

DEVELOPMENT OF RESTAURANT MANAGEMENT SYSTEM APPLICATION

Adarsh Shinde, Rishi Choudhary, Siddhi Bairagi, Shruti Dhadi

Mechanical Engineering Dept.,
Vishwakarma Institute of Technology, Pune

ABSTRACT - *Restaurant Management System is a software that can be used to calculate and generate the bills in a restaurant.*

Traditionally restaurant owners used to calculate the bills using calculator and then write it down on a paper and hand it over to the customer. It became a challenge when there was more complex calculation and also taxes to add in the bill.

So, we come up with the solution to counter this problem. A software which can be used to easily calculate the total of the bill and generate a receipt which also includes the taxes.

Keywords : Restaurant Management System, OOP

I. INTRODUCTION

HISTORY :

Traditionally in Restaurants the total of a bill was calculated using calculations on paper or by using a calculator. It was then written on the bill and then given to the customer to pay it.

It sometimes becomes difficult when the bill is so large and have different things to add up. Also, now the different taxes are to be included that is the CGST tax which is levied by the central government. It is 5%. The SGST tax is also to be included which is levied by the state in which the restaurant is. In Maharashtra it is also 5%. It becomes very tedious job to do all these calculations. Also, there are chances of error which can further cause different consequences.

SOFTWARE :

The name of the software is Restaurant Management System. It is software which can save a lot of time by doing the complex calculations itself. There are no matters of errors as the computer never makes any error. We also get the digitally generated bill receipt which contains the details of the bill, date, time, place, taxes and other important things. This digitally generated can be printed and given to the consumer. The software can also be used to store the data of the meals and drinks which are being eaten in the restaurant to check which

meals have more demand and are popular among the customers. It can further be used to improve the products and services of the restaurant.

II. LITERATURE REVIEW

1. RESTAURANT MANAGEMENT SYSTEM

This was a project developed by Carl Abernethy in the supervision of Prof. Chris Taylor on 5th May 2010. It was a third year Project for BSc. In Computer Science and Mathematics in University of Manchester.

The project report documents the process of designing, developing and testing a software system to be used in a restaurant; usually given the name restaurant management system. By reducing the likelihood of human mistake, the restaurant management system aids communication amongst all staff within a restaurant. Carl Abernethy wrote this report as part of his third-year project, and it was released on May 5, 2010.

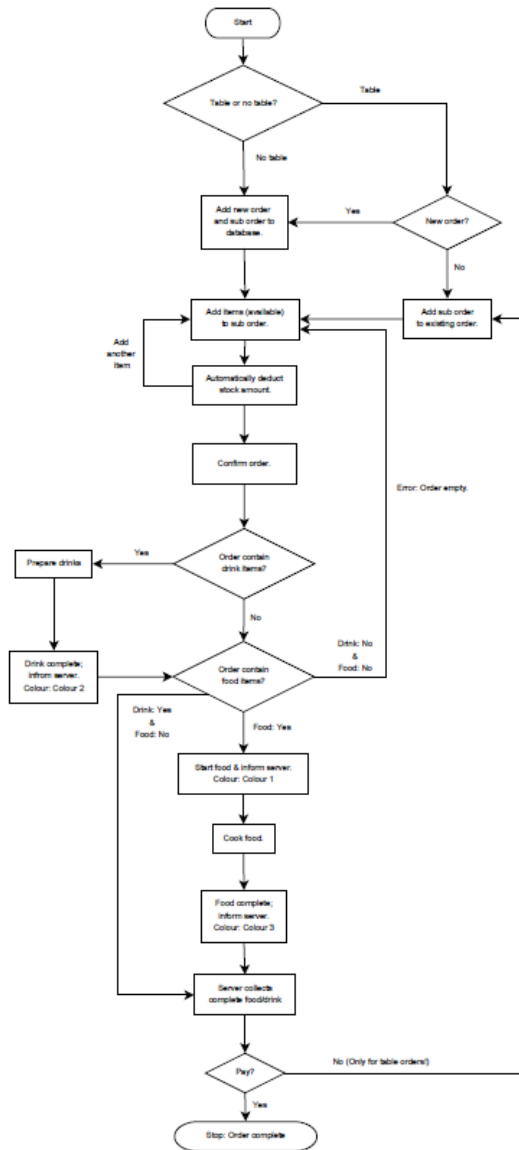
The goal of this project is to create an electronic restaurant management system that incorporates all of the knowledge and techniques learned in the field while avoiding frequent development blunders. All software engineering projects require project management, and sticking to a project plan is equally important.

Any business's major goal is to maximise profit by increasing efficiency and lowering overheads while maintaining customer happiness. Many restaurants currently use a paper-based method to communicate between the restaurant and the kitchen, which has been demonstrated to be one of the most expensive aspects of running a business as well as one of the least efficient. Despite the fact that this strategy is used in lucrative restaurants, there are a few issues that could be considered as diminishing the restaurant's efficiency:

- ▶ Handwriting causes miscommunication.
- ▶ Order logging that is unmanageable.
- ▶ Communication between the kitchen and the restaurant is inefficient.

- ▶ Order tracking and time management are difficult.
- ▶ Stock management is difficult.
- ▶ Statistical output is limited.

By using the electronic restaurant management system problems which are occurring can be reduced and profits can be increased



2. CORMS: AN AUTOMATED RESTAURANT MANAGEMENT SYSTEM

CORMS (Customer Oriented Restaurant Management System) is a restaurant management web application with an Android version. It possesses all of the characteristics of a rapidly involved science as well as its many properties. CORMS technology is integrated and has been built to optimise the labour force and simplify restaurant work flow through a strategic design and customer orientation. It may be used on a tablet and is adaptable and modular enough to satisfy the demands of

any business. CORMS is an attempt to integrate technology into a customer's dining menu. CORMS has a number of useful features that will not only assist your restaurant in updating its menu at any moment, but will also enhance the overall eating experience. The purpose of the tablet menu is to give a user-friendly interface by allowing for easy navigation and viewing of the digital menu, resulting in a pleasant experience. Customers can place orders for food using the tablet interface. Our idea aims to improve restaurant business while also incorporating the essence of science into the dining menu. Our restaurant management software is built to keep track of everything that happens within the restaurant, and it's all permission-based to prevent theft.

3. A Review Paper on Online Restaurant Management System

The technology was applied in a restaurant to save manual labour and improve work accuracy. This system organizes and maintains customer records as well as their online orders. This Android App was created with a user-friendly UI in mind. So that the customer can easily add and remove food items. The menu card of each restaurant contains a list of the numerous cuisine options offered. Customers can order food by just clicking on the place ordering menu. The messaging module instructs the provider to deliver the requested meal. The tracking module also keeps track of the order. The billing system generates a bill based on the food that has been provided. This approach eliminates all of the wasted time. Every order is linked to a specific table seat, and orders are created one at a time, just like on paper, but with more precision. Items can also be easily shared throughout the entire table, moved or edited, and noted, with the cost calculated in real time.

4. Foody – Smart Restaurant Management and Ordering System.

When it comes to judging the quality of a restaurant and its food, customers play a critical role in the modern food sector. Restaurants pay close attention to client feedback on their service because the company's reputation is at stake. The ability to offer services efficiently to reduce consumption time, as well as maintaining a high level of service quality, are key variables in determining customer happiness. Customers typically consider their favourite meals, as well as available seating and space options, while choosing a popular restaurant. Long wait times and serving the wrong order are two classic restaurant blunders that eventually lead to customer displeasure. The goals of this online programme "Foody" are to fix these flaws and deliver speedy and accurate customer service by creating individual menus for each customer based on their preferences. This concept is

realized as a mobile application that incorporates cutting-edge IT concepts like Business Intelligence, Data Mining, Predictive Analysis, and Artificial Intelligence. This incorporates images and 3D modelling, which provide physical information about meals such as colours and sizes, as well as the ability to inspect the meal's ingredients and available tables. The app also provides a real-time map to the eatery. The colour change of the table indicates the current table reservation status. Each customer's unique food recommendation and order is made by analyzing their social media data, and the system tells them of the wait time by calculating it. Food preparation and distribution are done on a whim. The research's expected outcome is the development of a fully automated restaurant management system with the aforementioned features, as well as the ability to avoid order confusion, provide a better view of the food, and allow customers to choose the menu according to their preferences in a short amount of time.

5. Research Paper on Java Interactional Development Environment Programming Tool

The Java programming language has grown in popularity, and many research projects focus on improving it or its runtime behaviour. A Java IDE (Integrated Development Environment) is a tool that makes writing and debugging Java programmes easier. Beginners will benefit from it as well. In this case, IDEs offer capabilities such as syntax highlighting and auto code completion to make coding easier for the user. For software developers, the IDE is a free and open-source IDE. Windows, GNU/Linux, and Mac OS X are all supported by the IDE. It's not difficult to set up. Using JIDE's Mobility Pack, you can quickly design Java apps for mobile devices. The integrated development environment (IDE) has become one of the most popular development tools, whether it's for web development or for desktop development. Whether designing a Swing UI, an enterprise application, or utilizing it as a framework for creating your own IDE, the IDE has become one of the most popular development tools.

6. Promoting Open-Source Technology in Education: NetBeans: The Perfect Open-Source IDE.

The NetBeans IDE is a multi-platform integrated development environment that runs on Windows, Mac OS X, Linux, and Solaris. NetBeans is an open-source integrated development environment (IDE) and application platform that enables developers to quickly construct web, corporate, desktop, and mobile apps. It includes a full-featured IDE that runs on various

platforms and supports practically every common programming language. Many developers are converting their programmes from popular IDEs such as Eclipse PDE, Zend Studio, and Macromedia Dreamweaver Ultradev to the NetBeans IDE. Many users and students who had previously used Borland's JBuilder were similarly pleased and at ease with the NetBeans IDE.

7. Study of Development of Java Applications in Eclipse Environment and Development of Java Based Calendar Application with Email Notifications

Eclipse is a popular tool for developing programming applications and software solutions in the professional world. It is open-source software with a large number of free libraries available. Eclipse was investigated for Java application development in this thesis. An application was created utilizing the Java programming language to supplement the research and gain hands-on experience with the Eclipse IDE. The proposed application is a desktop programme that runs on all current operating systems. The application was created with Oracle Corporation's Java SE (standard edition) version 1.7, which is the most recent version available. The application's GUI (graphical user interface) was built using the Java Swing API. MySQL database management system was used to create a database for event credentials. JDBC (Java database connectivity) was used to link the application and the database. Additional Java APIs were loaded into the Eclipse project workspace, and a detailed explanation of how to use external libraries in the Eclipse environment was provided.

III. TOOLS/ RESOURCES

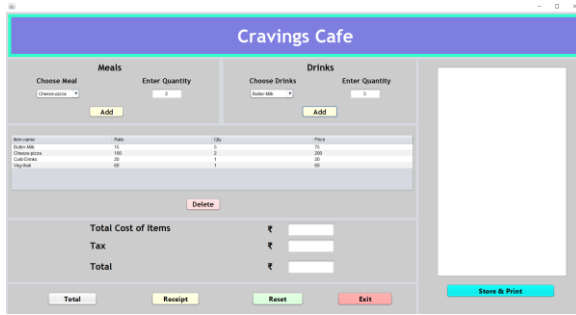
Java Language

Java is programming language which is easy to write, compile as compare to other languages. It provides an ability to run the same program on different platforms.

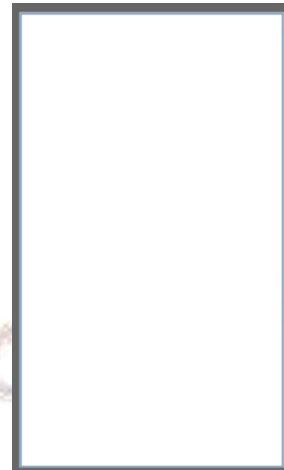
NetBeans IDE

NetBeans is an integrated development environment for java. NetBeans allows application to be developed from a set of modular software components called modules. NetBeans runs on Windows, macOS, Linux and Solaris. It has extensions for other languages.

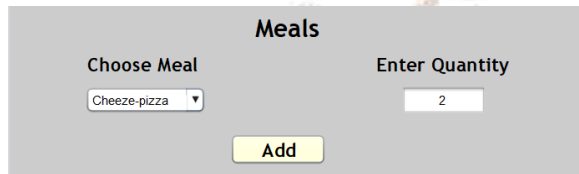
IV. PROJECT



The buttons are included in the software for performing different actions.



The software 'Restaurant Management System' which we have developed is for a café which serves some meals and drinks. The meals and drinks listed are shown in the image above.

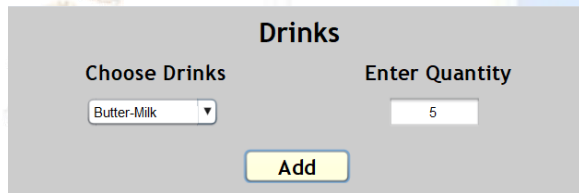


The text area is included to get the receipt.

V. WORKING

First section is the meals section. Here the meals which are available in the café are listed. The price of the particular is also listed after their name. There is an input text field and next to it is the total text field.

The working of the software is very simple. First, we need to fill the details of the quantity of things the customer has bought. Initially the quantity is 0(zero). After filling the quantities of respective meals and drinks press the total button. This will give the total and taxes and final total in their respective section.

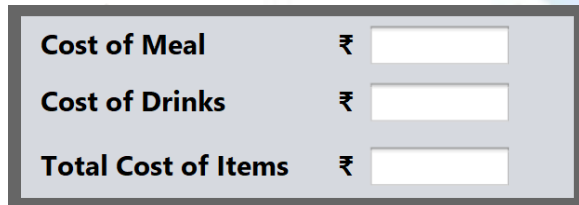


Example

The similar section can be seen for the drinks. The image above shows the drinks section.

To get the receipt, press the receipt button. This will display the receipt of bill in the text area.

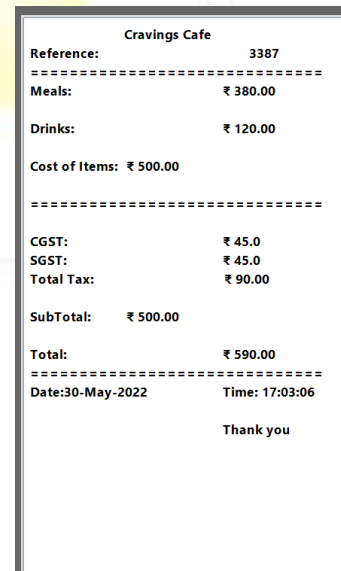
Example



The next section is costs and total cost. In this section the calculated total cost of meals, drinks and Final total is shown.

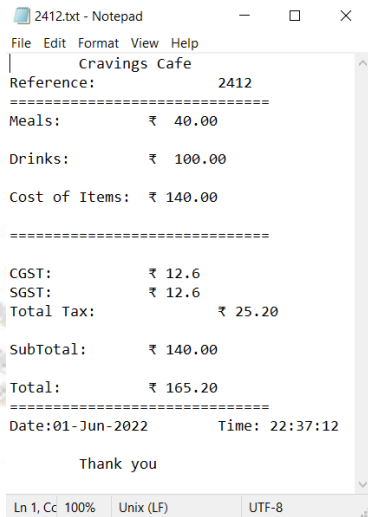
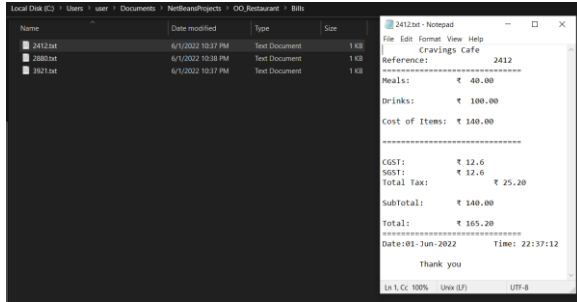


Next section is for tax and the amount to be paid by the customer after adding the taxes.



There is also option to store the bills if we want to check them later. The receipt of the bills is stored in the bills folder which is present in project folder. A store button

is present in the software . Pressing it creates a .txt file in the bills folder with the name of reference id and writes the complete receipt in that .txt file.



Finally press the reset button to reset everything

VI. CONCLUSION

The restaurant management system software can be very useful in saving time of the calculations . It is easy to use and very beneficial to quickly process the bill of the customer. It provides enough details and increase transparency as the taxes which are applied are directly given in the receipt of the bill.

The knowledge of Object-Oriented Programming was used to develop this project and make something useful that can help people to make the things easier and faster.

VII. REFERENCES

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