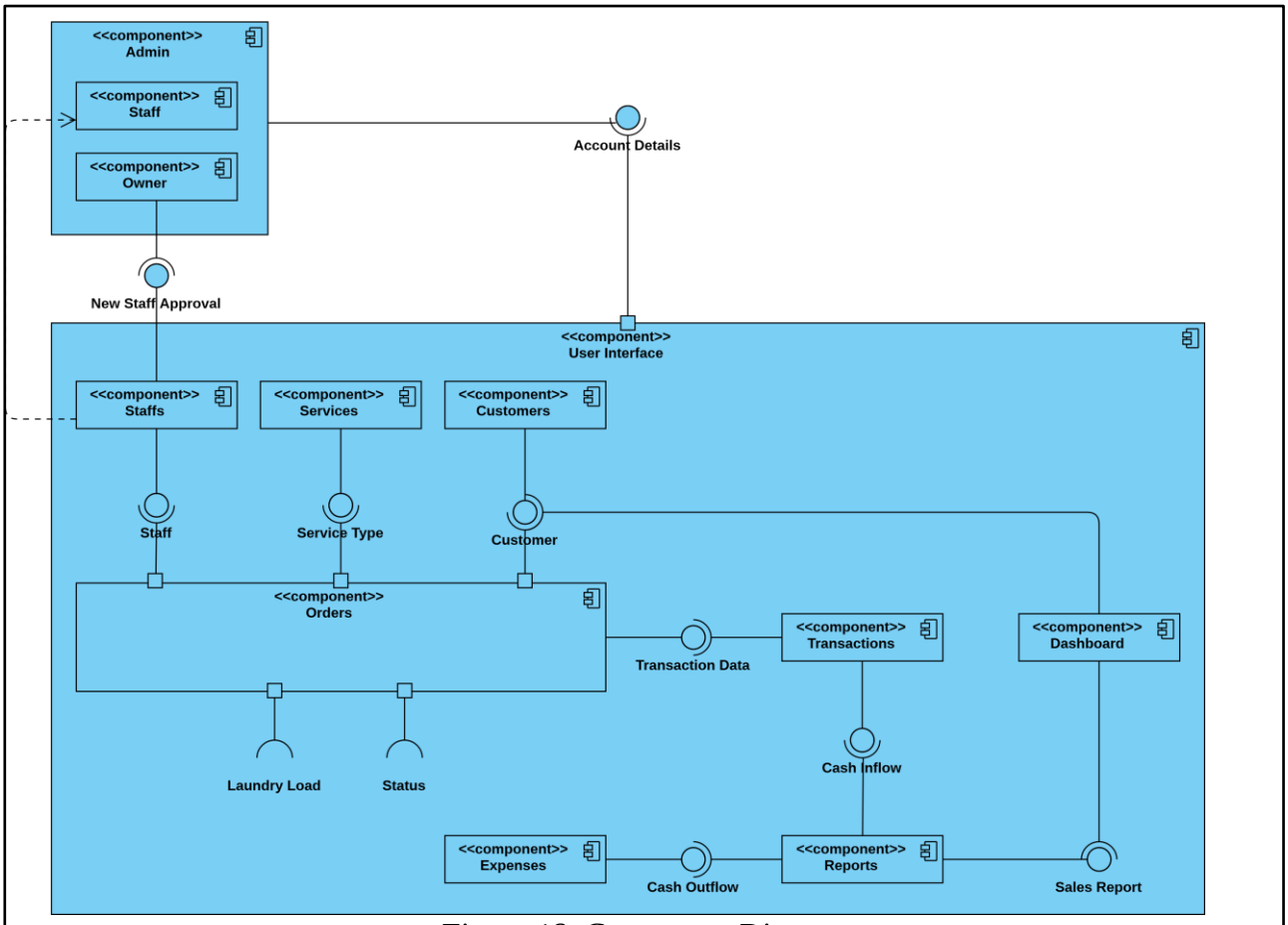


Figure 18. Component Diagram

The diagram above shows the relationship and interactions between components of the system. Components used here are the sections found in the user interface and the admin entity to describe the functionalities of the system. The components are linked by interfaces which are used to show what data is requiring by a component, and which specific component should provide the data.

6.5 Package Diagram

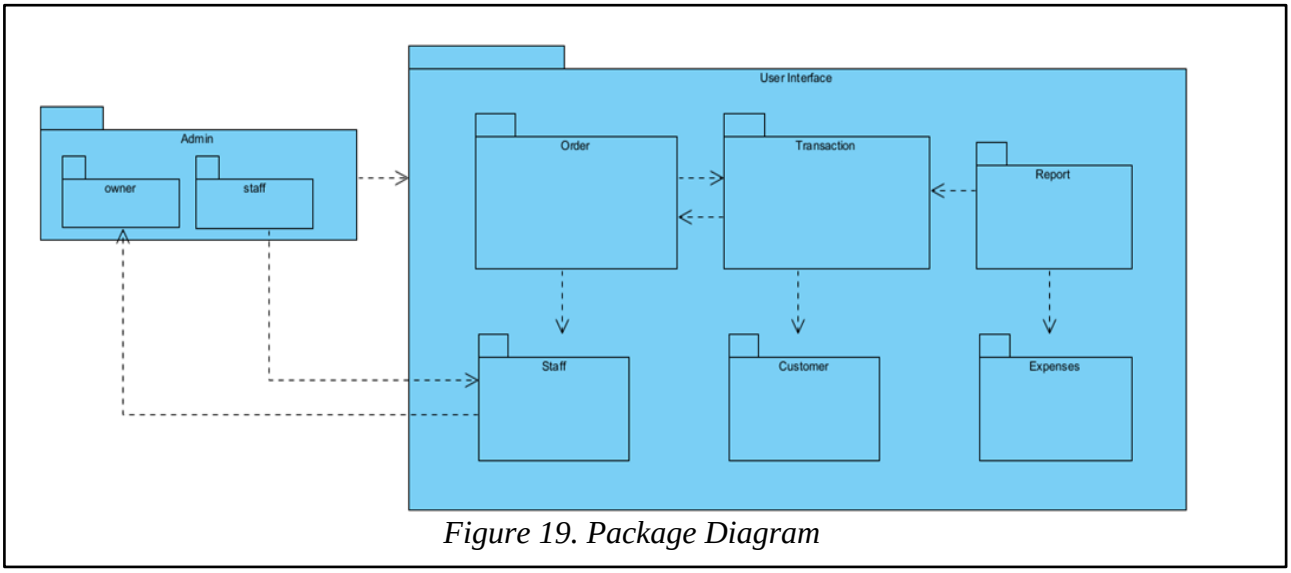


Figure 19. Package Diagram

The diagram above is used to group related classes and interfaces, it shows the relationships between different packages, as well as the classes and interfaces that are contained within each package. In this diagram, packages are represented as rectangles and dependencies between packages are represented as arrows.

7. The System

This section will provide the overall specifications and functional requirements of Laundry Cashflow Monitoring and Management System.

7.1 System Overview

Laundry Cashflow Monitoring and Management System has the following functionalities like those existing laundry management systems or applications out there. The difference is that, this system not only focuses on managing business-related transactions. It is incorporated with a feature to track cashflow of the business depending on a specific time frame.

7.1.1 System Features

This section provides a listing of all the features included in the system. Those features are the set of tasks or actions that the active user can perform while using the system.

7.1.1.1 Create User Account

The user will start from the login page of the system. From there, the user can create new account and input necessary details to create an account. After inputting the name, username, and password, the user must click the 'Create Account' button. This feature must be completed first before accessing the system.

7.1.1.2 Approve/Reject New Users (Staff)

This feature shows the system administration being implemented in the system. Only the owner of the business can accept or reject the new staff account that was created in the signup page. If accepted, the new user can finally login to the system but if the account was rejected, it will be deleted in the database.

7.1.1.3 Login

There is a login page at first to know if the person trying to access the system is the owner or a staff at Miggy's Laundry. The guests or any person who are not related to the laundry business cannot use the system since user accounts and approval from the owner are both needed first. After a successful login, the user will be redirected to the dashboard.

7.1.1.4 Add Order

One of the core features of the system is to add a transaction whenever Miggy's Laundry have customers. The user must be in the 'Orders' tab to create a transaction for that specific customer. This process will identify the services selected and the amount to be paid by the customer. After providing all the necessary inputs, the new transaction can now be saved. The data can be viewed from the 'Transactions' tab of the system.

7.1.1.5 Manage Transactions

A data-table for the list of all the transactions is provided in the transaction records. By managing transactions, the users can update the initial statuses selected in a specific order such as payment, claim, and laundry status. Upon clicking the 'Edit' button, the user will be redirected into the edit transaction page to update the data. They can also delete the transactions data by clicking the checkboxes inside the table.

7.1.1.6 Manage Customers

Before making a transaction, the customer details must be existing first in the database. Hence, there is an add customers feature to enter the details of the customer. After entering

the details, the user can click the 'Submit' button to save it in customer records. The users can edit the information by clicking the 'Edit' button in the table if the details were typed incorrectly. They can also delete the customer data by clicking the checkboxes inside the table.

7.1.1.7 Manage Services

Another data necessary for creating an order is the service and laundry type availed by the customer. The user chooses from the predefined services in the system, but the owner can also create a new one if needed. In terms of editing the services, like for example, there will be an increase or decrease in the price, the owner can freely change the prices in a specific service offered. It also includes a delete feature to delete the services that was on the list.

7.1.1.8 Manage Expenses

The system also offers a feature about managing the expenses. In the 'Expenses' tab, the owner can list down the expenses made in the business in that day. After the adding the expenses, it will reflect on the table below with its corresponding date created. Deleting expenses is also possible by using the 'Delete' button above.

7.1.1.9 Monitor Cash Flow

The system was specifically designed to meet one of the requirements of the client, which is to monitor the cash flow of the business. This feature will include the data created from the transactions and expenses section placed together in the 'Reports' tab. If the owner wants to check the sales of the business, the data from the transactions represent the sales, same goes with the expenses. Subtracting the expenses from the sales will provide the profit of the business. It can be an overall profit, daily profit, or a specific range of date for profit. The overall cash flow is automatically displayed already but the owner can change it by providing a start date and end date using the date filter feature. For the daily report, the system will fetch only the sales and expenses based on the current date and then displayed it. The owner must use the daily report feature every day to store the daily sales, expenses, and profit in the summary report table. In addition, to interpret the data in the 'Reports' section easily, the owner can simply view the line chart located in the dashboard.

7.1.1.10 Logout

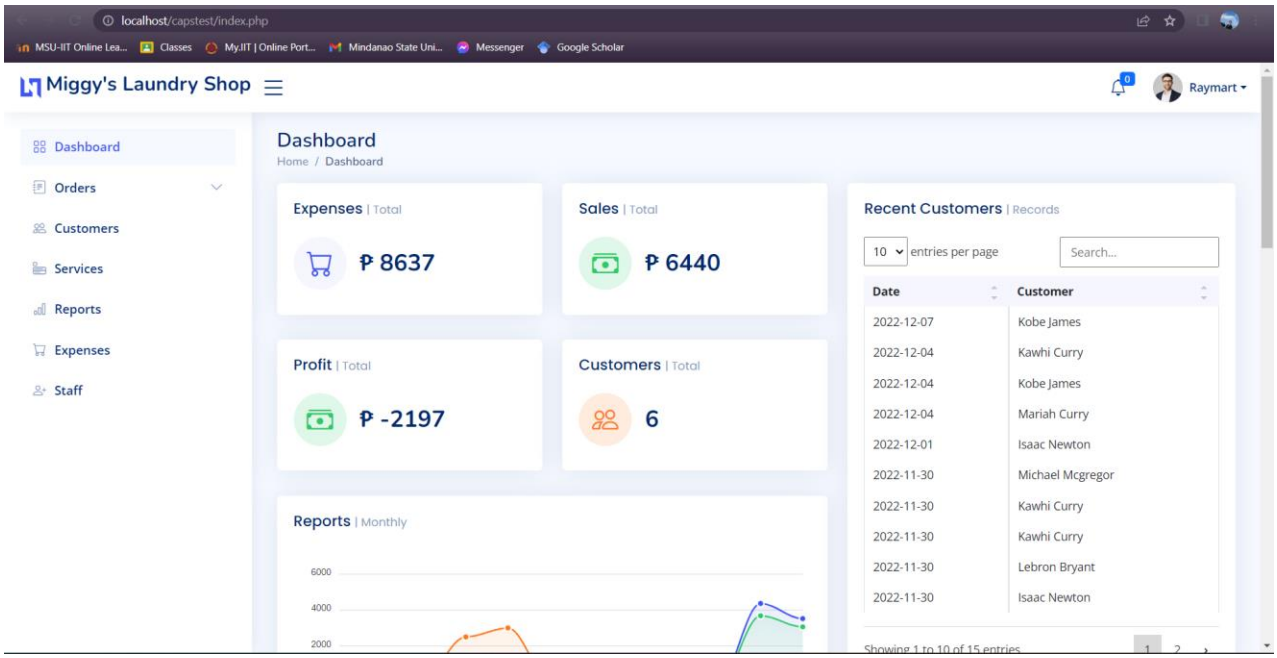
Once the users are done using the functions of the system, they can leave the system by logging out their accounts. It is an important feature especially from the owner side to avoid data breach from unwanted people. Once logging out, the changes made while using the system are already saved.

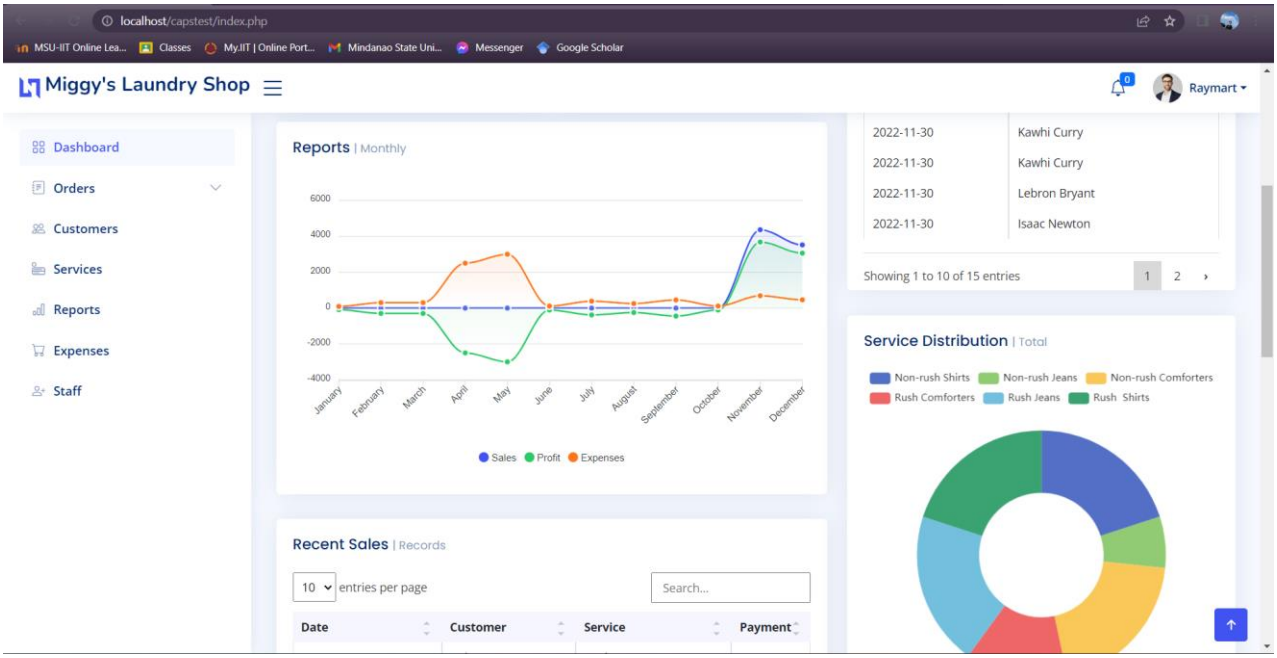
7.1.2 System Functions

This section provides a listing of all the functions that must be performed or delivered by the system together with a description for each. It also includes screenshots to help visualize the function being described. Most of the functions listed came from the side bar of the system and some of them are part of the navigation bar on the top.

7.1.2.1 Dashboard

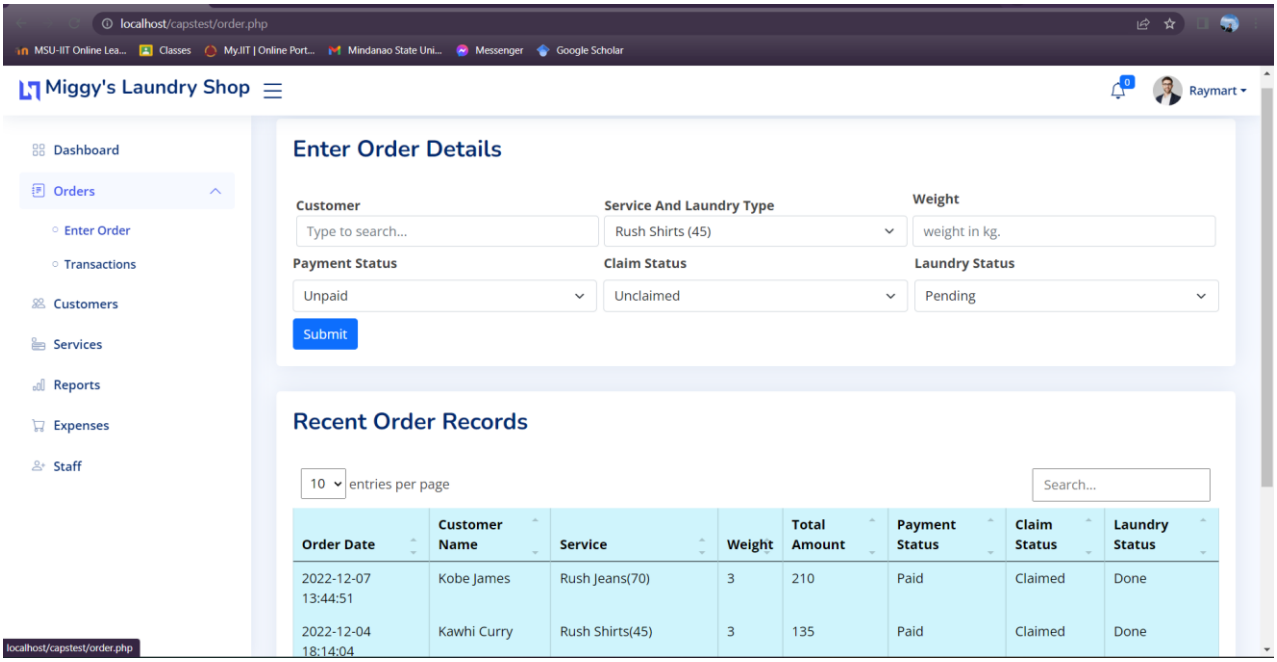
The page where all of the users will be redirected once successfully logging in. It consists of different data visualization models such as line chart, pie graph, and data-tables to interpret the business data saved in the system. The line chart shows the summary of sales, expenses, and profit within a year. Then, the pie graph displays the distribution of services that are being availed. The data-tables show the records of recent customers, sales, and expenses. Lastly, there are also cards provided to know the overall sales, expenses, profit, and customers of the business.

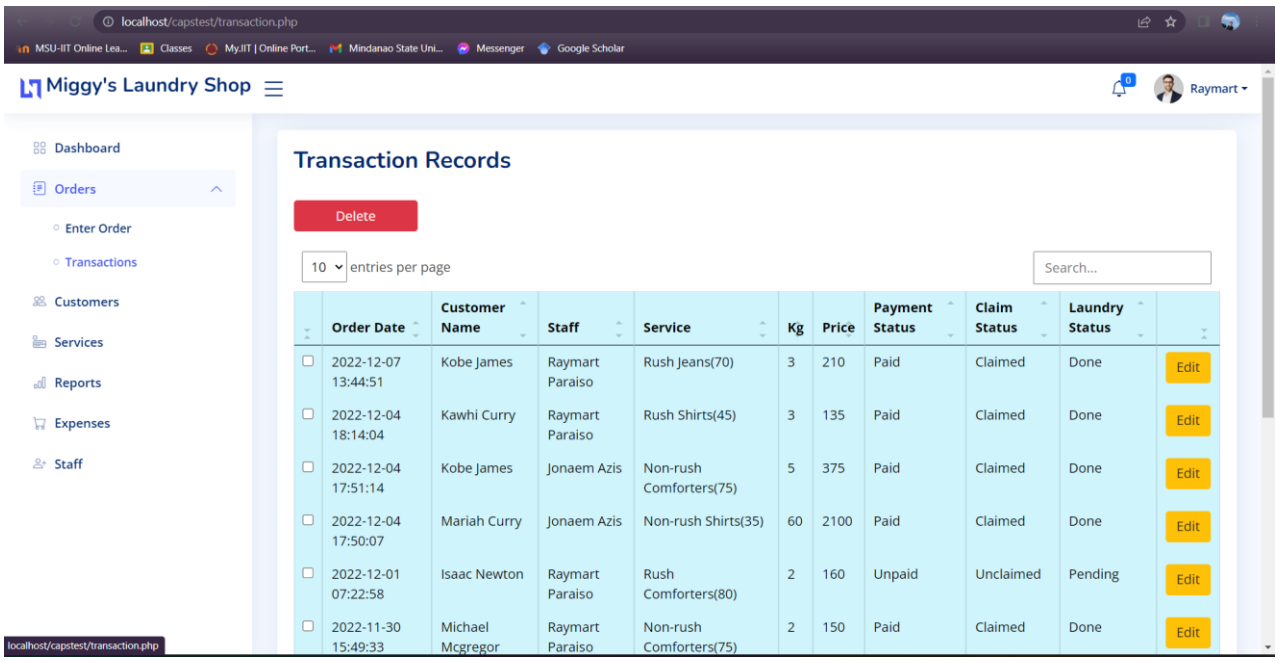




7.1.2.2 Orders

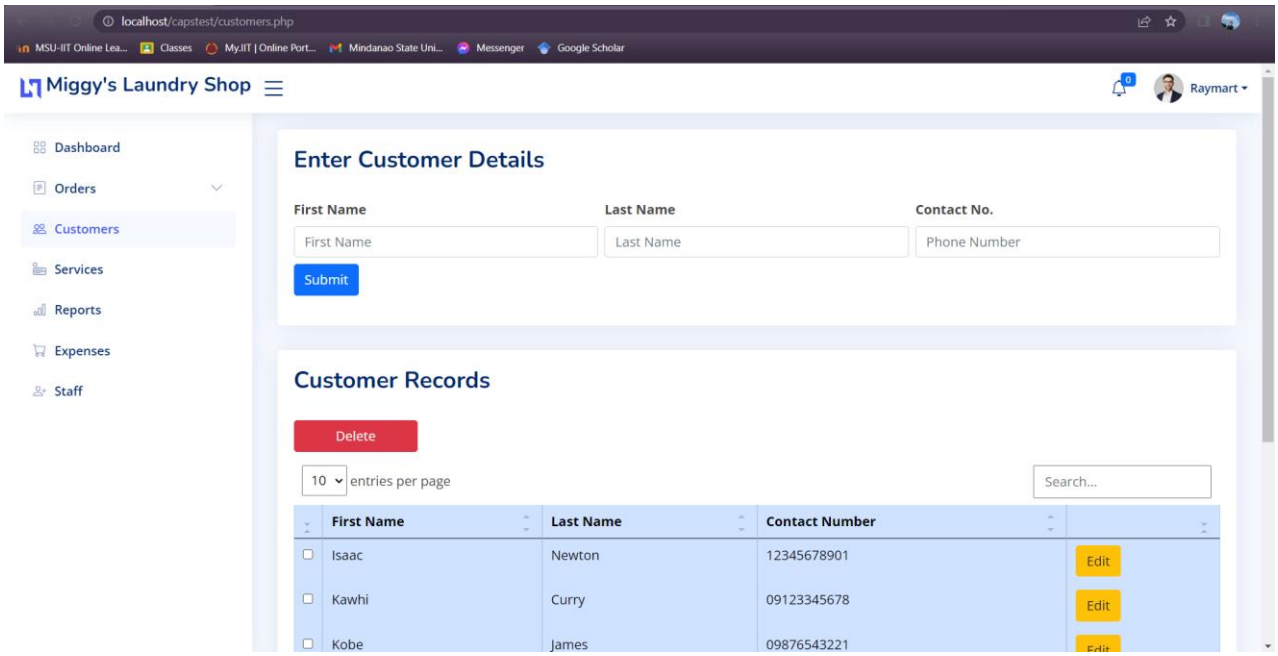
This tab on the sidebar shows how the users can add and manage transactions. It has a drop-down function to choose if there is a new transaction (Enter Order) or a certain transaction needs to be updated (Transactions). Inside the 'Enter Order', the user can start a transaction by providing details like customer name, laundry load, service and laundry type availed. The users are responsible on deciding the statuses of the transaction depending on the scenario. The data will be saved and displayed on 'Transactions'. In this tab, the users can update the initial statuses selected before. After that, the data will be updated. In addition, there is also a delete button on the top to delete one or multiple transactions on the list. The table also has functionalities such as pagination and search bar to easily navigate the data.





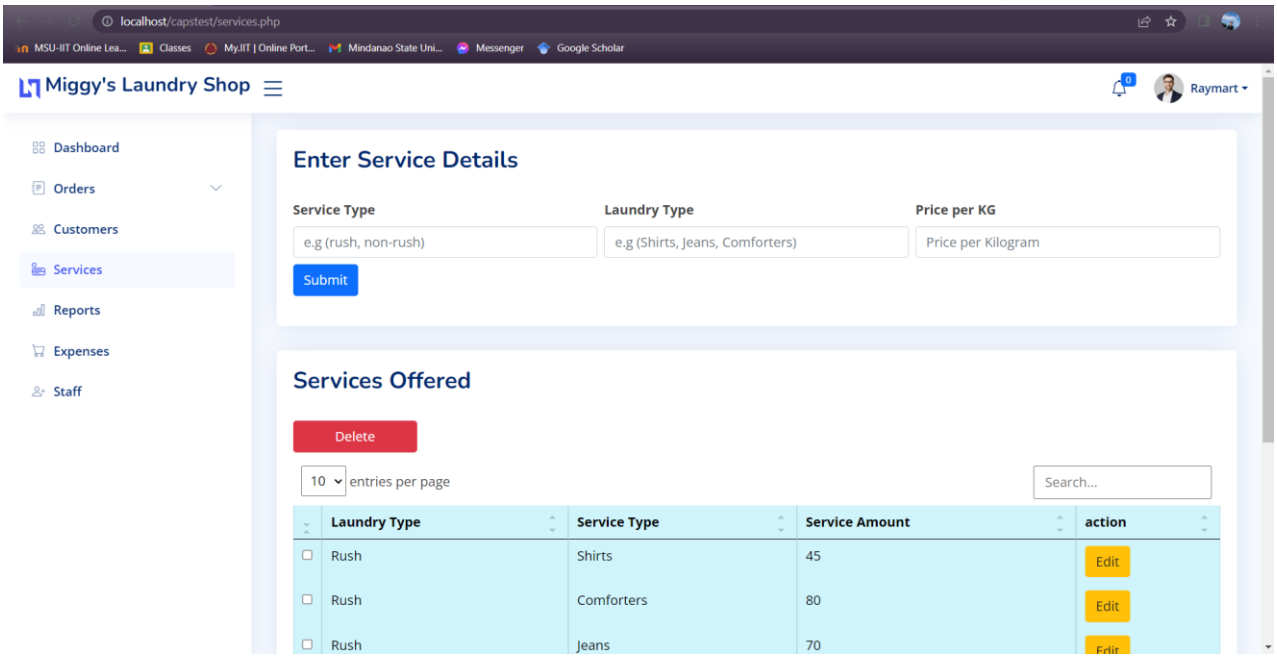
7.1.2.3 Customers

The section where the users can add, edit, and delete customer details in the system. Customer details include the first name, last name, and the contact number of the customer. It also provides a table below to show the list of all the customers in the database. Like the other data-tables, it also has pagination and search bar.



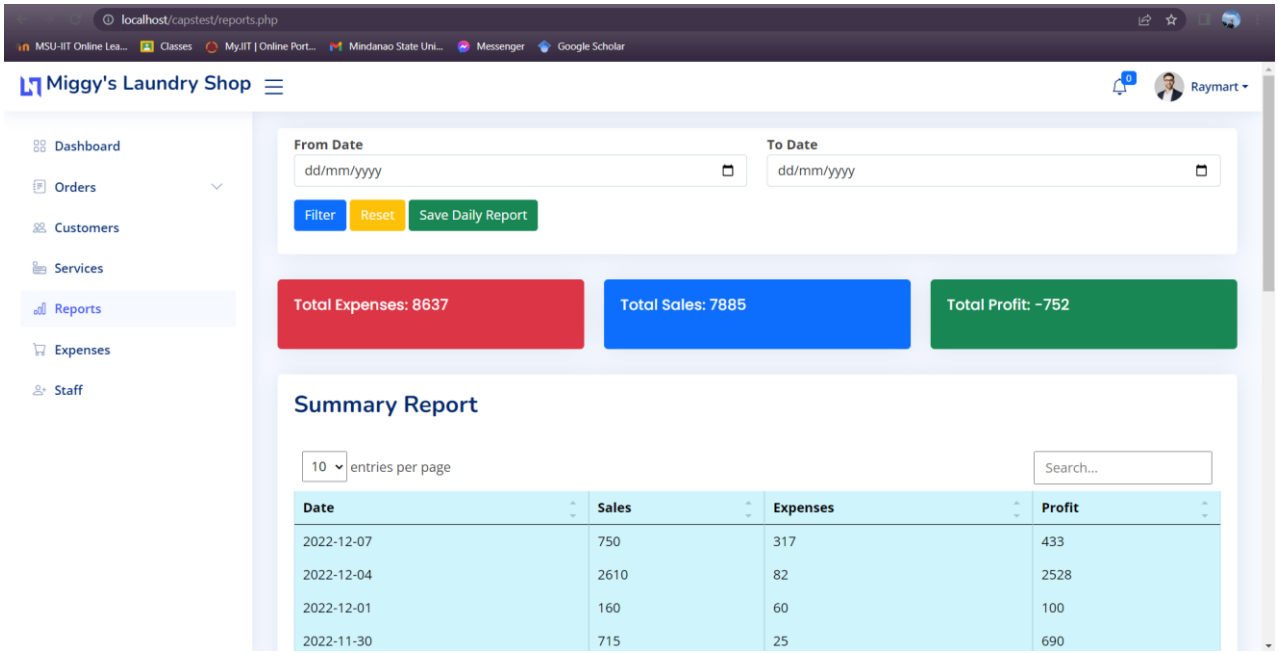
7.1.2.4 Services

Provides a list of all the services offered by the laundry shop. The user can add another service if the management plans to offer new services in the future. The default services are listed on the data-table wherein it shows the laundry type, service type, and the amount per services. The service type can be categorized as rush which is claimable for the span of less than 24 hours, and non-rush which is claimable after 3 days. The laundry type on the other hand can be shirts, jeans, comforters, etc. depending on the type of material of the laundry. Lastly, the price per kilograms of those service. The data-tables also have pagination and search bar while the user can also delete and edit the services offered by the laundry shop.



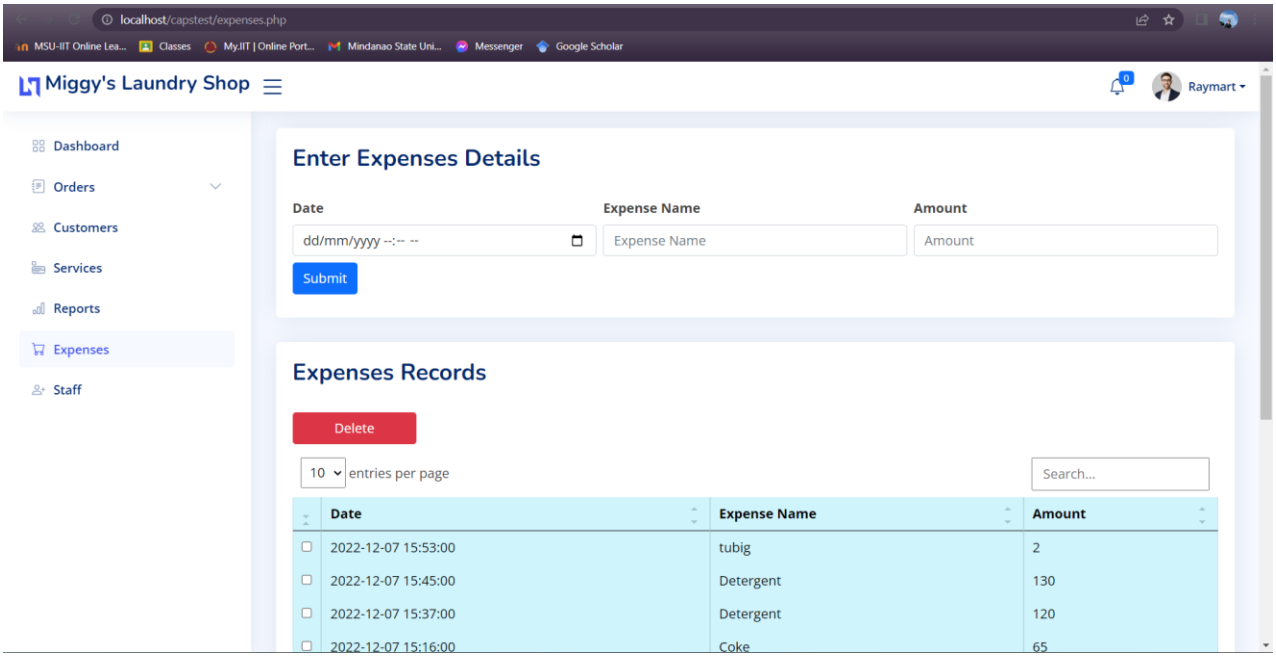
7.1.2.5 Reports

This section provides all the necessary data for monitoring the cash flow feature. First, it has a date filter wherein the user can pick a 'start date' and 'end date' and after that the data-tables below will only show the expenses, sales, and the summary report for that timeframe. If no date was chosen or simply clicking the 'reset' button, the data-tables will show the overall summary report, sales and expenses. The user can navigate the data easily using pagination and search bar again on tables. Next, the 'Save Daily Report' button which triggers a modal to simply save the overall sales and expenses for that day only. The user must use the button to save the daily report before closing the laundry shop. In addition, there are also cards displayed to basically shows the overall amount of expenses, sales, and profit. Note that these cards are reflected in the dashboard using line chart.



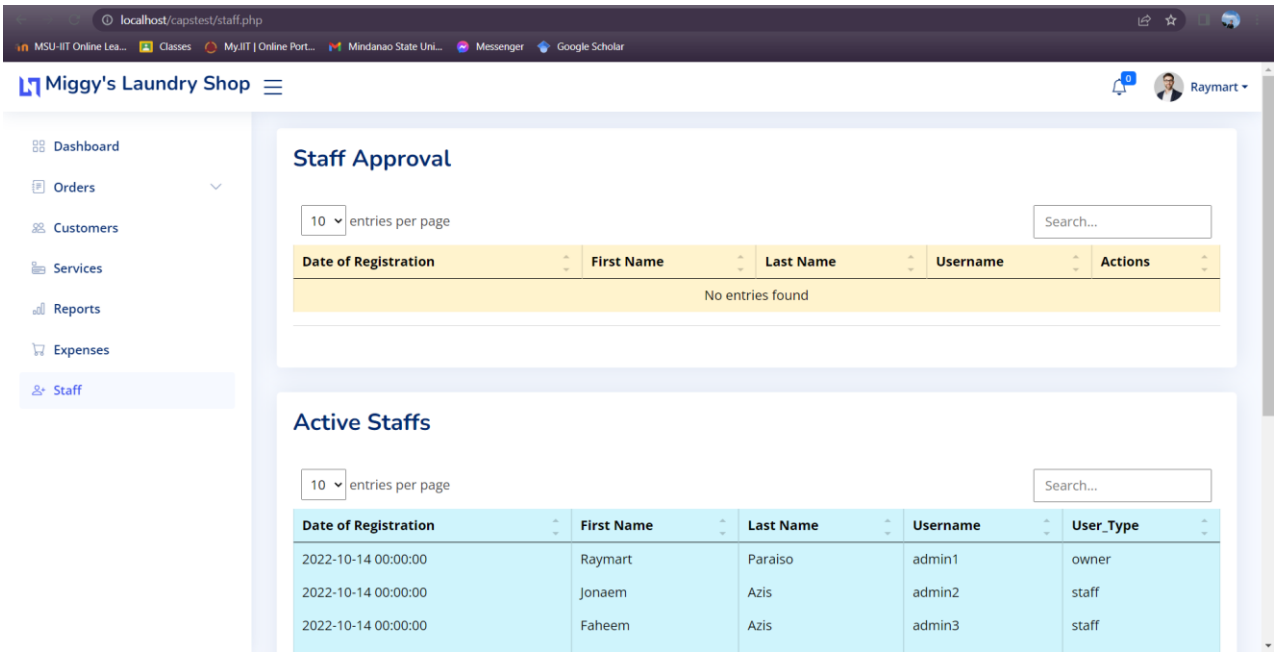
7.1.2.6 Expenses

The 'expenses' function allows the user to list the cash outflow in the business. The user can add, edit, and delete expense details. It includes the date, the name of the expense, and the amount. It also provides a table below to show the list of all the expenses made.



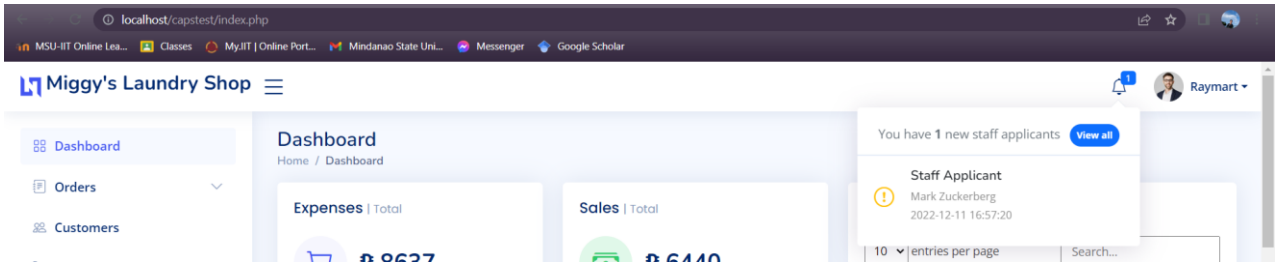
7.1.2.7 Staff

This section consists of list of the active staffs in the business and the list for the news staffs that need approval. For every staff who will create a new account in the system, these account details will display in the data-table of 'new staff approval' feature. From here, the user can either accept or reject the account made. After accepting, it will be added on the list below. The staff details consist of date of registration, first name, last name, username, and user type.



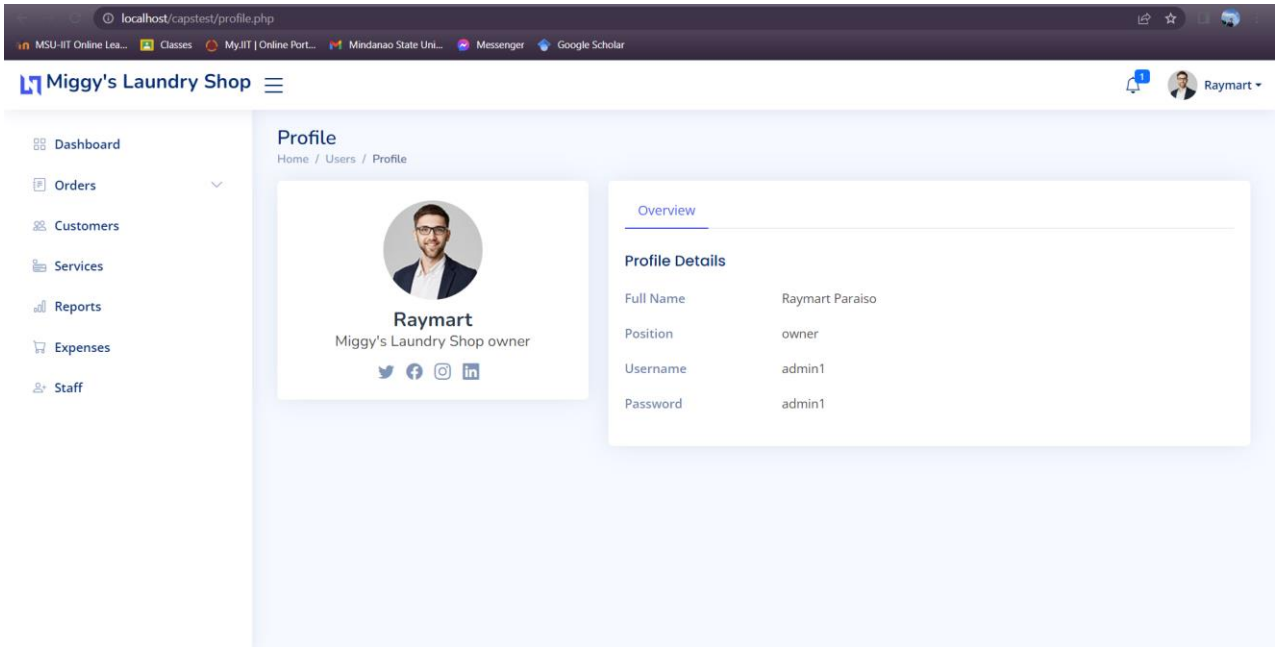
7.1.2.8 Notifications

The bell icon located on the upper-right side of the navigation bar shows the notifications for new staff applicants. It displays the number of staffs that has been created in the signup page. Clicking the 'View All' will redirect the user to the staff section.



7.1.2.9 My Profile

This can be found after clicking the dropdown feature beside the name of the current user. The profile section will display the photo of the user and some user account details such as full name, position, username, and password.



8. Other Nonfunctional Requirements

8.1 Performance Requirements

Laundry cashflow monitoring and management system software is helpful to manage the various aspects of a laundry business, such as managing transactions, processing orders, and monitoring cash flow. In terms of performance, the specific requirements for each functional requirements and features will include the response time and workload of the system**.** The system should be able to handle high volume of transactions and data without experiencing significant slowdowns or errors. In addition, the system should be user-friendly with a clear and intuitive interface that makes it easy for employees to use.

8.2 Safety Requirements

Laundry cashflow monitoring and management system must have requirements that are necessary to prevent possible loss, damage, or harm that could result from the use of this system. These requirements are considered as safety requirements which include the following:

Backup systems. The system will contain multiple backup systems in a separate location or specific place to ensure that it can continue to operate even if one part of it fails. This can help prevent data loss and downtime, which can be costly and inconvenient.

User error. The system must be designed to minimize the potential for user error, which can cause loss, damage, or harm. This involves the provided clear instructions and user-friendly interfaces, as well as implementing safeguards to prevent users from making mistakes.

Security breaches. The system must be designed to prevent unauthorized access and protect against security breaches. This involves suggesting strong passwords for admin and user accounts, and encryption.

Overall, laundry cashflow monitoring and management system should have a range of measures in place to prevent possible loss, damage, or harm that could result from its use. These measures can help protect the system, the data it holds, and the users who rely on it.

8.3 Security Requirements

It is important for laundry cashflow monitoring and management system to have strong security and privacy measures in place to protect the sensitive information it holds and ensure that it is used in an appropriate manner. The requirements regarding security and privacy for a laundry cashflow monitoring and management system include the following:

Encryption. Sensitive information, such as customer data and payment information, are encrypted to protect it from being accessed by unauthorized parties. The details about customer and other sensitive information included are safe inside the management.

Access controls. The system has strict access controls in place to limit who can view and modify sensitive data. In this case, the system has two different versions depending on the user type of user accounts. The owner is considered as the superuser of the system wherein all of the system functions and features will be available to the owner. On the other hand, the staffs will be only having three main functions such as orders, customers and the dashboard.

Privacy policies. The system has clear and comprehensive privacy policies in place to inform users of how their data will be collected, used, and shared.

Implementing strong security and privacy measures is crucial for ensuring the safety and integrity of a laundry management system. These measures can help protect the system and the sensitive information it holds, as well as provide users with confidence and peace of mind.

8.4 Software Quality Attributes

Laundry cashflow monitoring and management system also offers additional quality characteristics for its end-users. Listed below are the unique quality attributes that the system has.

Usability. One thing to consider is the usability of the system. For example, it gives feedbacks to the users once clicking a certain button. These feedbacks include confirmation modal and sweet alert messages after performing operations like create, read, update, and delete. It is designed to meet the client's requirements while being user -friendly at the same time.

Reusability. The system was intended to develop initially for Miggy's Laundry shop only. As stated in the objectives of this project, it will provide the micro-scale business a digitalized platform instead of their traditional methods. However, the system design and functionalities can be used again for other laundry businesses that offers the same service as Miggy's Laundry shop.

9. Implementation Issues

Laundry Cashflow Monitoring and Management System was developed from using different programming languages in software developing. To program the frontend of the system, the developers used Hypertext Markup Language (HTML), Cascading Style Sheets (CSS), JavaScript (JS), and Bootstrap 5, Sweet Alert, and Apex Charts for the framework. The backend programs used are PHP and MySQL for relational database. Moreover, most of the problems that the developers encountered are rooted on the frameworks that are used, aside from it is not fully customizable, it is not compatible to other certain type of framework.

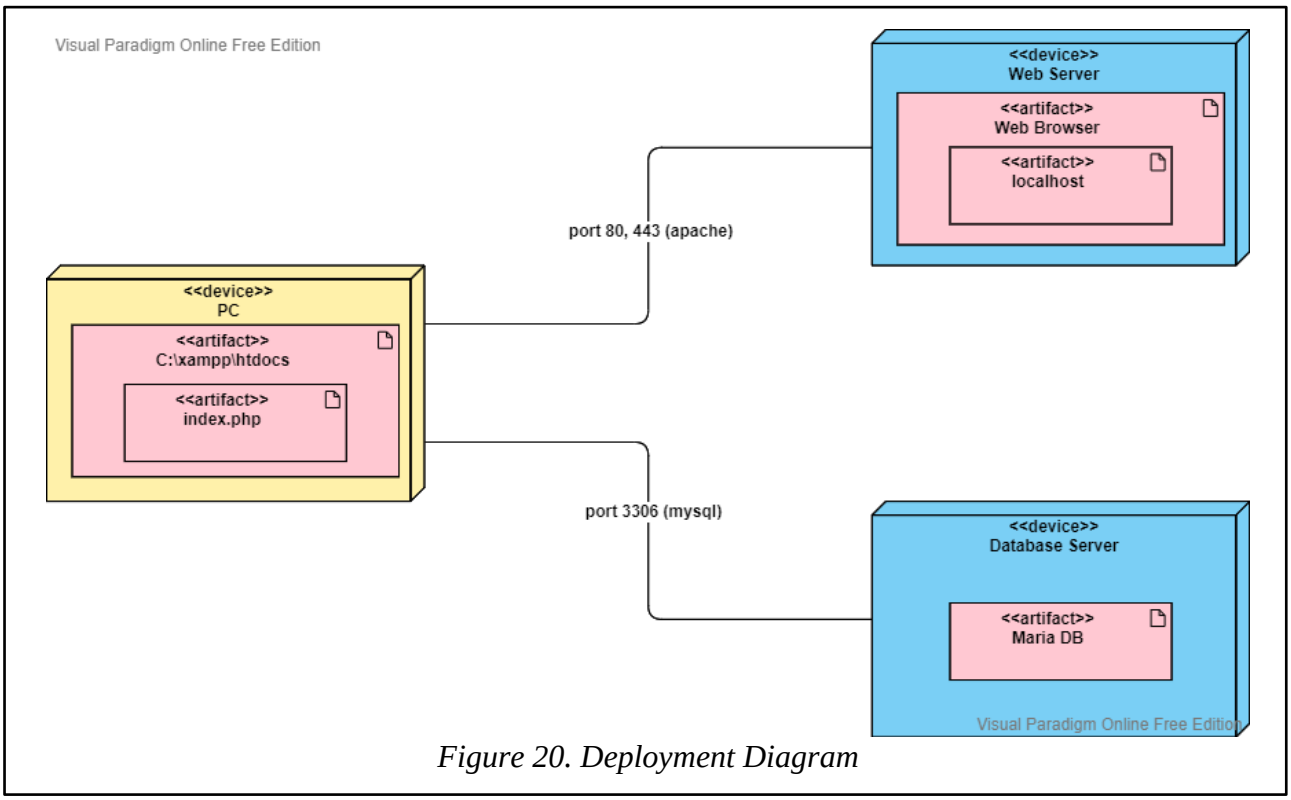


Figure 20. Deployment Diagram

The diagram above shows the visualization of the system architecture. It includes the physical software and hardware that that was connected through ports. The nodes represent the hardware and software element used to make the system function. On the other hand, the artifacts are the elements such as source files and output files that can be found within the node.

10. Results and Discussion

This section provides the results and discussion. In testing phase, the developers use the System Usability Scale (SUS) by John Brooke (1986). It is a tool to evaluate quickly and easily the usability of a product or system. it consists of 10 questions that are answered on a 5-point Likert scale, with higher scores indicating greater usability. Thus, *strongly disagree* (1 point), *disagree* (2 points), *neutral* (3 points), *agree* (4 points), *strongly agree* (5 points). The questionnaires are given to the future users of the system, the owner and staffs of Miggy's Laundry. The results of the testing phase are tabulated below:

No.	Statements	Usability Score		
		User 1	**User 2**	**User 3**
1	I think that I would like to use this system frequently.	5	5	4
2	The system looked complicated to me.	1	2	2
3	I thought the system was easy to use.	4	5	4
4	I believe that in order to utilize this system, I would require the assistance of a technical person.	4	4	4
5	I found the different functions in this system were well integrated.	5	5	5
6	I thought there was too much inconsistency in this system.	1	1	1
7	I would imagine that most people would learn to use this system very quickly.	4	4	5
8	I found the system very unmanageable to use.	1	2	1
9	I felt very confident using the system.	4	4	4
10	I needed to learn a lot of things before I could get going with this system.	2	2	2

Table 5. Usability score of users for each item.

To solve for the final system usability score for each user, the simple and quickest steps were followed:

Calculate,

- X = Sum of the points for all odd-numbered questions – 5
- Y = 25 – Sum of the points for all even-numbered questions
- SUS Score = (X + Y) x 2.5

Computing the tallied scores of users by this method will get a final value of 82.5, 80, and 80 respectively. Based on research, the average SUS score is 68. If the score is under the number, then it means that there are issues about usability on the system. Otherwise, the system is acceptable by the user. Thus, it shows that the overall functionalities and features of the developed system was accepted by Miggy's Laundry Shop.

11. Summary and Conclusion

The goal of this project was to develop a laundry cashflow monitoring and management system for Miggy's Laundry Shop that is currently using paper-based management system. In order to achieve this goal, the developer used the SDLC prototype model, (Martin, 2022) as the basis in the development process.

Through the effort of the developers, they have successfully developed a web-based application - laundry cashflow monitoring and management system through constant communication and understanding with the client's requests and needs, along with the SDLC prototype model brings about all the needed features of the client realized within the system.

Furthermore, the system has been well-tested by the users (client along with her staffs) and each feature is thoroughly scrutinized. In testing, the developer used the System Usability Scale (SUS) by John Brooke to determine if the system is acceptable by users. The computed tallied scores of users using the given method got a final value of 82.5, 80, and 80 respectively. The total average acceptability score is 80.83, which has an interpretation grade of good and accepted. Thus, it shows that the overall functionalities and features of the developed system were accepted by Miggy's Laundry Shop. Since the testing was a success, the developer is determined to enhance and refine the system before implementing it in the Miggys Laundry shop.

12. Recommendations

Based on our analysis of the current system and the requirements of the business, we recommend implementing the following changes to improve the efficiency and effectiveness of the system:

- Implement a secure, online platform for tracking and managing cashflow. This will allow users to easily access and update financial information from any device with an internet connection.
- Implement real-time tracking of income and expenses. This will provide users with up-to-date information on the financial health of the business and allow them to make informed decisions about managing cashflow.
- Implement a system for tracking and managing inventory. This will help users ensure that they have the necessary supplies on hand to meet customer demand and reduce the risk of stock-outs.
- Provide help settings to assist users in using the system. This will help ensure that they can use the system without requiring assistance from the developer.
- Implement a fully-customizable charts that will help the users to pick a certain year showing the year's data.

Overall, these recommendations will help improve the efficiency and effectiveness of the laundry cashflow monitoring and management system and support the growth and success of the business.

Appendix A: Glossary

This section provides the alphabetical list of terms or words related to the project, with brief explanations.

Cash Flow. In this project, this is the total amount of money being transferred into and out of Miggy's Laundry business.

Daily Report. It pertains to the summary of total sales, expenses, and profits of Miggy's Laundry shop every day.

Developers. The people behind the development of Laundry Cash Flow Monitoring and Management System.

End Users/Client. In this project, the staff and owner of Miggy's Laundry are considered as the end users or the client of the system.

Laundry Cash Flow Monitoring and Management System. It pertains to the whole digitalized system that was developed based from the requirements of the project.

Miggy's Laundry. Simply, the client of the project. It is a micro-scale enterprise located at Tibanga, Iligan City. Currently, it has two staffs and is being supervised by the owner.

Paper-based Management System. It describes the current method used by Miggy's laundry in managing business-related transactions. It involves the use of sales report paper to write and save business data.

Web-based Application. The type of application program that is stored on a specific web server and delivered through a browser interface.

Appendix B: Database Schema

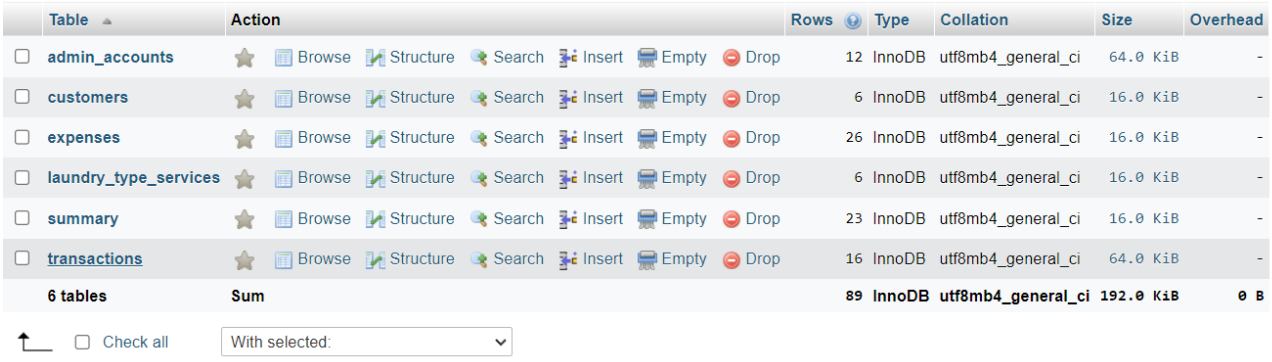
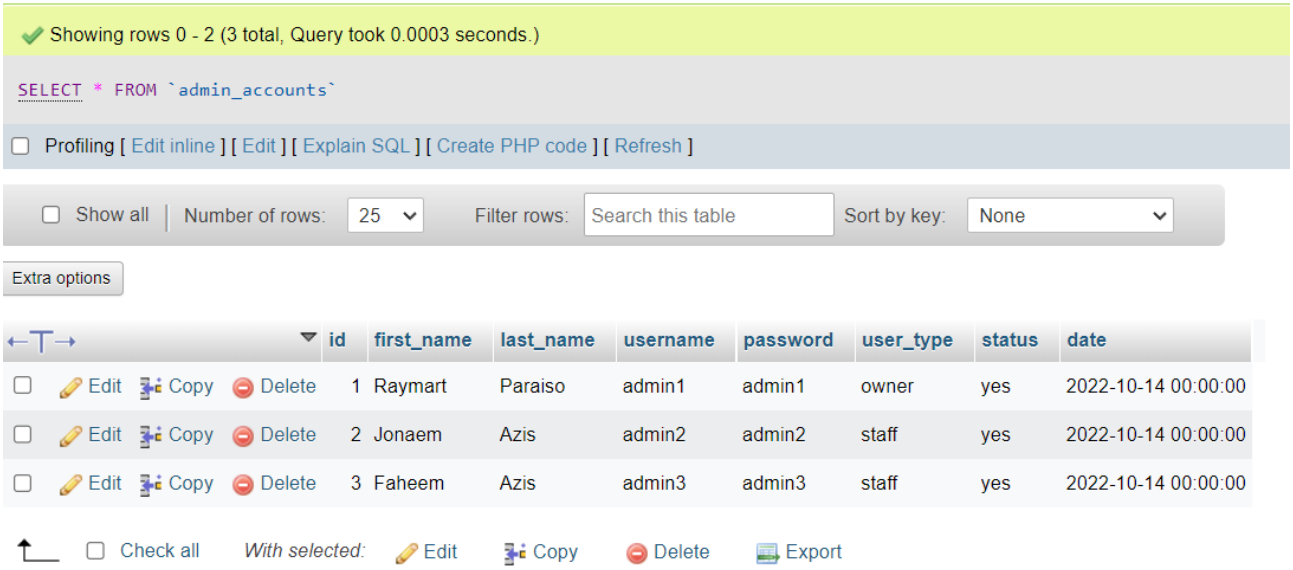


	Table	Action	Rows	Type	Collation	Size	Overhead
☐	admin_accounts	Browse Structure Search Insert Empty Drop	12	InnoDB	utf8mb4_general_ci	64.0 KiB	-
☐	customers	Browse Structure Search Insert Empty Drop	6	InnoDB	utf8mb4_general_ci	16.0 KiB	-
☐	expenses	Browse Structure Search Insert Empty Drop	26	InnoDB	utf8mb4_general_ci	16.0 KiB	-
☐	laundry_type_services	Browse Structure Search Insert Empty Drop	6	InnoDB	utf8mb4_general_ci	16.0 KiB	-
☐	summary	Browse Structure Search Insert Empty Drop	23	InnoDB	utf8mb4_general_ci	16.0 KiB	-
☐	transactions	Browse Structure Search Insert Empty Drop	16	InnoDB	utf8mb4_general_ci	64.0 KiB	-
	6 tables	Sum	89	InnoDB	utf8mb4_general_ci	192.0 KiB	0 B

Check all With selected:

Appendix B.1: Database Entities



Showing rows 0 - 2 (3 total, Query took 0.0003 seconds.)

```
SELECT * FROM `admin_accounts`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

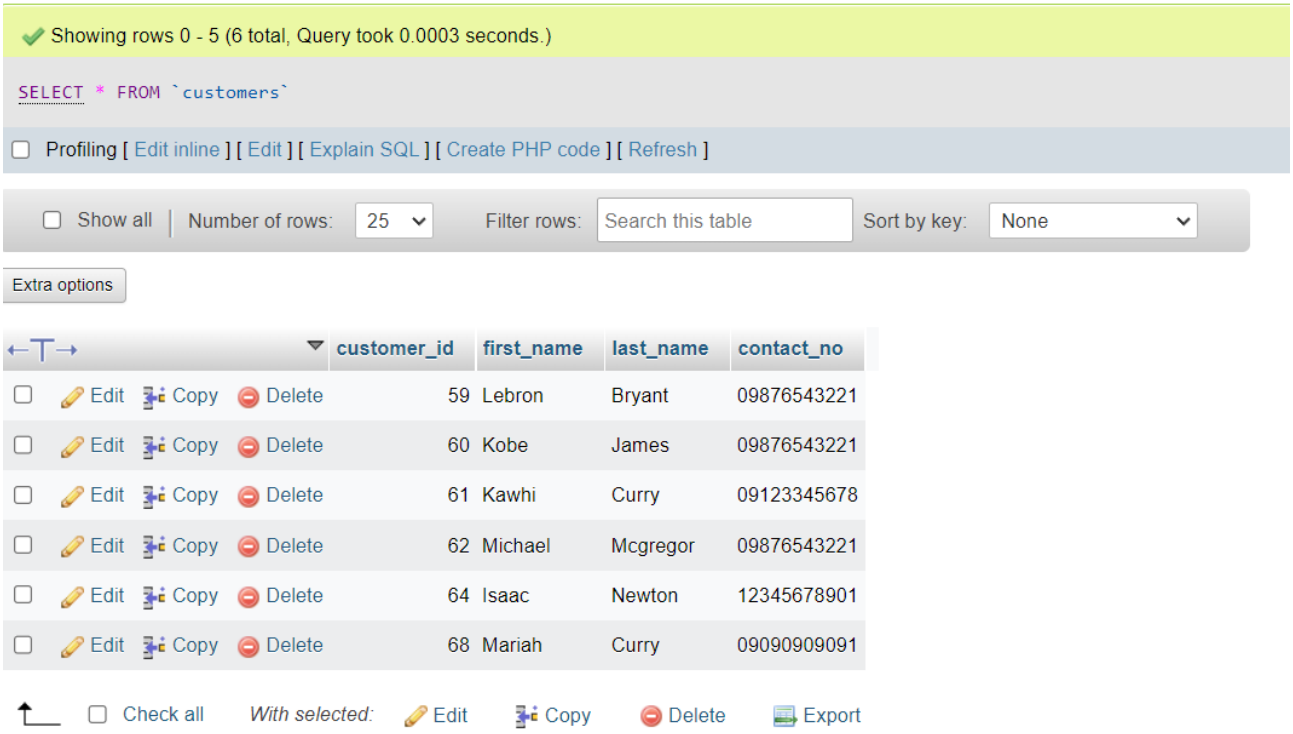
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Extra options

	id	first_name	last_name	username	password	user_type	status	date
☐ Edit Copy Delete	1	Raymart	Paraiso	admin1	admin1	owner	yes	2022-10-14 00:00:00
☐ Edit Copy Delete	2	Jonaem	Azis	admin2	admin2	staff	yes	2022-10-14 00:00:00
☐ Edit Copy Delete	3	Faheem	Azis	admin3	admin3	staff	yes	2022-10-14 00:00:00

Check all *With selected:* Edit Copy Delete Export

Appendix B.2: Data in 'admin_accounts' Table



Showing rows 0 - 5 (6 total, Query took 0.0003 seconds.)

```
SELECT * FROM `customers`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

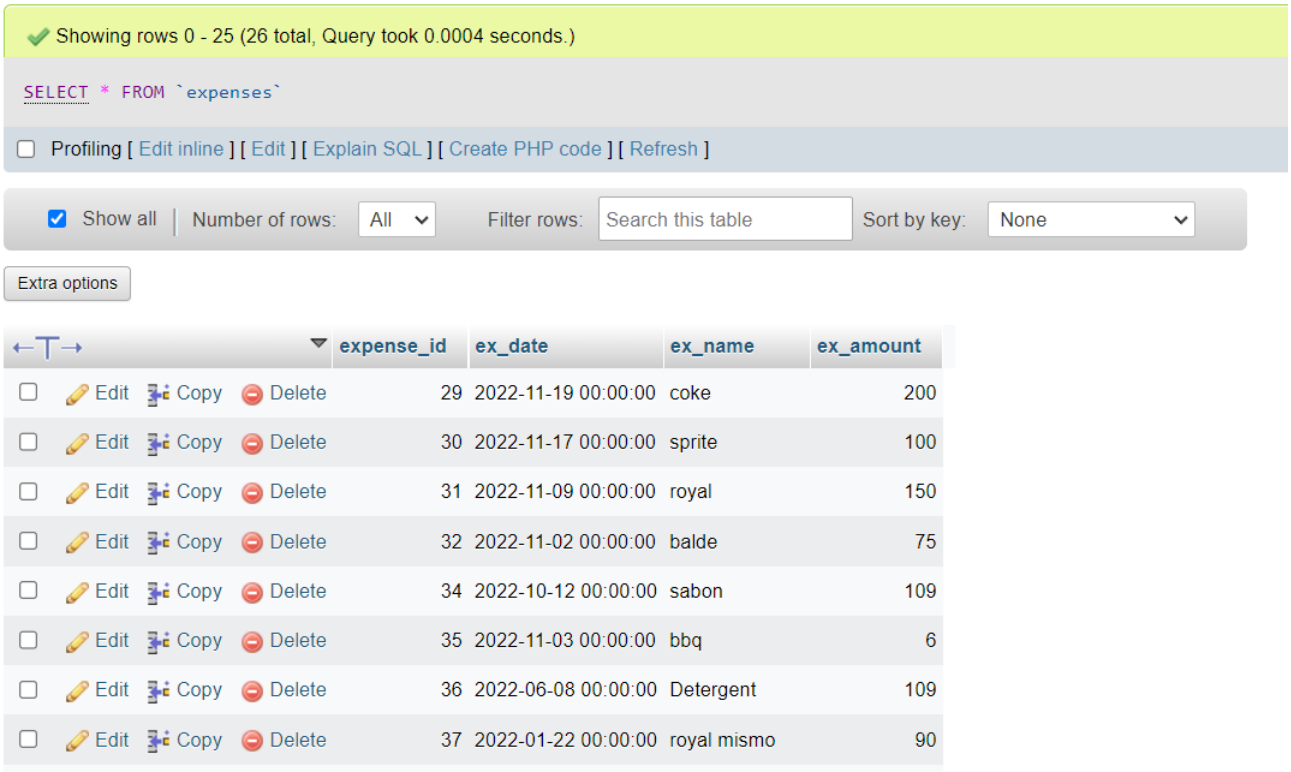
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Extra options

	customer_id	first_name	last_name	contact_no
Edit Copy Delete	59	Lebron	Bryant	09876543221
Edit Copy Delete	60	Kobe	James	09876543221
Edit Copy Delete	61	Kawhi	Curry	09123345678
Edit Copy Delete	62	Michael	Mcgregor	09876543221
Edit Copy Delete	64	Isaac	Newton	12345678901
Edit Copy Delete	68	Mariah	Curry	09090909091

Check all *With selected:* Edit Copy Delete Export

Appendix B.3: Data in 'customers' Table



Showing rows 0 - 25 (26 total, Query took 0.0004 seconds.)

```
SELECT * FROM `expenses`
```

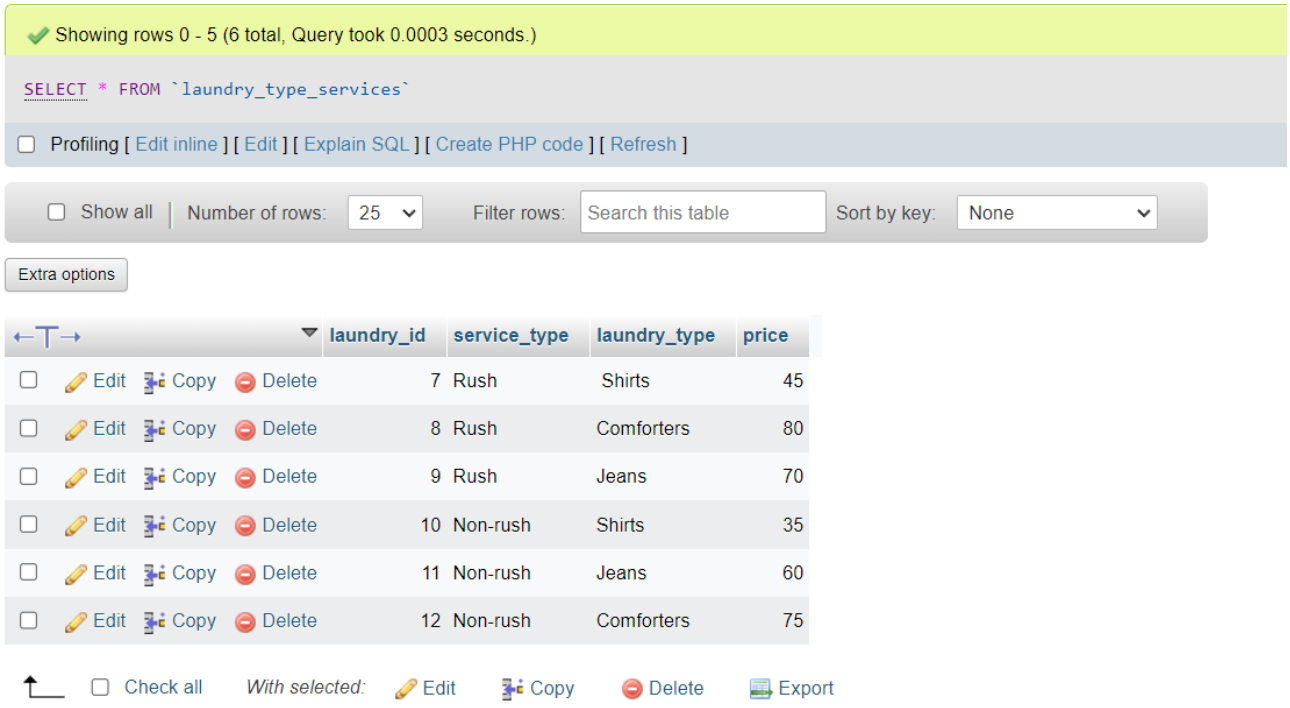
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: All Filter rows: Search this table Sort by key: None

Extra options

	expense_id	ex_date	ex_name	ex_amount
Edit Copy Delete	29	2022-11-19 00:00:00	coke	200
Edit Copy Delete	30	2022-11-17 00:00:00	sprite	100
Edit Copy Delete	31	2022-11-09 00:00:00	royal	150
Edit Copy Delete	32	2022-11-02 00:00:00	balde	75
Edit Copy Delete	34	2022-10-12 00:00:00	sabon	109
Edit Copy Delete	35	2022-11-03 00:00:00	bbq	6
Edit Copy Delete	36	2022-06-08 00:00:00	Detergent	109
Edit Copy Delete	37	2022-01-22 00:00:00	royal mismo	90

Appendix B.4: Data in 'expenses' Table



Showing rows 0 - 5 (6 total, Query took 0.0003 seconds.)

```
SELECT * FROM `laundry_type_services`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

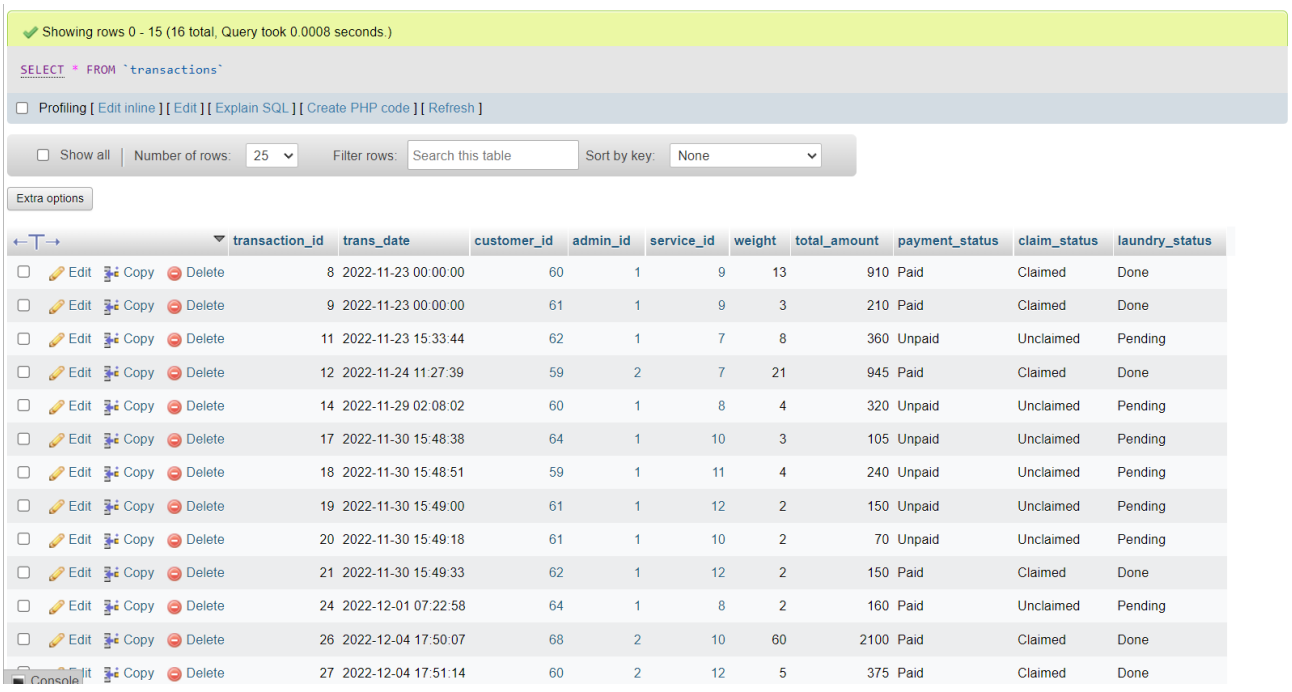
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Extra options

	laundry_id	service_type	laundry_type	price
Edit Copy Delete	7	Rush	Shirts	45
Edit Copy Delete	8	Rush	Comforters	80
Edit Copy Delete	9	Rush	Jeans	70
Edit Copy Delete	10	Non-rush	Shirts	35
Edit Copy Delete	11	Non-rush	Jeans	60
Edit Copy Delete	12	Non-rush	Comforters	75

Check all *With selected:* Edit Copy Delete Export

Appendix B.5: Data in 'laundry_type_services' Table



Showing rows 0 - 15 (16 total, Query took 0.0008 seconds.)

```
SELECT * FROM `transactions`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

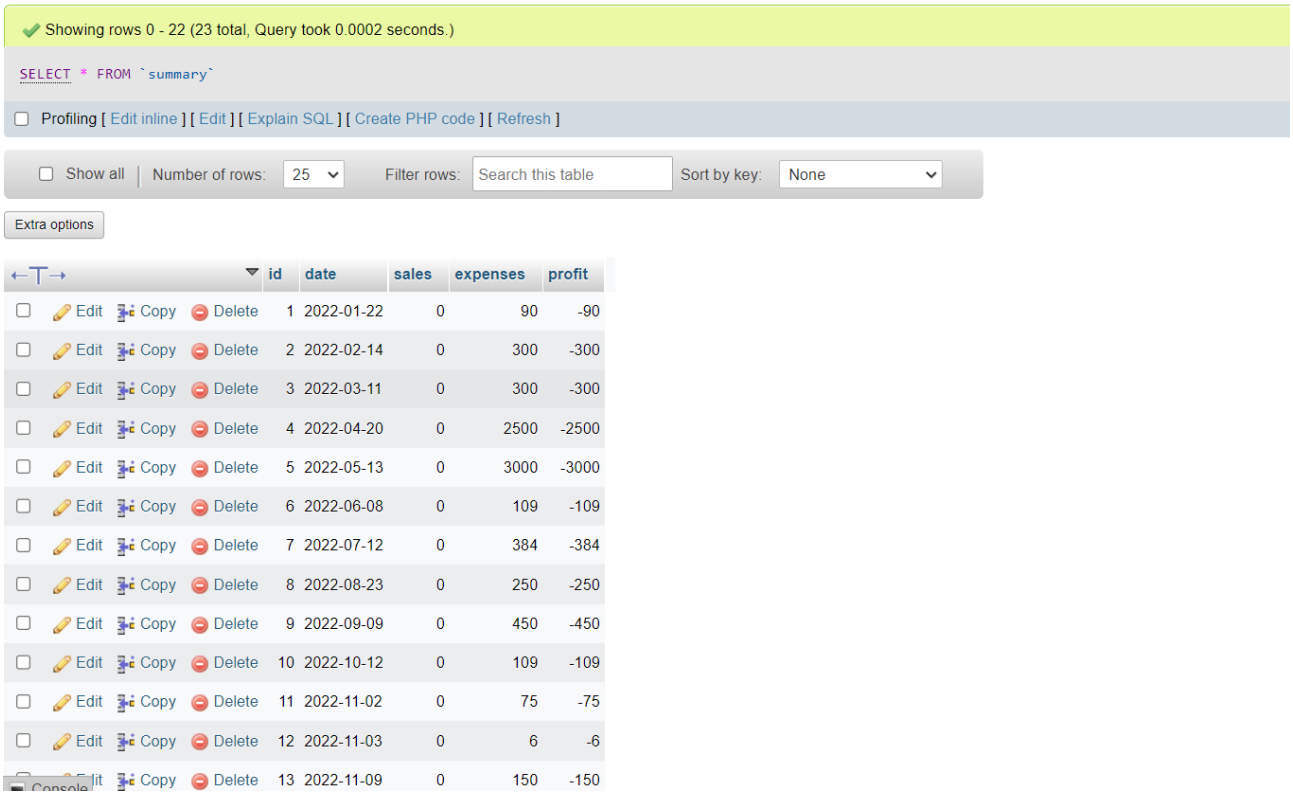
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

Extra options

	transaction_id	trans_date	customer_id	admin_id	service_id	weight	total_amount	payment_status	claim_status	laundry_status
Edit Copy Delete	8	2022-11-23 00:00:00	60	1	9	13	910	Paid	Claimed	Done
Edit Copy Delete	9	2022-11-23 00:00:00	61	1	9	3	210	Paid	Claimed	Done
Edit Copy Delete	11	2022-11-23 15:33:44	62	1	7	8	360	Unpaid	Unclaimed	Pending
Edit Copy Delete	12	2022-11-24 11:27:39	59	2	7	21	945	Paid	Claimed	Done
Edit Copy Delete	14	2022-11-29 02:08:02	60	1	8	4	320	Unpaid	Unclaimed	Pending
Edit Copy Delete	17	2022-11-30 15:48:38	64	1	10	3	105	Unpaid	Unclaimed	Pending
Edit Copy Delete	18	2022-11-30 15:48:51	59	1	11	4	240	Unpaid	Unclaimed	Pending
Edit Copy Delete	19	2022-11-30 15:49:00	61	1	12	2	150	Unpaid	Unclaimed	Pending
Edit Copy Delete	20	2022-11-30 15:49:18	61	1	10	2	70	Unpaid	Unclaimed	Pending
Edit Copy Delete	21	2022-11-30 15:49:33	62	1	12	2	150	Paid	Claimed	Done
Edit Copy Delete	24	2022-12-01 07:22:58	64	1	8	2	160	Paid	Unclaimed	Pending
Edit Copy Delete	26	2022-12-04 17:50:07	68	2	10	60	2100	Paid	Claimed	Done
Edit Copy Delete	27	2022-12-04 17:51:14	60	2	12	5	375	Paid	Claimed	Done

Console

Appendix B.6: Data in 'transactions' Table



	id	date	sales	expenses	profit
Edit Copy Delete	1	2022-01-22	0	90	-90
Edit Copy Delete	2	2022-02-14	0	300	-300
Edit Copy Delete	3	2022-03-11	0	300	-300
Edit Copy Delete	4	2022-04-20	0	2500	-2500
Edit Copy Delete	5	2022-05-13	0	3000	-3000
Edit Copy Delete	6	2022-06-08	0	109	-109
Edit Copy Delete	7	2022-07-12	0	384	-384
Edit Copy Delete	8	2022-08-23	0	250	-250
Edit Copy Delete	9	2022-09-09	0	450	-450
Edit Copy Delete	10	2022-10-12	0	109	-109
Edit Copy Delete	11	2022-11-02	0	75	-75
Edit Copy Delete	12	2022-11-03	0	6	-6
Edit Copy Delete	13	2022-11-09	0	150	-150

Appendix B.7: Data in 'summary' Table

Appendix C: Working Bibliography

Article:

Laundry And Dry-Cleaning Management Software to Take Your Business to the Next Level

Ibrahim, A. L. (2015) Laundry management system. SPEC INDIA. (2022, January 12). Retrieved September 28, 2022, from https://www.specindia.com/businesssolutions/laundry-management-system.

Based from this article, the privilege of having an integrated and comprehensive laundry software is that it can help the laundry management to overcome challenges or issues inside. Some features included in the software are taking orders, saving those records, assigning specific schedule for delivery and pickup, and business transactions such as payment. The automated method of doing these laundry tasks will increase efficiency of its operation, will reduce costs, improve the overall productivity, and accurate management of data.

Project Report on Laundry Management

Bhindi, P., & Jamvecha, R. (2021). *Project Report on Laundry Management*. Scribd. Retrieved September 28, 2022, from https://www.scribd.com/document/509250872/LaundryManagment-ProjectReport?fbclid=IwAR1JfT078n8vNoiN1zTHIKIOk- .

Automating the management of the laundry company with a laundry management system will increase its efficiency and eliminate errors. It aims to standardize data, consolidate data, ensure data integrity, and reduce inconsistencies through the use of a highly automated process that is stress-free, dependable, and quick for both users and the staff in charge of the registration and laundry management processes. It is possible by the use of asp.net computer programming language and SQL database application. While the SQL database will be at the back-end to manage the data storage process, HTML will be at the front-end and give the graphical user interface that interacts with the user.

Laundry Mama: Humanizing Laundry Tasks using Laundry Management System and Laundry-On-Demand Mobile Applications

Mei, Leong & Ku Azir, Ku Nurul Fazira & Ibrahim, Siti & Azemi, Saidatul. (2020). LaundryMama: Humanizing Laundry Tasks using Laundry Management System and Laundry-On-Demand Mobile Applications. IOP Conference Series: Materials Science and Engineering. Retrieved September 29, 2022 from https://www.researchgate.net/publication/340084165_LaundryMama_Humanising_Laundry_Tasks_using_Laundry_Management_System_and_LaundryOnDemand_Mobile_Applications.

This article introduces a laundry management system and laundry-on-demand mobile applications. Using the traditional laundry service method, the customer is not informed about the stage of the laundry process, does not have the option to schedule the preferred laundry pick up time for the deliveryman to pick up the unwashed laundry from the address provided by the customer, and

the laundry ordering paper forms are frequently lost in transit between the customer and admin. To overcome the challenges, a laundry management system software and a laundry on demand mobile application are required.

Dobby2U: Online Laundry Services Management System (OLSMS)

Omar, A. H., Mohd Zulkifli, N. A. A., Rosli, F. N., & Esa, N. A. (2022, February 23). *Dobby2U: Online Laundry Services Management System*. Retrieved September 29, 2022 from https://publisher.uthm.edu.my/periodicals/index.php/mari/article/view/3516/1775.

This article stated that it improves the user experience when using OLSMS. The System Development Life Cycle guides all procedures involved in the development of this system (SDLC). Users must make an order for the sort of computer they desire and confirm the order in this system. Instead, the laundry will be in charge of overseeing the entire laundry process. The admin will update every process in the system to make it easy for users to verify the status of the service. In a word, this system will give an alternate method for all users to manage laundry services effectively while preserving social distance from one another.

Design and Implementation of a Laundry Management System

O. Shoewu, N.T. Makanjuola, D.A. Phillips, and A. Emmanuel. (2016). *Design and implementation of a laundry management system.* ResearchGate. Retrieved September 29, 2022, from https://www.researchgate.net/publication/326493512_Design_and_Implementation_of_Laundry_Management_System.

It is stated that customers are filled laundry firms are usually faced with difficulties in keeping detailed records of customers clothing. Hence, the goal of their study is to calculate the quantity of garments gathered, the date of clothing collection, and the information must be protected to minimize errors and data loss.

Online Laundry Management System

Khaiwal, A. (2020, May). *Online Laundry Management System*. Retrieved September 29, 2022 from http://103.47.12.35/bitstream/handle/1/1599/1713104033_ANURAG%20KHAIWAL_FinalProjectReport%20-%20Anurag%20Khaiwal.pdf?sequence=1&isAllowed=y.

As stated in this article, laundry businesses are having difficulty retaining client data records because one of the key goals in washing is to gratify the consumer. Implementing a laundry management system may help to reduce human mistakes, dissatisfied customers, and keeping customer information secure.

Online Website:

Design and Implementation of a Laundry Management

Modishproject. (2019, September 24). *Design and implementation of a laundry management*.

Modish Project. Retrieved September 28, 2022, from https://www.modishproject.com/design-and-implementation-of-alaundrymanagement-system.

This study describes the situation of a specific laundry firm, Sparkle Laundry Services, who uses a manual system for management and maintenance of significant information. This type of management system often results to different issues since it requires papers to store data. The problems that were mentioned were; poor statistics about customers because of misplaced or loss of customer records, longer waiting time which can be a result of time wastage, inaccurate customer report, and increase of workload.

Laundry Management System Database Design

Evangelista, A., & Manthan. (2020, May 31). Laundry Management System Database Design. Itsourcecode.com. Retrieved September 28, 2022, from https://itsourcecode.com/freeprojects/database-design-projects/laundry-managementsystem-database-design/.

This website mentioned that laundry management system database design is a method that makes it simple and convenient for clients to drop off their worn clothing for laundry, as well as hassle-free. This application contains both crucial and fundamental information. People nowadays are always looking for a quick and easy approach to complete a task. When there is no error or mistake in a business, it satisfies both the owner and the client.

SDLC Prototype Model: Design, Advantages, Disadvantages and Applications

Verma, E. P. (2015, May 11). *SDLC Prototype Model: Design, advantages, disadvantages and applications: Engineer's Portal*. Yuvayana. Retrieved September 11, 2022, from https://er.yuvayana.org/sdlc-prototype-model-design-advantages-disadvantages-andapplications/.

In this website, it stated that the advantage of building software under the prototype model is that it enables for a high level of customer interaction with the produced system. System is for customer review and feedback about the system functionality. Errors and issues can be detected easily. While the disadvantage, it increases the complexity of the system and an incomplete application may cause application not to be used as the full system.

Blog:

Issues with Paper-Based Management (And 3 Reasons To Switch)

Saunders, J. (2019, January 24). *5 Issues With Paper-based Management (and 3 Reasons to Switch)*. MyMobileWorkers. Retrieved September 10, 2022, from https://www.mymobileworkers.com/blog/the-problems-with-paper-based management?fbclid=IwAR1JfT078n8vNoiN1zTHIKIOkM2tUbP85I6xeTT50ip1hPssINgLm--w-w.

According to this blog, paper-based management is expensive due to the use of paper, ink, and the compensation of a staff member who works on the papers, and it saves time. It also claims that shifting to digital management may enhance productivity by up to 25% as a result.