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A Project Proposal
on
"BhojanWithRojan - The Digital Canteen Management System"

[Code No : ENGG 102]

(For partial fulfillment of 1st Year | 2nd Semester in Computer Science)

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Abstract :

Canteens are widely popular among various institutions around the globe. Most of these Canteens are manually operated making no use of the computerized systems. Manual systems usually create problems during peak hours. The ultimate aim of the digital canteen management system is to automate the existing traditional system which is manual. There is a huge line in the institution cafeteria throughout the break. From the wait at the payment desk to the serving point, a ton of time is spent waiting for the food, because of which, students and the faculty get late for their lectures. All teachers and students do want to figure out a way to do that or get rid of this waiting period. Considering this, we have planned to build a system designed to make the interaction between customers and staff seamless and more concise. Customers can load balance to their account and balance keeps deducting in each transaction.Our project named "**BhojanWithRojan** " uses C++ as the programming language, SQLite as the database management system, Drogon as the backend framework for exposing the API and QT as the Graphical User Interface (GUI). C++ is useful because of its Object Oriented Paradigm (OOP) and its cutting edge performance as a compiled language.

This system is efficient in maintaining customer's details and can easily perform operations on customer's records and also work to handle the information of the products available in a canteen. This system also reduces the workload of the canteen staff.

Keywords : *API*, *automate, backend, framework*

Acronyms/Abbreviations :

OOP	Object Oriented Programming
GUI	Graphical User Interface
RDBMS	Relational Database Management System

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Chapter 1 : Introduction

1.1 Background

In recent times technology has taken over every sector and is ruling over the world. Canteen Management system is a software that manages all the details of food items which contains name, image, price etc. Popularly, canteens are supported with pen-paper records, cash, manual calculations and manual record keeping of credits which in today's time in an incompetent to operate a business. Rendering exact changes proves to be an endless struggle. As within the traditional method the record is maintained in a very pen/book format. The existing system lacked data integrity, the books or entries are easily misplaced and there are not any backups for such cases.

The "Digital Canteen Management System" has been developed to override the problems prevailing in the practicing manual system. This software is supported to eliminate and in some cases reduce the hardships faced by this manual system. Moreover this system is designed for the particular need of the canteens to carry out operations in a smooth and effective manner. Our canteen management system **BhojanWithRojan** provides a friendly User Interface for numerous food outlets, menu design, billing features and much more. Implementation of such a system makes the operation of the kitchen and the whole of the canteen as effective and quick as possible .The prejudice of data integrity within the manual system is overthrown within the new canteen management system because it's fully computerized and it will even keep the records of past activities.

1.2 Objectives

The main objective of this project are to:

- To increase efficiency of managing the canteen
- Reduce paper work
- Cashless billing system
- Customers record

1.3 Motivation and Significance

In many Schools/Colleges, entire mess management and billing calculations are done manually till date. It is very time consuming and increases the chances of performing calculation mistakes. There is a huge crowd at the time of lunch / dinner. It would be possible to do the same work without using much effort and manpower if there existed a software for the same.Our software system, **BhojanWithRojan**, allows customers to order their food without having to call the staff. One can enter the ID and login to the account using a password . One can choose the food item to eat , can see the price of the item , and can order food items in certain quantities which removes the use of coupons and other manual work of the staff and can easily get food items. Our system will eventually eliminate the manual system and provide a cashless self billing system.

1.4 Expected Outcomes

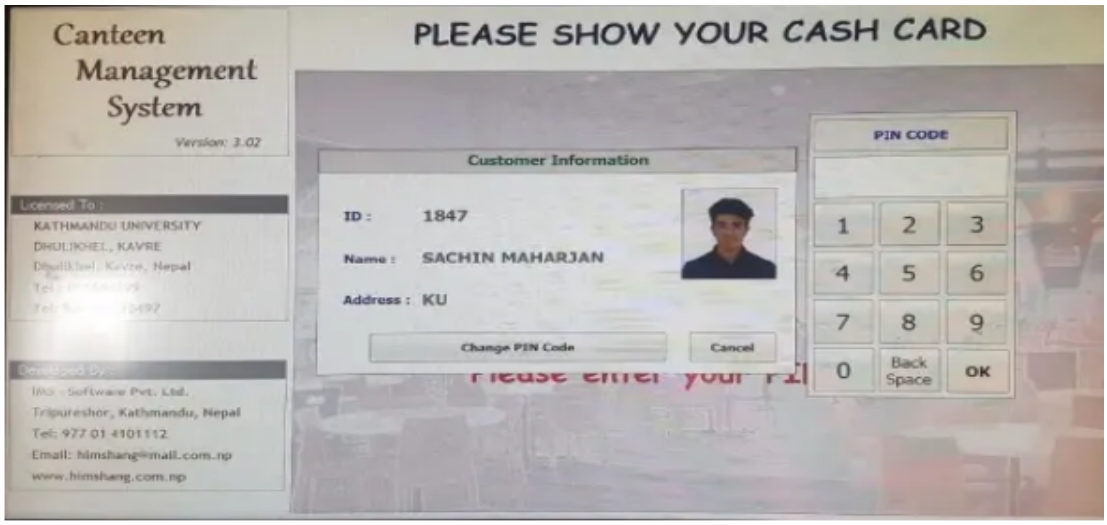
Our project **BhojanWithRojan** will provide a user-friendly user interface. One with the basic knowledge can interact with our software. One can login with their own unique credentials which provide safety. One can see the food items that are available in the canteen and can order the item by selecting the number of quantities as they wish. Our software will show the price of each item and as the client checks out, the food items get displayed in the staff's monitor, through which they can easily traverse each client's order and give out the food without performing the manual work of reading from coupons or any other form of physical token systems. Moreover, the client will be able to enjoy the features such as the ability to transfer his/her balance to another client's account, see his/her transaction history, see his/her daily usage in a graph and also download the data in his/her mobile devices just with a scan of QR code, which will distinguish **BhojanWithRojan** from other Canteen Management Systems easily.

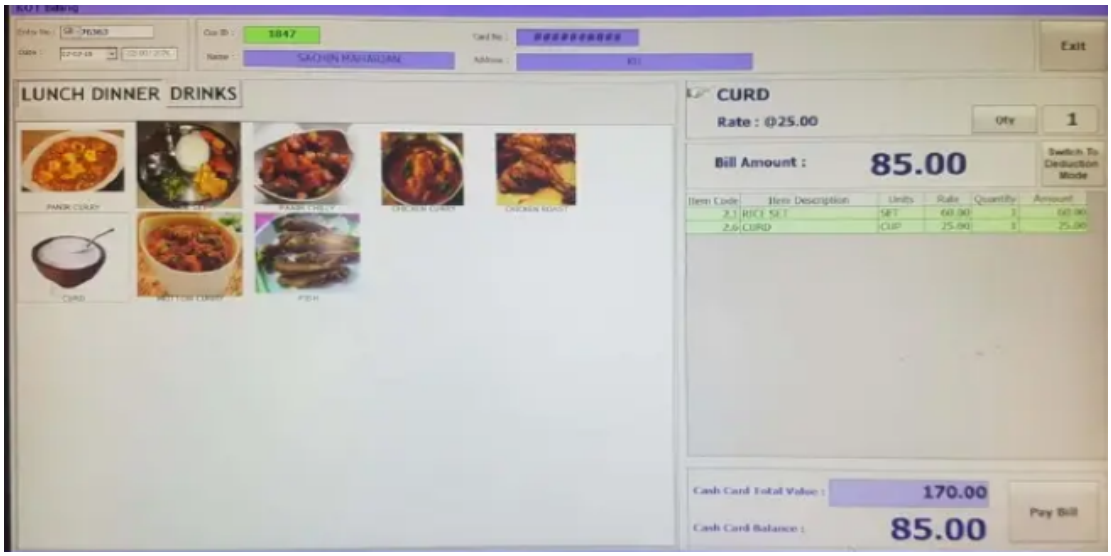
Chapter 2 : Related Works/ Existing Works

There are similar systems that are being used locally by different institutions to manage ordering. Some of such systems that are in use are presented below.

2.1 KU Canteen Management System

It's a food ordering software developed for Kathmandu University. By using this software one can choose the food they want from the menu, pay the bill, and track the ordering history as well.





2.2 Restaurant POS kenya Software

Restaurant POS kenya software is developed to address restaurant problems occurring due to restaurant operations, which range from ordering ,table booking ,stock and inventory, menu and recipes,customers,payments and many more.

Chapter 3 : Procedure and Methods

The following points illustrate our current plan for the project. We'll go through each step thoroughly to take this project to its completion.

1.Researching similar applications.

2. Designing GUI

3. Coding

4. Developing functionality.

5. Testing and debugging.

6. Finalizing the project and documenting.

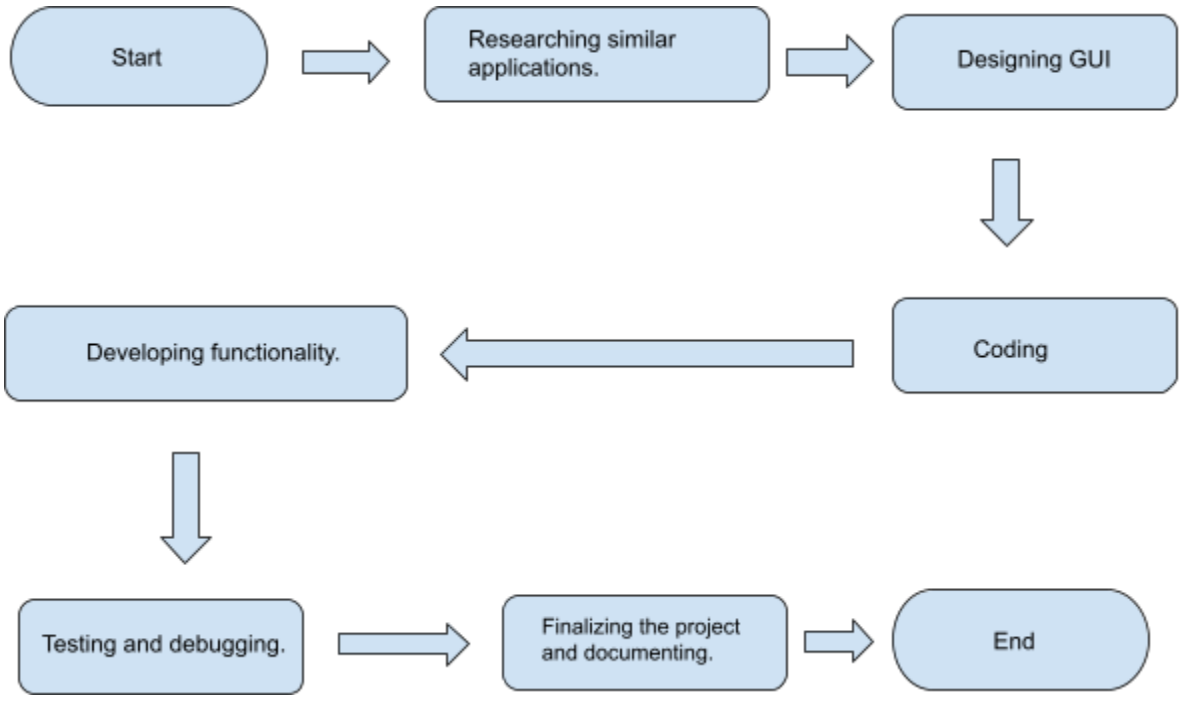


Fig : Software Development Flow Diagram

Chapter 4 : System Requirement Specifications

4.1 Software Specification

4.1.1 C++ programming language :

C++ A statically typed multi-paradigm general-purpose programming language developed by Bjarne Stroustrup as an extension of the C programming language.

4.1.2 Qt :

An open-source cross-platform multi-language widget toolkit that helps in developing GUI Application.

4.1.3 SQLite :

A RDBMS system contained in a C library embedded into an end program which has bindings to many other programming languages including C++.

4.2. Hardware Specification :

Any PC with Windows 10 or above can smoothly run this system.

Chapter 5 :Project Planning and Scheduling

We've planned to dedicate about 15 days to thoroughly researching similar systems and planning our own project. After that, we'll design the interface of the system. Then we'll begin the development of the functionality of the system. In this step, we'll also add additional features. Once the development is done, we'll test the whole system and address bugs that we might encounter. Finally, we'll polish the finished system and document it.

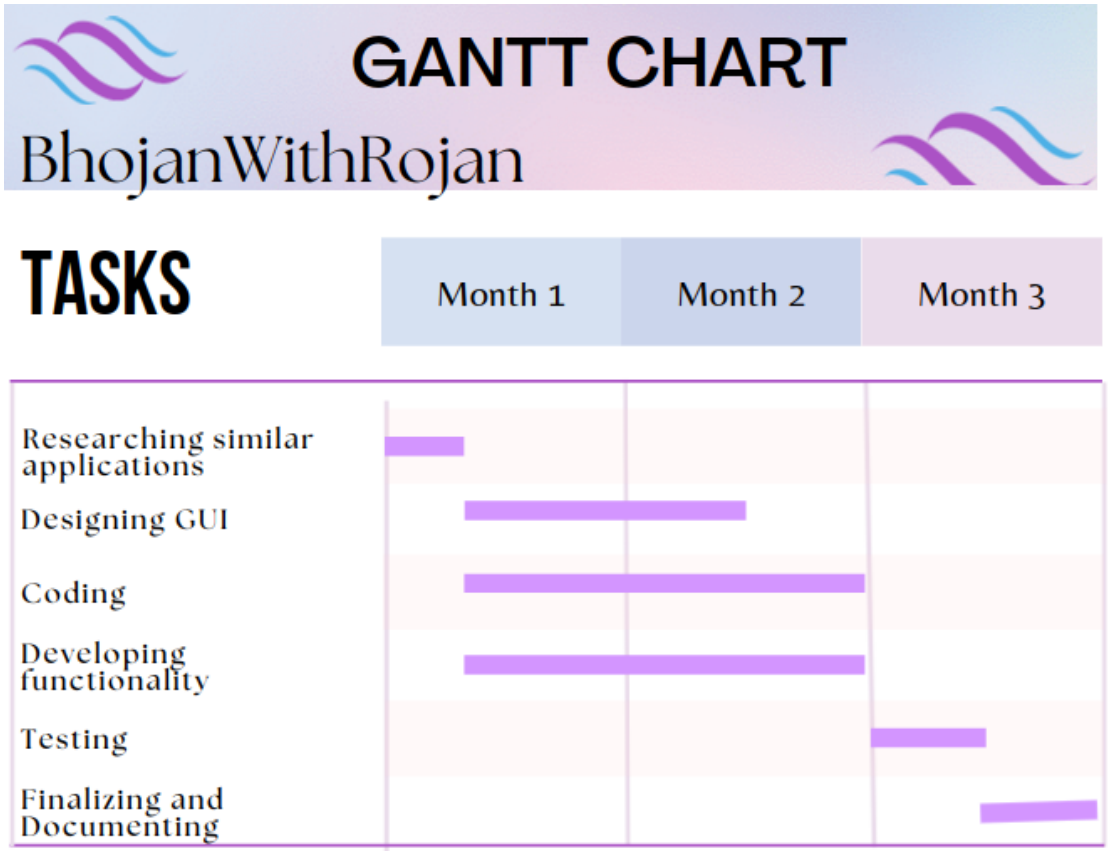


Fig : GANTT Chart

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