



IJIRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY

e-ISSN: 2319-8753 | p-ISSN: 2320-6710



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 10, Issue 7, July 2021

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 7.569



9940 572 462



6381 907 438



ijirset@gmail.com



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CANFOOD: An Android Food Ordering Application for College Cafeteria

Prof. Sathisha M S¹, Abhilasha², Anushree B S³, Arpita Illur⁴, Ashish Lokanath⁵

Professor, Department of Computer Science and Engineering, Canara Engineering College Mangalore, Karnataka, India¹

Student, Department of Computer Science and Engineering, Canara Engineering College Mangalore, Karnataka, India^{2,3,4,5}

ABSTRACT: This paper presents a solution for ordering food and managing canteen activities. Along with the rapid technology development on mobile phones, the numbers of mobile application for all industries have also increased and food industry is no exception. The on-demand food business pools large numbers of small catering businesses, customers, and couriers to provide ubiquitous and scalable food services. Cafeteria accepts orders placed by users on smartphones and prepares personalized meals and drinks. The “CANFOOD” is an Android application, developed for managing various activities in college/university cafeterias.

KEYWORDS: manage orders, payment, monthly payment, view cart, place order.

I. INTRODUCTION

The prevalence of online-to-offline (O2O) commerce using smartphones has led to increasing popularity of smart urban living. In particular, the on-demand food business pools large numbers of small catering businesses, customers, and couriers to provide ubiquitous and scalable food services. Catering shops accept orders placed by users on smartphones or computers and prepare personalized meals and drinks. Then, couriers deliver the food to the corresponding customers as soon as possible. The on-demand food market in the United States reached nearly 17 billion dollars in 2017. In China, 300 million people have placed at least one on-demand food order via an O2O service provider. It is reported that the number of daily on-demand food orders in metropolitan areas such as Beijing and Shenzhen has exceeded 500,000. Consequently, flexible and efficient food delivery is required to support this booming sector.

With the rapid development of e-commerce, sales online have become one of the main sales methods of the food industry. With the diversification of sales methods, the barriers to entry in the food market have decreased, and homemade food has gradually entered the market. Following the rapid expansion of the homemade food market, all sorts of problems about food safety emerge in endlessly. Some food producers found a huge opportunity in selling their products through e-commerce platform to obtain high profits. Although network food sales have brought immense convenience to consumers, due to the imperfection of the current food safety supervision system, especially for online sales of food safety supervision on the one hand, there still exist many problems.

II. RELATED WORK

[1] Students and faculty members can register themselves to the application by providing the required credentials such as Name, USN, Staff id, email id, phone number etc. and canteen owner is the administrator who manages the customers.

[2] Students and faculties can view items from the menu and order the food from their cart by providing the quantity required in addition to it.

[3] System allows customers to pay money in daily or monthly basis. Monthly payment is a type of payment facility provided for hostellers and faculty members so that they can pay for their orders in the end of every month. If user fails to make the payment, then user will no longer be able to order items till the payment is successfully completed.

[4] System supports UPI payment options as well.

[5] Admin can manage orders made by the users, update the menu based upon the cost and availability and manage payments.

III. METHODOLOGY

3.1 Modules

This application consists of three modules, they are:

- 1) STUDENT: Students are the end users. They register, login, order food and make payments.
- 2).ADMIN: Admin is the canteen manager who is responsible for managing the application.
- 3) FACULTY: They are end users who can login, register, order food and make payments.

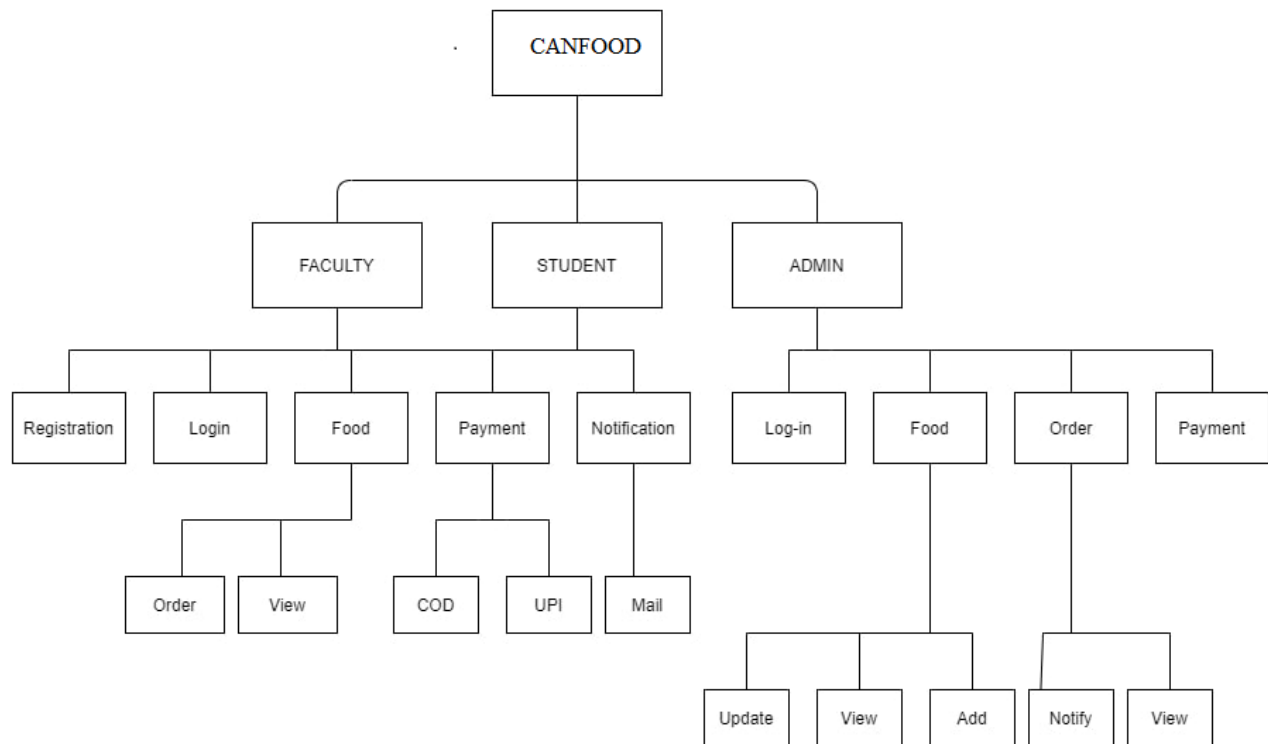


Figure1: Modular design

3.2 Pre-Requisites

HTML

Hypertext Markup Language (HTML) is the standard markup language for creating web pages and web applications. With Cascading Style Sheets (CSS) and JavaScript, it forms a triad of cornerstone technologies for the World Wide Web. Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as `` and `<input />` directly introduce content into the page. Other tags such as `<p>` surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page.

HTML can embed programs written in a scripting language such as JavaScript, which affects the behavior and content of web pages. Inclusion of CSS defines the look and layout of content. The World Wide Web Consortium (W3C), maintainer of both the HTML and the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997.

JavaScript

JavaScript often abbreviated as JS, is a high-level, interpreted programming language that conforms to the ECMAScript specification. It is a programming language that is characterized as dynamic, weakly typed, prototype-based and multi-paradigm. Alongside HTML and CSS, JavaScript is one of the core technologies of the World Wide Web. JavaScript enables interactive web pages and is an essential part of web applications. The vast majority of websites use it, and major web browsers have a dedicated JavaScript engine to execute it.

As a multi-paradigm language, JavaScript supports event-driven, functional, and imperative (including object-oriented and prototype-based) programming styles. It has APIs for working with text, arrays, dates, regular expressions, and the DOM, but the language itself does not include any I/O, such as networking, storage, or graphics facilities. It relies upon the host environment in which it is embedded to provide these features.

Back End: MY-SQL

MySQL officially, but also called ("My Sequel") is (as of July 2013) the world's second most widely used relational database management system (RDBMS) and most widely used open-source RDBMS. It is named after co-founder Michael Widenius's daughter, My. The SQL acronym stands for Structured Query Language.

The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements. MySQL was owned and sponsored by a single for-profit firm, the Swedish company MySQL AB, now owned by Oracle Corporation. MySQL is a popular choice of database for use in web applications, and is a central component of the widely used LAMP open source web application software stack (and other 'AMP' stacks).

PHP

PHP is a popular general-purpose scripting language that is especially suited to web development. It was originally created by Rasmus Lerdorf in 1994. The PHP reference implementation is now produced by The PHP Group. PHP originally stood for Personal Home Page, but it now stands for the recursive initialism PHP: Hypertext Preprocessor. PHP code is usually processed on a web server by a PHP interpreter implemented as a module, a daemon or as a Common Gateway Interface (CGI) executable. On a web server, the result of the interpreted and executed PHP code — which may be any type of data, such as generated HTML or binary image data — would form the whole or part of a HTTP response. The standard PHP interpreter, powered by the Zend Engine, is free software released under the PHP License. PHP has been widely ported and can be deployed on most web servers on almost every operating system and platform, free of charge. During 2014 and 2015, a new major PHP version was developed, which was numbered PHP 7. The numbering of this version involved some debate. While the PHP 6 Unicode experiment had never been released, several articles and book titles referenced the PHP 6 name, which might have caused confusion if a new release were to reuse the name.

3.3 Proposed System

In this paper, it is proposed to digitalize the procedures involved in ordering food items in college cafeteria, while at the same time maintain paramount and for-sure security methodologies. We wish to do the above by means of a mobile application. This application will allow students and faculty members to view and order food items after completing the payment with just a button click. Also, it simplifies all the processes of order management, including payment handling and maintenance at regular intervals. Monthly payment facility is a feature provided to faculty and hostellers so that they can pay the total mess bill for the month before the end of each month.

3.4 Architecture

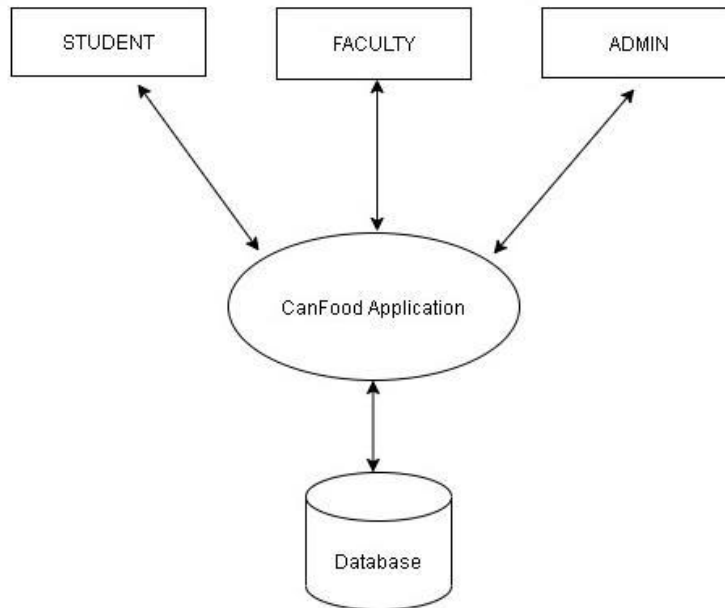


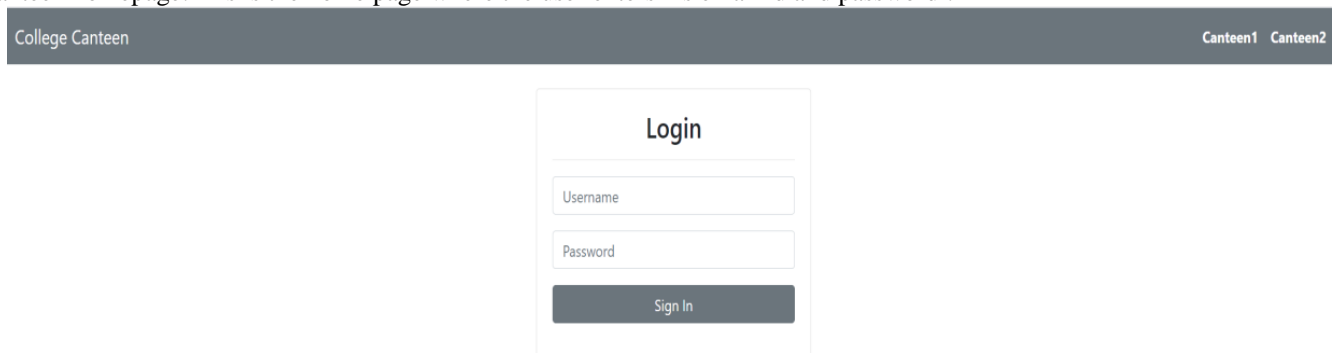
Figure2:Architectural Diagram

Architectural design is a graphical representation of a set of concepts that are part of architecture including the principles, elements and components.

The three users of the application are student, faculty and admin. There are connected to the database.

IV. RESULT

Canteen homepage: This is the home page where the user enters his email id and password.



The screenshot shows the 'College Canteen' homepage. At the top, there is a dark grey header bar with 'College Canteen' on the left and 'Canteen1 Canteen2' on the right. Below the header is a white login box with the title 'Login'. Inside the box, there are two input fields: 'Username' and 'Password'. Below these fields is a dark grey button labeled 'Sign In'.

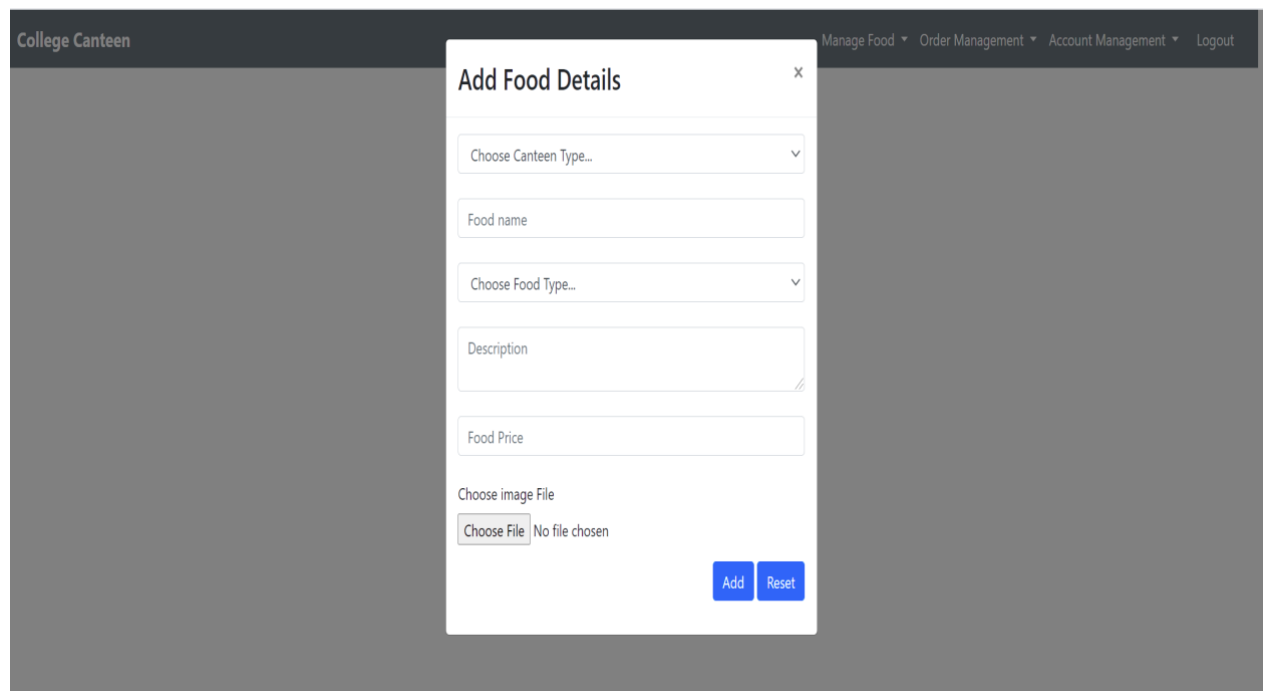
Figure3: Canteen homepage

Manage page: Here the admin can add food, manage food, account managing



Figure4: Manage food page

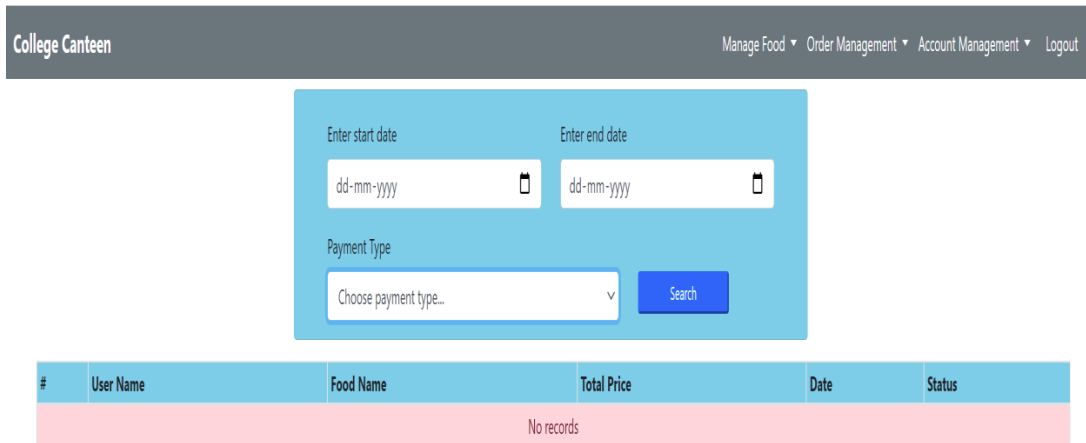
Add food page: Admin can choose the canteen type. Admin can add the food product. Admin can choose food type. He can give the description about the food and add image of the food.



The image shows a modal form titled "Add Food Details" with a close button (X) in the top right corner. The form contains the following fields: a dropdown menu for "Choose Canteen Type...", a text input for "Food name", a dropdown menu for "Choose Food Type...", a text area for "Description", and a text input for "Food Price". Below these is a section for "Choose image File" with a "Choose File" button and the text "No file chosen". At the bottom right of the form are two buttons: "Add" and "Reset". The background of the page is a dark grey header with "College Canteen" on the left and navigation links on the right.

Figure5: Add food page

Manage payment Page: In the paymentpage, User has to give the start date, end date and he can choose the type of the payment.



#	User Name	Food Name	Total Price	Date	Status
No records					

Figure 5: Manage payment page

V. CONCLUSION

The development of Canteen food ordering system involved many phases. The approach used is a top-down one concentrating on what first and steps for moving to successive levels of details. In primary phase, the system is designed at block level. The blocks are created on the basis of analysis done during the problem identification phase. Different blocks are created for different functions emphasis is put on minimizing the information flow between blocks. Thus, the activities which require more interaction are kept in one block. During this phase, strict adherence was made to prove software engineering principles and practices. The present system depends on the online management. This can be improvised by the automation of the software's. The data storing will take time and it requires the manual observation. With the help of the automation it would store the data instantly. This will reduce the effort time by the manual observation. The updated data will be finalized and alerts time to time to the admin. The machine learning algorithms can also be used for the prediction of the most preferred item by the customers. The customers will give the feedback and this will be sent to the database. Using the machine learning algorithms these feedbacks will be analysed and preferred food item will be displayed to the regular users on the online system. The menu list can also be updated according to the admin's choice by the shortcut methods used in the learning algorithms.

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