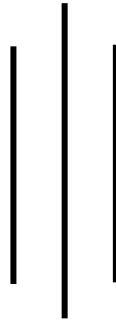# BILLING MANAGEMENT SYSTEM

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Asian School of Management and Technology

A Project Report Submitted to

Faculty of Management, Tribhuvan University in

partial fulfillment of the requirements for the degree of

Bachelor of Information Management

Gongabu, Kathmandu

February, 2022

STUDENT DECLARATION

This is to certify that We have completed MIS Project entitled "Billing Management System" under the guidance of "Santosh Dhungana" in partial fulfillment of the requirements for the degree of Bachelor of Information Management at Faculty of Management, Tribhuvan University. This is our original work and I have not submitted earlier elsewhere.

_____   _____

Deebas Lamgade   Nirajan Khadka

_____   _____

Karan Bhandari   Hari Rijal

February 25, 2022

ACKNOWLEDGEMENT

This report has been prepared for the partial fulfilment of the requirements for the degree of Bachelor of Information Management, prescribed by faculty of Management, Tribhuvan University. This is a group project assigned to us during our academic study in BIM Seventh semester, we should remain thankful to many people for the successful completion of this project.

We would like to express sincere gratitude to our supervisor, Mr. Santosh Dhungana, for providing necessary guidelines for completion of this report. We are thankful to him for his continuous reinforcement and motivation for completing the project successfully. We thank for his regular feedback and suggestion to improve the report further.

We are very thankful to respected Associate Lecturer, Mr. Surya Bam for helping and encouraging us in every aspect of my academic study. Also, we would like to thank all the respondents who filled the questionnaire and helped us with the continuation of the project.

Finally, we would like to thank all of our friends for uplifting our spirit to complete the report in time.

LIST OF FIGURES

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LIST OF ABBREVIATION

BIM   Bachelor of Information Management

CRUD	Create Read Update and Delete
CSS	Cascading Style Sheet
ERD	Entity Relationship Diagram
HTML	Hypertext Markup Language
HTTP	Hypertext Transfer Protocol
IT	Information Technology
MIS	Management Information System
TU	Tribhuvan University
UML	Unified Modeling Language
XAMPP	Apache Http Server MySQL Database PHP and Perl

EXECUTIVE SUMMARY

Billing Management system is web-based application, which is used to keep the record of daily transaction of any business store. The system provides the bill to the customer and

the daily record of bill is store in database of the system from where admin can able to view the sales report.

The system is divided into the two sections i.e., Admin and Cashier. Admin can able to add cashier. The cashier is able to choose the payment method i.e.; cash and credit and add product details during billing. The billing transaction can be stored in the database which can be views from the admin panel. The admin can able to manage products and suppliers. Admin can view the sales reports along with different chart.

TABLE OF CONTENTS

CHAPTER ONE INTRODUCTION

1.1   Background

This project is an essential and compulsory part for the student who is undergoing the study of the Bachelor of Information Management (BIM) program affiliated to Faculty of Management, Tribhuvan University (TU). University is to prepare IT professionals proficient in the use of computers and computational techniques use in order to develop effective information system to solve real life problems in the organizational areas. This Project work helped us to know about the operational and functional mechanism of organization. A project is an opportunity to implement the theoretical knowledge into real world practice. The main vision of this project is that through this experience, students can gain a new perspective into the real-world operation and problems. It is also an excellent channel for students to get acquainted with different organizations, developed skill through project based learning and learn how to deal with real world problems. As the development of technology improves day by day, the businesses are also expected to keep up with the times and utilize the available technology to better their operation and this is especially true for service oriented business.

A Billing Management System is a combination of software and hardware that receives service usage information, produces invoices, creates reports for management, and records payments made to customer accounts. Nowadays most establishment are becoming modernized, they use modern technologies to make their transaction fast, easy and accurate in order to avoid waste of time and for the sake of efficient transaction. This billing management system provides the details information about Bill Information, which allow for a staff in a more systematic manner. This system helps the cashier and staff to perform the work faster from where the data is saved in database so that the admin or the head of store can able to view the workflow of his store and able to track all the activities. This project allows the staff members to minimize the time taken between the key process that takes place from the order placement to the bill Statement.

1.2 Problem Statement

As there is no use of digital technology to manage all the operations of the billing system. Operations of the store is managed manually through paper-based system. Due to the old manual system, the store is facing various problems of time ineffectiveness, lots of paper work, slow data processing and difficulties in finding the specific record due to file management system.

At existing system, the record has been kept manually. Any customers who need to pay bill has to wait for the paper bill as it consumes more time. This often requires a lot of time and effort. In the existing system the person work done manually. The manual work processes were time consuming and hence slow Following are the drawbacks of the existing system:

- The existing system is totally manual thus there are chance of error in processing.
- The basic and major drawbacks in the existing system are the speed of retrieval of data.
- The manual work such as calculation are more error prone.
- There is no central database from where one can get different statistical data at one place.

1.3 Objectives of the Study

The objectives of this project is to provide the systematic billing system to the organization which includes the following points:

- To develop a better automated billing management system.
- To reduce workload of staff.
- To store data in centralized location.

1.4 Methodology

A methodology is a model for the design, planning, implementation, and achievement of the project objective. In order to gather the information and data, and to discover the design of the application various methods has been applied.

1.4.1 Project Framework

Project framework is a combination of processes, tasks, and tools used to transition a project from start to finish. This chapter reveals the proposed method of implementing the project. The important on this is systematic planning and implementation in order to complete system on time.
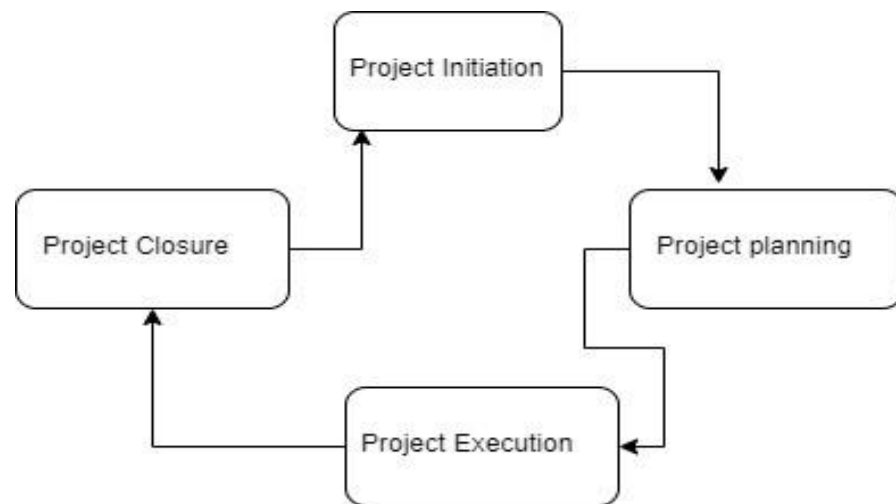
Figure 1.1: Project Framework

• **Project Initiation**

This is the first phase in the system development cycle where a reasonable topic that is capable to solve the issue of the organization was selected. Work on the topic was started after defining its objectives and scope. A written document as a project proposal was submitted to the concerned faculty, stating the clear view about the organization, its issue, recommendation and requirement of the organization. To gather all these data required the organization was visited. After the approval of the project proposal, the next phase was started.

- **Project Planning**

In this phase the process involved in the overall development of the system and the activities that must be performed as well as the strategies were defined. Various planning activities has been be conducted, which includes the planning of work, schedule, budget, gathering resources, and etc. Those proper planning activities helps me to complete the project on time and within the budget.

- **Project Execution**

In the third phase, the requirement documented were prioritized and the system view was developed. Different types of feasibility were analyzed for the completion of the project with in the estimated time, budget and the resources required. The overall module of the system was developed in this phase. The actual implementation was performed and the testing of the system was also executed. This phase was the longest phase.

- **Project Closure**

This is the last phase, in which the project is completed and formally closed. In this phase the overall process and the achievement is documented and presented to the mentor. Project Closure involves handing over the actual implementation view of the project along with the documentation including all the activities involve in project from scratch level to the completion of the project to the concerned External and Internal supervisor.

CHAPTER TWO TASKS AND ACTIVITIES PERFORMED

2.1 Literature Review

For the purpose of this project and its required features, other existing systems were referred to, so as to gain inspiration and observe what features the software made for the general use have and might be need for this project. When researching for existing software that might help in the process of building this project.

"Billing System Design Based on Internet Environment". This paper deals with the design of Internet billing system, in which it is possible pay invoices electronically. This approach is implemented via virtual banks, in which the process of money transfer can be implemented. In other hand many applications can be realize such as; deposit e-money, withdrawal e-money and determine account balance. A Gate way translator is used to apply authentication rules, security and privacy (Muzhir, 2017).

"Billing System Short Documentation". This Billing software system is the most sophisticated web based billing system. This web based software has been designed especially for small & midsized businesses. This Billing system is the most reliable, flexible and scalable billing software that helps streamline billing while considerably reducing operating costs. They made this project for a firm called Cross Section Interactive (Rajpal, 2019).

2.2 Analysis of tasks and activities

Analysis is a process of gathering and interpreting facts, diagnosing problems and the information to recommend improvement on the system. It is a problem solving activity that requires intensive communication between the system users and system developers. System analysis or study is an important phase of system development process. Many task and activities had been performed which helped to fulfill the main objective of our project. Major objective of the project was to get the information about the use of technology in one of the organization in the country.

2.3 Analysis of Problem

The organization is facing certain problems. The main problem of this organization is implementation of manual process, in these time organization uses pen and copy for keeping the record use the paper bill for billing during selling product. Similarly, the

process and implementation is major issue. Implementing required changes to organizational culture which is a major challenge.

2.4 Analysis of possible solutions

Stores should improve their technology. They must adopt the new strategy of billing system. They must invest in new technology that will put them ahead of the rest of the shop. They should therefore implement a web-based billing system.

2.5 Feasibility Analysis

Feasibility study is made to see if the project on completion will serve the purpose of the organization for the amount of work, effort and the time that spend on it. Feasibility study lets the developers for see the future of the project and usefulness. A feasibility study of a system proposal is according to its workability, which is the impact on the organization ability to meet the user needs and effective uses of resources. The document provides the feasibility of the project that is being designed and list various areas that were considered very carefully during the feasibility study of this project such as Technical, Economic and Operational feasibilities.

2.5.1 Technical Feasibility

Earlier no system existed to cater to the needs of 'Billing System'. The current system developed is technically feasible. It is a web based user interface. Thus it provides an easy access to the users. The database's purpose is to create, establish and maintain a workflow among various entities in order to facilitate all concerned users in their various capacities or roles. Permission to the users would be granted based on the roles specified. Therefore, it provides the technical guarantee of accuracy, reliability and security.

2.5.2 Economic Feasibility

A system can be developed technically and that will be used if needed must still be a good investment for the organization. In the economic feasibility, the development cost in creating the system is evaluated against the ultimate benefit derived from the new systems. Financial benefits must equal or exceed the costs.

The system is economically feasible. Since the interface for this system is developed using the existing resources available at the organization, there is nominal expenditure and economic feasibility for certain.

2.5.3 Operational Feasibility

Proposed projects are beneficial only if they can be turned out into information system. That will meet the organization's operating requirements. Operational feasibility aspects of the project are to be taken as an important part of the project implementation. Some of the important issues raised are to test the operational feasibility of a project includes the following:

- Is there sufficient support for the management from the users?

- Will the system be used and work properly if it is being developed and implemented?

- Will there be any resistance from the user that will undetermined the possible application benefits?

This system is targeted to be in accordance with the above-mentioned issues. Beforehand, the management issues and user requirements have been taken into consideration. So there is no question of resistance from the users that can undermine the possible application benefits. The well-planned design would ensure the optimal utilization of the computer resources and would help in the improvement of performance status.

2.6 Requirement Analysis

It is the process of gathering the information about the required and existing systems and distilling the user and system requirements from this information. It involves Functional Requirement and Non-Functional Requirement.

2.6.1 Functional Requirements

- Admin can able to perform CRUD operations.

- Admin can review the sales.

- Cashier provide the accurate bill.

- Customers can able to receive the bill in digitize form.

2.6.1.1 Use Case Diagram

A use case diagram is a graphic depiction defined by the unified modeling language (UML) whose aim is to show the interactions among the elements of a system (actors), their goals (represent as use case) and any dependencies between those use cases. It is used to identify the primary elements (actors) and processes (use cases) that form the system. The use case diagram describes different activities performed by different actor within the system. It represents system functionality from users' perspective. Use case diagram describes a sequence of actions that provides a measurable value to an actor and is drawn as horizontal ellipses.
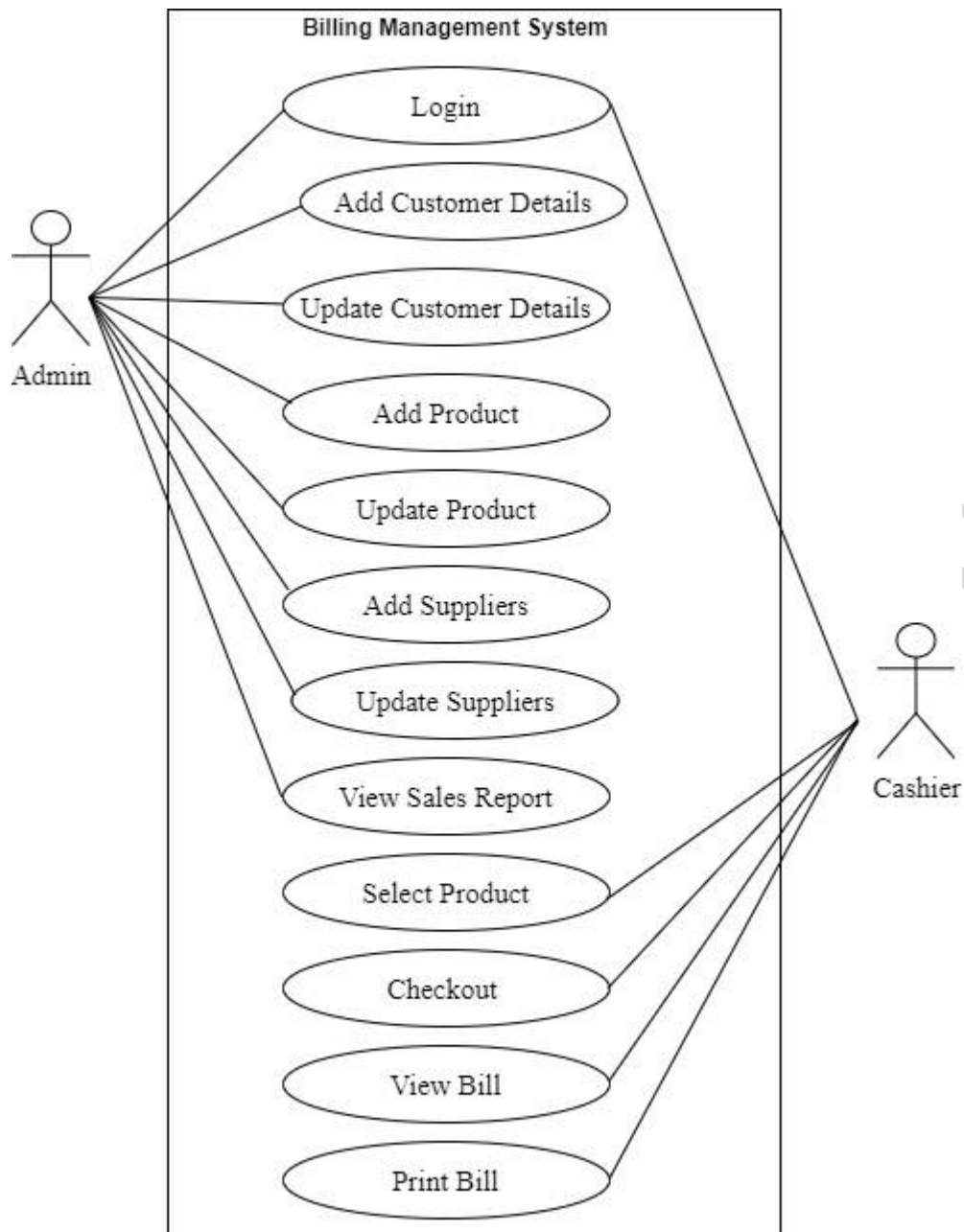
Fig:2.1: Use case Diagram of Billing Management system

2.6.2. Non-Functional Requirements

- The system must provide customers 24 hours billing service.

- System should able to handle multiple users.

- Database updating should follow transaction processing to avoid data inconsistency.

- System is portable and we can switch the server very easily.

- The system should support almost in all browser.

2.7 System Design

Systems design is the process of defining the architecture, product design, modules, interfaces, and data for a system to satisfy specified requirements. Systems design could be seen as the application of systems theory to product development. This part of the project consists of all the work performed from the very initial sketching of the outcome of the project to successful designing of the project.

2.7.1 Process Flowchart

A flowchart is a type of diagram that represents a workflow or process. A flowchart can also be defined as a diagrammatic representation of an algorithm, a step-by-step approach to solving a task. The flowchart shows the steps as boxes of various kinds, and their order by connecting the boxes with arrows Flow chart is a modeling technique that traces a movement of data in a computer system and show how the data is to be processed. It is a type of diagram that represents an algorithm, workflow or process, showing the steps as boxes of various kinds, and their order by connecting them with arrows.
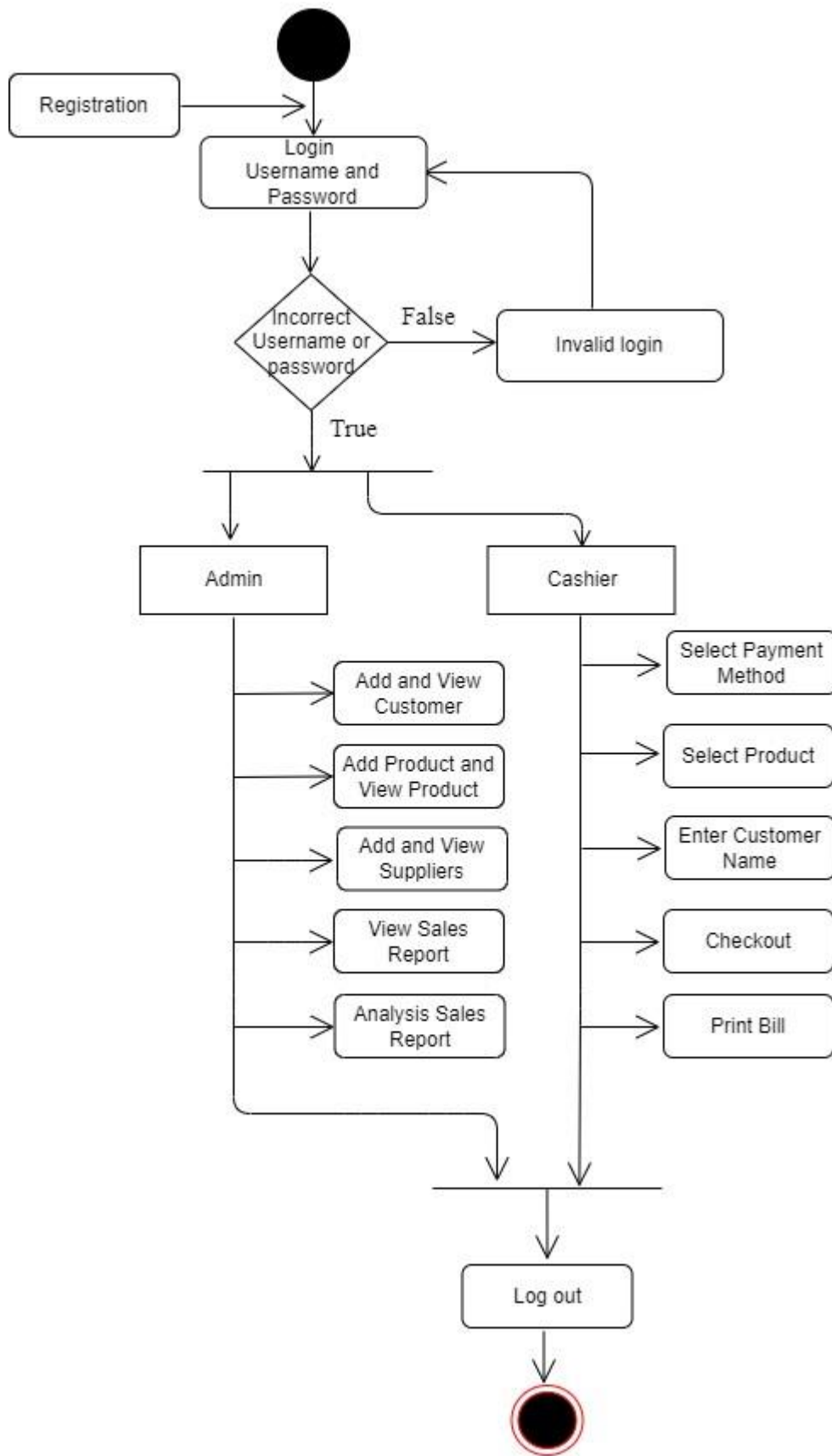
Fig 2.2: Activity Diagram of Billing Management system

2.7.2 Entity Relationship Diagram (ERD):

Entity Relationship Diagram (ERD) is a model that describes all the entities exist on the system along with their relationship with each other.
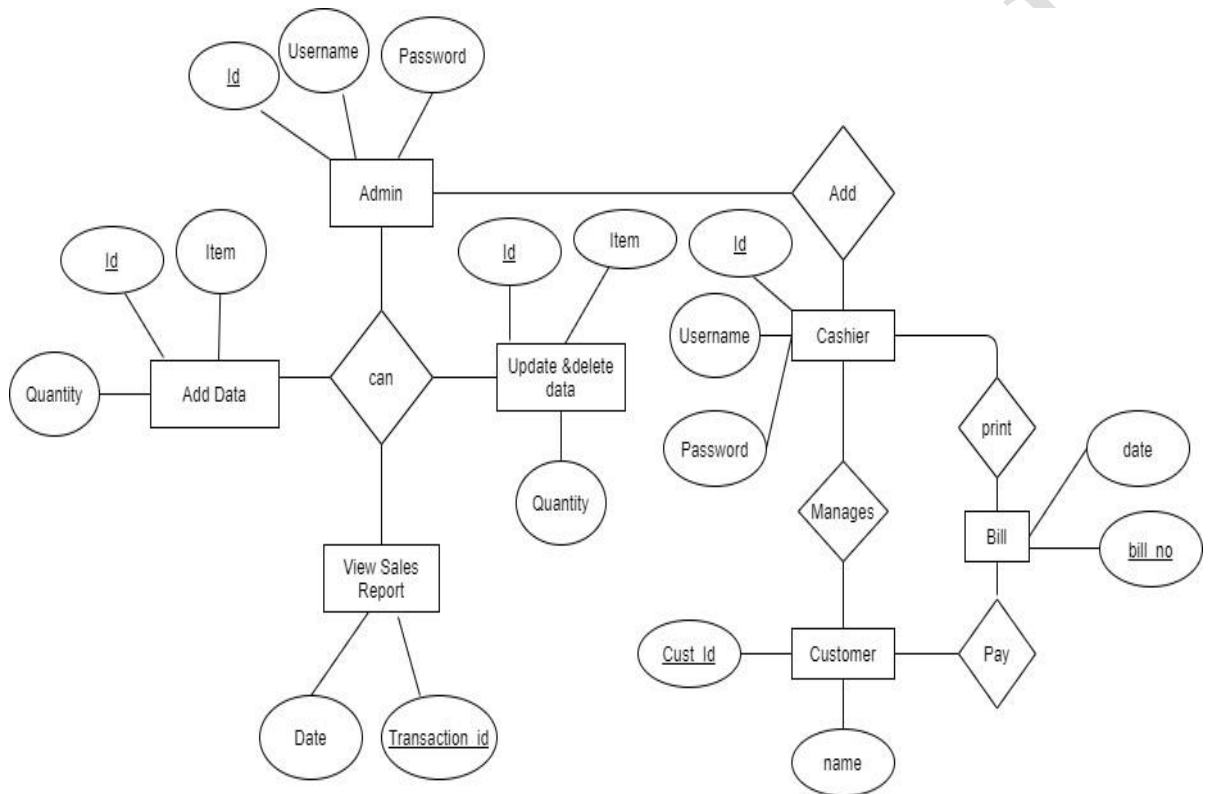

Fig 2.3 ER Diagram of Billing system
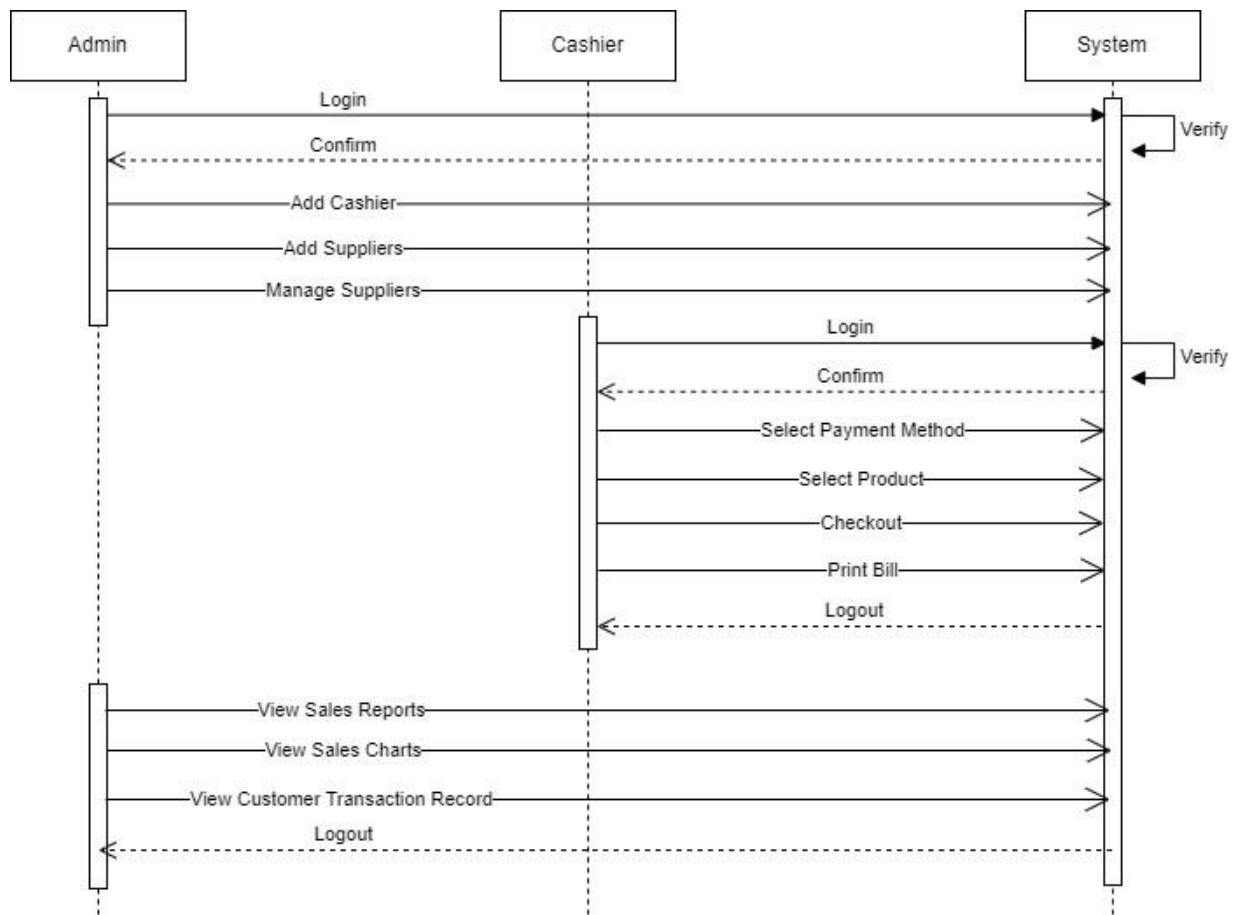
2.7.3 Sequence Diagram

Fig: 2.4 Sequence Diagram

2.8 System Implementation

This part will look at the implementation of the system including the database and the main application. The database was created first followed by the main application which was integrated with the database. This section highlights the main features of the system and how they were implemented.

2.8.1 Tools used

During this development of report different tools were used. Mainly used tools are as follows:

- **HTML:** It is basically used to format text as titles and headings, to arrange graphics on this system and also used to link different pages within a system.

- **CSS:** In this system CSS is used for development sites structure by creating design or outline the html element and describing the presentation to different pages, including colors, layout and fonts.

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- **Bootstrap:** In this project, Bootstrap is used for designing and making the website screen responsive. Different components and models are used for attractive user interface. In this project Bootstrap version 4.0.0 is used.

- **PHP:** PHP code is embedded into HTML for making website dynamic and used for connecting website to database. In this system PHP version 7.3.11 is used.

- **MySQL:** In this project, MySQL is used for the database management of the system. Different data is stored in the server to make the website dynamic.

- **XAMPP:** It is used for creating and configuring with database which is written in MySQL without internet. In this project XAMPP version 3.2.4 is used.

- **Microsoft Office:** The Microsoft office word document is used for softcopy documentation of the project. All the document design and numeration are done by using Microsoft Office Word 2019

- **JavaScript:** In this project JavaScript is used for creating some animation in page content.

- **Web Browser:** Google Chrome browser is used to the run the localhost system of a project.

- **Sublime Text:** Sublime Text version 3.2 is used to write down all the HTML, CSS and PHP code in this project.

2.8.2 Module Description

Login Module

When the user confirmation with a login screen in which they would enter their unique username and password. Validation was performed by checking if the username and password is correct.

N.S Fashions

| Admin | Cashier |

admin

••••••••

Log in

N.S Fashions

| Admin | Cashier |

cashier

•••••
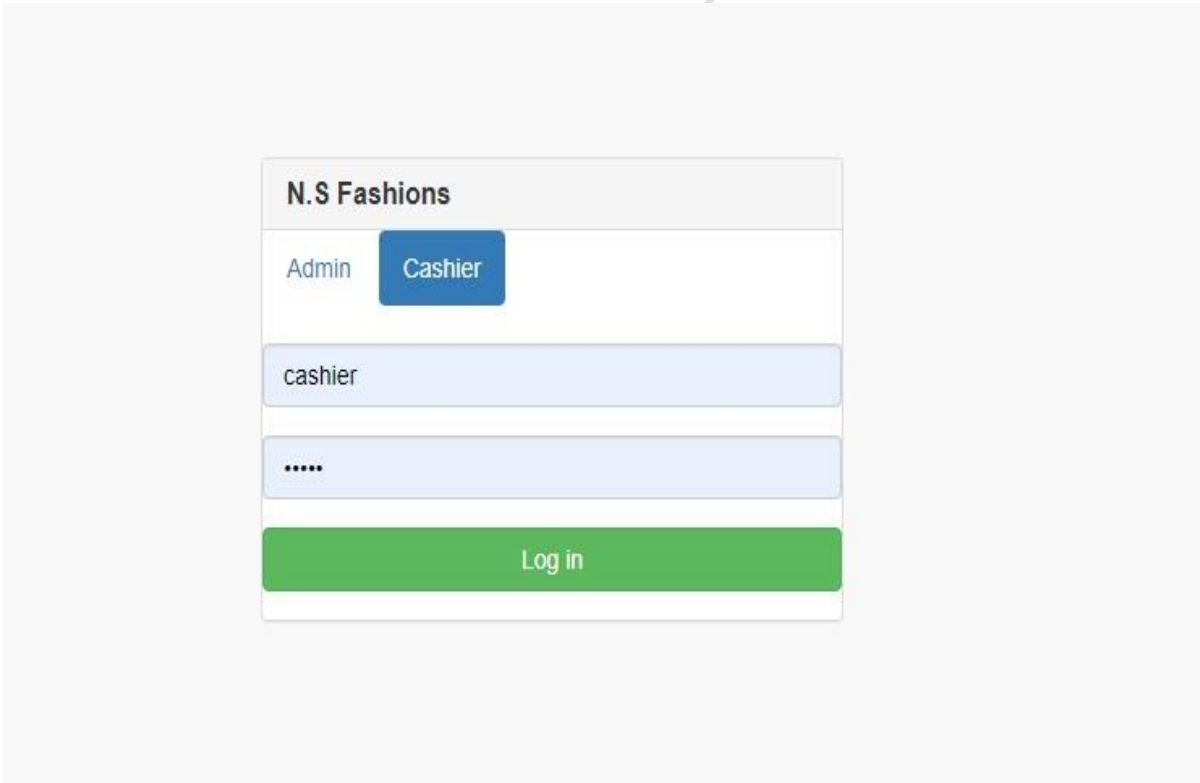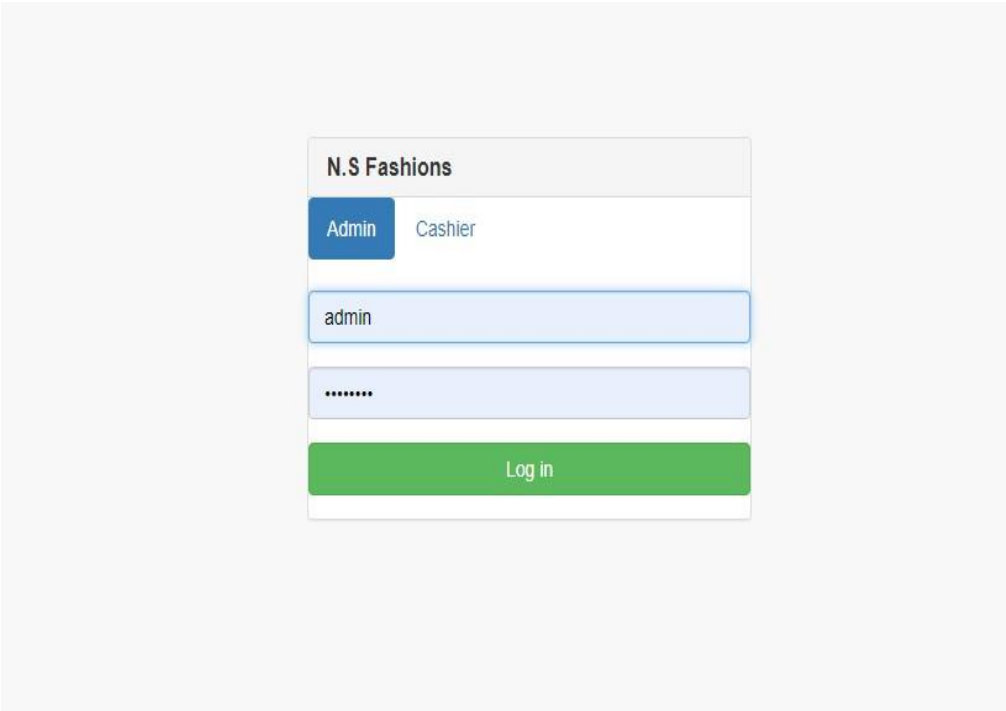
Log in

Home page

When the login is approved then it Redirect into the Homepage Section. Home page is the main page of the system where all the workflow is Perform.
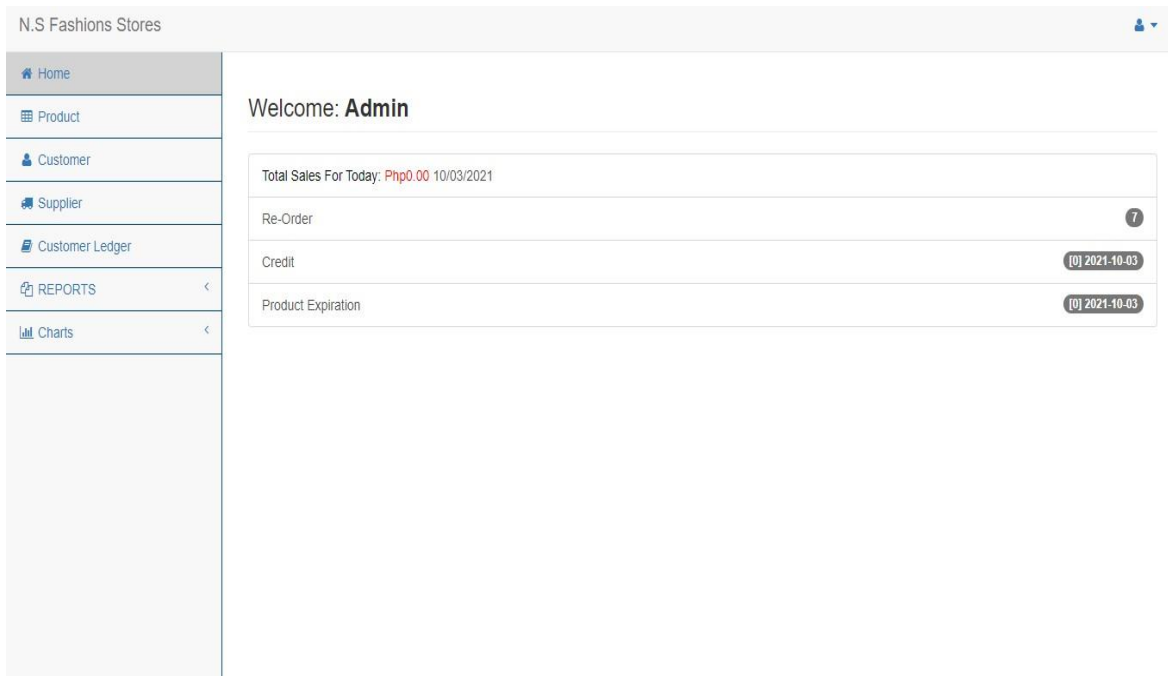
2.9 System and Validation

2.9.1 System Testing

This part will look at the testing of the system developed to ensure it has met its requirements. As a fairly flexible methodology was adopted for the development the testing of the application started during its development with bugs being fixed as they were discovered. After each section of the application was completed it was tested so that errors could be corrected.

2.9.2 Unit Testing:

Unit testing was undertaken during the actual implementation of the system. Each time some code was written it was run and monitored for the bug. As bugs were discovered they were corrected by adding additional code or modifying the existing code. Several bugs were corrected by analyzing the error messages and correcting

them by chaining in code. After development of the system had been completed
testing was also performed.

Table 2.1 Admin Test-cases

Test Case	Test Scenario	Test Data	Expected Result	Status
1	Check response when invalid username and password is entered.	Username= admin Password= admin	Message Display "Incorrect username or password"	Pass
2	Check response with blank username and blank password is submitted	Username= Password=	Message display "All fields are required"	Pass
3	Check response when correct username and incorrect password is entered	Username= Admin Password= HariRijal	Message Display " Incorrect username or password "	Pass
4	Check Response when	Username= user	Message Display " Incorrect	Pass

	incorrect username and correct password is entered	Password= Admin	username or password "	
5	Check response when valid username and password is entered.	Username = admin Password = admin123	Redirect to Home Page	Pass

2.9.3 Integration Testing

Integration testing involves testing the interfaces between programs. Integration testing was applied to this project by testing the integration between the database and the main application Information needs to be read from the database and also inserted into the database by the main application for the system to work successfully as intended Using dummy data several tests were carried out to ensure data is being correctly entered into the appropriate fields and tables in the database and also retrieved from the database. Some problems were discovered using the method and was solved by adding validation code.

CHAPTER THREE DISCUSSION AND CONCLUSION

3.1 Discussion

The development focused primarily on the usability of such an application and the functionality needs of the user. The application that was created successfully met the usability and functional requirements of the user and gained their acceptance.

3.2 Finding

The major findings after the completion of the project are as follows:

- The project helps in gaining the practical knowledge for implementing the theoretical concept that has been learned.
- After analyzing about the organization, it is known that if organization uses the same traditional approaches to billing and keep data then it would increase the cost of product.
- If the organization uses the application for billing and keeping record then thus, the organization would be able to meet its goal comfortably.

3.3 Conclusion

In this system, the recording of bill is done manually. The previous system was time consuming, less secured and took effort and physical space to keep track of paper documents. To solve this problem Billing system is designed. It records data and information in a systematic way and also contains log-in system in which authentication is needed to use the system that makes system secure. As the system records the data digitally it won't take effort and physical space to keep track of paper document.

3.4 Future Enhancement

With the existing constraints, the developed system is not what was planned initially. The primary aim of this project has been met. All the objectives that were set out have been completed and giving positive results in the end. In future some features that can be added for better performance are as below:

1. Attractive user interface can be designed.

2.   Others Iterative module can be added

REFERENCES

(PDF) Billing system design based on internet environment. (n.d.). Retrieved from
        https://www.researchgate.net/publication/242071321_Billing_System_Design_B
        ased_o n_Internet_Environment

Billing system short documentation. (n.d.). Retrieved from https://www.scribd.com/document/348664641/billing-system-shortdocumentation

KetanRajpal(ketanrajpal14). (n.d.). Retrieved from https://www.scribd.com/user/358260425/Ketan-Rajpal

Muzhir AL-ANI | Professor | Doctor of philosophy in engineering. (2018, August 1). Retrieved from https://www.researchgate.net/profile/Muzhir_Al-

    Ani

APPENDICES

Interview Questions

21

- How do you keep the record?
- What does the staff use to make invoice?
- Do your staff provide correct bill?
- How do you know about your sales?
- How do you know about your product?
- How do you know about the transaction?
- How do you analyze the sales?

System Demo

N.S Fashions
Street Address: Kalanki,kathmandu
Brgy: 26
Contact No: 0140000
Email Add : ns@gmail.com

Received From :	Lok Prasad Sharma					
Product Code	**Brand Name**	**Description Name**	**Qty**	**Price**	**Discount**	**Total Amount**
P-44303	abc	xyz	100	2,700.00	100.00	293,800.00
Amount:						260,000.00
VAT:						33,800.00
Cash Tendered:						293,800.00
Total Amount:						293,800.00
Change:						0.00

Cashier : Cashier

N.S Fashions Stores

- Home
- Product
- Customer
- Supplier
- Customer Ledger
- REPORTS
- Charts

Welcome: **Admin**

Total Sales For Today: Php0.00 10/03/2021	
Re-Order	7
Credit	[0] 2021-10-03
Product Expiration	[0] 2021-10-03

PRODUCT LIST

N.S Fashions Stores

- Home
- Product
- Customer
- Supplier
- Customer Ledger
- REPORTS
- Charts

Add Product

Code	Brand Name	Description	Category	Cost	Supplier	Quantity Left	Product Unit	Action
P-20032043	@abc	panjabi	Select Category	100.00	2,200.00	Indian	-150	Per Pieces	
P-20032023	ABC	Panjabi extra	Select Category	100.00	2,500.00	Indian	-100	Per Pieces	
P-6305924	Abc	xyz	S	2,100.00	2,700.00	Indian	0	Per Pieces	
P-44303	abc	xyz	K	2,100.00	2,700.00	Indian	-431	Per Pieces	
P-3932232	Brand	Japanese	Select Category	4,500.00	50.00	Chinese	-601	Per Pack	
P-222302	chessi	xysd	S	3,110.00	3,700.00	NIkeson	-10	Per Pieces	
P-2723360	HYz	ZYHG	S	2,200.00	2,700.00	Chinese	100	Per Pieces	
P-00372327	NBTc	NBTC	S	2,500.00	2,200.00	Indian	1000	Per Pack	

CUSTOMER LIST

N.S Fashions Stores

- Home
- Product
- Customer
- Supplier
- Customer Ledger
- REPORTS
- Charts

Add Customer

Show 10 entries

Search:

First Name	Middle Name	Last Name	Address	Contact	Membership Number	Action
Anil	Sharma	Paudel	kusma	9867610000	78009	
Deepak		paudel	Kalanki	9841068326	78007	
Hari		Rijal	Gongabu	9867638228	7701	
Karan		Bhandari	Nepaltar	9810000	78003	
Nirajan	chhetri	Khadka	Gonagabu	98000000	78004	
Sumir	Sharma	Acharya	Baniyatar	98200000	78005	

Showing 1 to 6 of 6 entries

Previous 1 Next

N.S Fashions Stores

Sales Report

Show [10 ▾] entries   Search: [   ]

Transaction ID ▲	Date ⇕	Customer Name ⇕	Invoice Number ⇕	Type of Payment ⇕	Total Sales ⇕	Balance ⇕	Action ⇕
STI-00021	09/12/2021	Karan Bhandari	RS-00307220	cash	301,280.00	0.00	🗑 🖨
STI-00022	09/12/2021	Deepak paudel	RS-22223226	cash	30,510.00	0.00	🗑 🖨
STI-00023	09/23/2021	hari	RS-33733352	cash	3,024.00	0.00	🗑 🖨
STI-00024	09/23/2021	Ram sharma	RS-33733352	cash	33,264.00	0.00	🗑 🖨
STI-00025	09/23/2021	Deepak paudel	RS-0003233	credit	0.00	299,450.00	🗑 🖨
STI-00026	09/23/2021	Deepak paudel	RS-33800223	cash	293,800.00	0.00	🗑 🖨
STI-00027	09/24/2021	Hari sharma	RS-02322	credit	0.00	29,380.00	🗑 🖨
STI-00028	09/30/2021	Lok Prasad Sharma	RS-3230335	cash	293,800.00	0.00	🗑 🖨

Sidebar menu:
- 🏠 Home
- ⊞ Product
- 👤 Customer
- 🚚 Supplier
- 📓 Customer Ledger
- 🗐 REPORTS
- 📊 Charts

RS-526033	deebas	cash	08/20/2021
RS-429329	Deepak	cash	08/28/2021
RS-429329	ram	cash	08/28/2021
RS-33568	Chakra rawal	cash	08/28/2021
RS-833283	Deepak Paudel	cash	09/05/2021
RS-03902	asian	cash	09/05/2021
RS-00307220	Karan Bhandari	cash	09/12/2021
RS-22223226	Deepak paudel	cash	09/12/2021
RS-33733352	hari	cash	09/23/2021
RS-33800223	Deepak paudel	cash	09/23/2021
RS-3230335	Lok Prasad Sharma	cash	09/30/2021
RS-002200	Charkra Rawal	cash	10/03/2021
RS-22734	Shahil jha	cash	10/04/2021
RS-33033724	dinesh jee	cash	10/04/2021
RS-230003	Manmaya	credit	02/24/2022

🖨 Print

N.S Fashions Stores

- 🏠 Home
- ▦ Product
- 👤 Customer
- 🚚 Supplier
- 📓 Customer Ledger
- 🗐 REPORTS
- 📊 Charts
  - Graph For Cash and Credit
  - Monthly Sales Chart
  - Yearly Sales chart

Sales Charts

Sales Charts According to Product Category

credit (6.25%)

cash (93.75%)

- ▦ Product
- 👤 Customer
- 🚚 Supplier
- 📓 Customer Ledger
- 🗐 REPORTS
- 📊 Charts
  - Graph For Cash and Credit
  - Monthly Sales Chart
  - Yearly Sales chart

Monthly Sales

Monthly Sales Chart

February: Total Sales 0

August | February | October | September

🖨 Print