DEPARTMENT OF COMPUTER APPLICATION

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SUPERMARKET BILLING SYSTEM AND INVENTORY

A MINI-PROJECT REPORT

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TABLE OF CONTENTS

ABSTRACT

SUPERMARKET BILLING SYSTEM

Supermarket billing system deals with the automation of supermarket. This software will help salespersons in managing the various types of records pertaining to customer. The product will help the user to work in a highly effective and efficient environment. It consumes the considerable time and energy that could be utilized in the better productive activities. Apart from that, with increasing customer strength, the task of managing information of each individual customer is indeed a cumbersome task. In the manual system, there are number of inefficiencies that a salesperson faces. The information retrieval is one of the foremost problems. It is very difficult to gather the overall performance reports of the customer. Large records-books have to be maintained where relevant and irrelevant information has to be stored .The automation deals with all such problems and tries to remove them in the best suitable fashion. The new system will cater to the need of the sales persons of any supermarket so that salesperson can manage the system efficiently. Supermarket billing system is developed with the objective of making the system reliable, easier, fast, and more informative.

CHAPTER 1

1.1 INTRODUCTION

Supermarket billing system is the system to automate the process of ordering and billing of a supermarket store. Supermarket is the place where customers come to purchase their daily using products and pay for that. So there is a need to calculate how many products are sold and to generate the bill for the customer.This system is built for fast data processing and bill generation for supermarket customers. It also allows the customer to purchase and pay for the items purchased. The users will consume less time in calculation and the sales activity will be completed within a fraction of seconds whereas in a manual system will make the user to write it down which is a long procedure and it also consumes a lot of time. Because of this software, paper work will be reduced and the user can spend more time on monitoring the supermarket. The project will be user friendly and easy to use. This project is helpful to computerize the bill report and generating the items details. The billing data is a vast collection of product name, price and other product specific data. A product when billed is searched and its price is added to the bill based upon the product quantity. The system also contains discounts on various products so that the product is offered at discounted price while billing. The supermarket billing system is built to help supermarkets calculate and display bills and serve the customer in a faster and efficient manner. This software project consists of an effective and easy GUI to help the employees in easy bill calculation and providing an efficient customer service. With the continuous development and improvement of computer technology, communication technology, network technology, scale database technology, the commercial supermarket has become a developing technology worldwide.

FEASIBILITY STUDY

Feasibility study is a process of analyzing and identifying if a problem can be solved or not solved, focusing on helping answer the essential question of “should we continue the proposed project ideas?” All activities of the study are directed toward helping answer this question. A Feasibility Study is generic in nature and can be applied to any type of project, be it for systems and software development, making an acquisition, or any other project. Feasibility Study is a test of the system according to its workability, impact of the organization, ability to meet user needs and effective use of the resources. We can test our system by different type of the feasibilities. There are basically six parts to any effective Feasibility Study:

(1) The Project Scope -which is used to define the business problem and/or opportunity to be addressed. The old adage, "The problem well stated is half solved," is very apropos. The scope should be definitive and to the point; rambling narrative serves no purpose and can actually confuse project participants.

(2) The Current Analysis -is used to define and understand the current method of implementation, such as a system, a product, etc. From this analysis, it is not uncommon to discover there is actually nothing wrong with the current system or product other than some misunderstandings regarding it or perhaps it needs some simple modifications as opposed to a major overhaul.

(3) Requirements - how requirements are defined depends on the object of the project's attention. For example, how requirements are specified for a product

is substantially different than requirements for an edifice, a bridge, or an information system.

(4) The Approach- represents the recommended solution or course of action to satisfy the requirements.

(5) Evaluation - examines the cost effectiveness of the approach selected. This begins with an analysis of the estimated total cost of the project. (6) Review - all of the preceding elements are then assembled into a Feasibility Study and a formal review is conducted with all parties involved.

1.2 SCOPE

Scope of this project is to investigate and design a software solution which can facilitate both customer and salesperson in performing their daily tasks, improving efficiency, and helping them to be more productive. This project will provide a solution through which salesperson can easily manage, handle and generate all required information in their respective format when needed. It provides quick way of operation by capturing the manual process and automating them. It will help them to manage the bill details, financial data, and historical data and also in producing documents of different formats for different customers. This solution will help salesperson in reducing effort spend on managing many bills. It will also provide them opportunity to explore possibility of generating documents, managing financial details. This system will help the salesperson to manage in fast billing. It will help to maintain the data of the purchased items. It also gives bill to the customers. It will set the rates of taxes and commission on products. The project will enable to see the report regarding product and category in a fixed period of time. It can also change the Graphical User interface of the system.

1.3 PROBLEM STATEMENT

In today's fast paced society, it's very hard to be competitive without using cutting-edge technology available in market. After years of business, the data has grown much. It is becoming a challenge for person to manage that data in an effective way. To be more productive in order processing, he needs a solution which can facilitate their current processes with use of technology and software. With increased amount of orders, it is becoming difficult for salesperson to manage orders in effective and efficient manner. It is very hard to go through all paper work and backtracking orders. If there is any complain or review of any order, it takes large amount of effort and time to backtrack and fix the problem. This results in loss of resources, increased time, and low output.

Drawbacks of Manual System (Current System):

- Time consuming: Getting the required information from the available data takes a lot of time. Changing, editing and updating the information contained in several files are a slow and time consuming process.
- Poor communication: A manual system requires employees and managers to write down each time an item is removed from the inventory. If one employee forgets to mention that the last coffee product has been removed from the inventory the admin or manager expects the item to still available for a customers during sale.
- Need of Effort: In manual system, an Item's record is maintained in separate files so it takes much effort to collect data from several Stores for and if we want to change or delete the data of any

transaction then it has to be changed or deleted from all the files and places it stored.

- Needs Large Space: In manual work done data item has to be stored at several places, similarly student’s record is maintained in separate registers. It requires more storage space.

1.4 AIM & OBJECTIVE

1.4.1 AIM:

To make software fast in processing, with good user interface so that user can change it and it should be used for a long time without error and maintenance.

1.4.2 OBJECTIVES:

- To reduce the time for organisation.
- To increase efficiency and accuracy of the system.
    - To reduce pressure on the labour and relieving man power from repetitive and dull job.
- To make the retrieval of information faster.
- To make the system more feasible
- To reduce large amount of paper work.
- To make the system more reliable and to avoid any ambiguity.
- To reduce the cost factor of the system.
- To make the system more flexible.
- It provides a convenient solution of billing pattern.
- It maintains new entered category or products.

CHAPTER 2

SYSTEM SPECIFICATIONS

2.1 HARDWARE SPECIFICATIONS

Processor : Intel Core i7 Processor
RAM : 8GB(Minimum)
HDD : 40GB(Minimum)

2.2 SOFTWARE SPECIFICATIONS

Operating System : Windows 10
Front-end : Java Swing
Back-end : MongoDB
Languages Used : Java , NoSQL (MongoDB)

JAVA SWING

Swing API is a set of extensible GUI Components to ease the developer's life to create JAVA based Front End/GUI Applications. It is build on top of AWT API and acts as a replacement of AWT API, since it has almost every control corresponding to AWT controls. Swing component follows a Model-View-Controller architecture to fulfill the following criterias.

- A single API is to be sufficient to support multiple look and feel.
- API is to be model driven so that the highest level API is not required to have data.
- API is to use the Java Bean model so that Builder Tools and IDE can provide better services to the developers for use.

Swing Features

- Light Weight − Swing components are independent of native Operating System's API as Swing API controls are rendered mostly using pure JAVA code instead of underlying operating system calls.
- Rich Controls − Swing provides a rich set of advanced controls like Tree, TabbedPane, slider, colorpicker, and table controls.
- Highly Customizable − Swing controls can be customized in a very easy way as visual apperance is independent of internal representation.
- Pluggable look-and-feel − SWING based GUI Application look and feel can be changed at run-time, based on available values.

MONGODB

MongoDB is an open-source document database that provides high performance, high availability, and automatic scaling. MongoDB is a document-oriented database. It is an open source product, developed and supported by a company named 10gen.

MongoDB is available under General Public license for free, and it is also available under Commercial license from the manufacturer.

The manufacturing company 10gen has defined MongoDB as:

"MongoDB is a scalable, open source, high performance, document-oriented database." - 10gen

MongoDB was designed to work with commodity servers. Now it is used by the company of all sizes, across all industry.

FEATURES OF MONGODB

These are some important features of MongoDB:

1. Support ad hoc queries

2. Indexing

3. Replication

4. Duplication of data

5. Load balancing

6. Supports map reduce and aggregation tools.

7. Uses JavaScript instead of Procedures.

8. It is a schema-less database written in C++.

9. Provides high performance.

10. Stores files of any size easily without complicating your stack.

11. Easy to administer in the case of failures.

LANGUAGES USED:

1. JAVA

Java is a **programming language** and a **platform**. Java is a high level, robust, object-oriented and secure programming language.

Java was developed by *Sun Microsystems* (which is now the subsidiary of Oracle) in the year 1995. *James Gosling* is known as the father of Java. Before Java, its name was *Oak*. Since Oak was already a registered company, so James Gosling and his team changed the name from Oak to Java.

Platform: Any hardware or software environment in which a program runs, is known as a platform. Since Java has a runtime environment (JRE) and API, it is called a platform.

2. NOSQL

A NoSQL originally referring to non SQL or non relational is a database that provides a mechanism for storage and retrieval of data. This data is modeled in

means other than the tabular relations used in relational databases. Such databases came into existence in the late 1960s, but did not obtain the NoSQL moniker until a surge of popularity in the early twenty-first century. NoSQL databases are used in real-time web applications and big data and their use are increasing over time. NoSQL systems are also sometimes called Not only SQL to emphasize the fact that they may support SQL-like query languages.

A NoSQL database includes simplicity of design, simpler horizontal scaling to clusters of machines and finer control over availability. The data structures used by NoSQL databases are different from those used by default in relational databases which makes some operations faster in NoSQL. The suitability of a given NoSQL database depends on the problem it should solve. Data structures used by NoSQL databases are sometimes also viewed as more flexible than relational database tables.

CHAPTER 3

MODULE DESCRIPTION

The main modules in supermarket management system are:

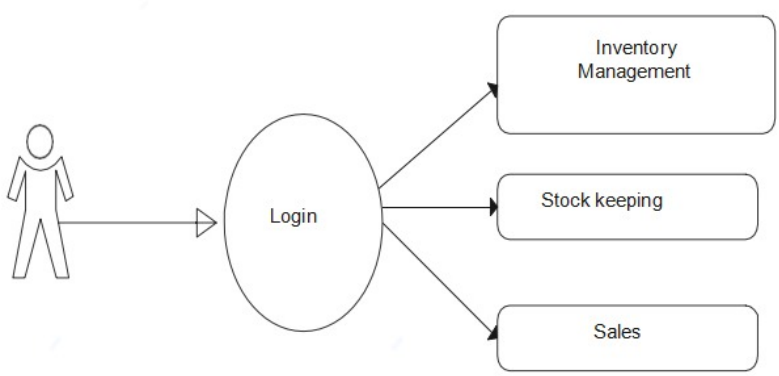
1. Administrative module: This module is handled by an admin who has full control over the system. Admin is required to log in to the system with a unique user id and password. They have control over all the modules and features of the system. Admin can allocate unique user id (username and password) to the employees and staffs.
2. Employee module: Employee can use this module with their user id. They can keep track of items in the supermarket, and are responsible for recording details of purchases and sales.
3. Purchase module: This module stores all the purchase details of the supermarket.
4. Sales module: This module stores all the sales details of the supermarket.
5. Billing module: With the help of this module, all the payment details based on purchases and sales can be shown.

CHAPTER 4

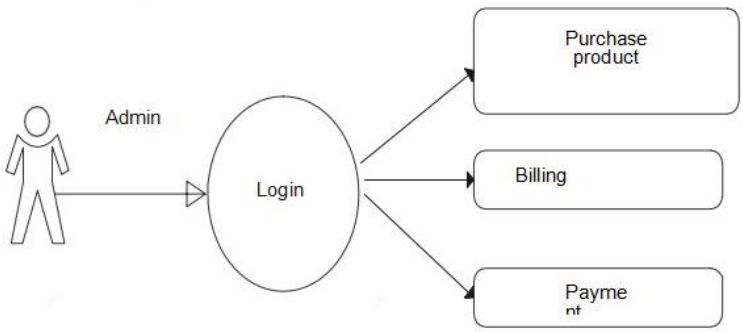
SYSTEM DESIGN

4.1 DATA FLOW DIAGRAM

ADMIN LEVEL:



USER LEVEL:



CONCLUSION

This software has been developed designed to reduce the time taken to handle the sales activity. It is designed to replace an existing manual record system for reducing time taken for calculations and for storing data. This system has been developed with oops concepts.The system is strong to handle daily operations where the database is cleared over certain time. This system will reduce manual work, calculations and will also provide periodic reports any time.

REFERENCE

1. http://www.bestprojectsidea.com/vb-6-0-synopsis/supermarket-billing- system/.
2. http://pdfebooklibrary.com/pdf/all-uml-diagrams-for-supermarket-billing-system.pdf.
3. https://www.techjockey.com/blog/supermarket-billing-software