Design of an Electronic Pre-Ordering System for Academia

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Abstract – Today we are applying technology almost every part of our life to make easy our lifestyle and also to save time. University is the place where students planting seed of success in their future life. In ordinary canteen management system, time is the biggest issue for students because in the ordinary system at first students go to canteen, then they wait for the waiter by which students can know about available food items and price also, then waiter collect order from students and after this procedure canteen authority prepare food and serve to the students. This ordinary manual system wastes valuable time of students and authority. To reduce these problems, we developed a web application CMS (Canteen Management System) by using HTML, CSS, JavaScript, Bootstrap, jQuery for Front End and PHP MySQL for Back End, also use UI kit, Google map, carousel, Time picker for Plug in purpose. In CMS, any university can manage their canteen online and the students can save their time by using the pre-order system online. They can also pay later for the food and the manager also can keep track of their sales. In CMS application authority can see the order with details divided into three stages as cocking, delivered, and cancel. They can also see a list of the existing students and their information. They will have the feature to create an account for every new student. Students can order an item for a specific date and time and they will get a notification or reminder before the food is ready to deliver. Students can pay online and offline. Existing student needs to log in to order items. The new student can register for ordering items.

Keywords: online ordering, online payment, admin panel, notification, features, system architecture, data flow diagram (DFD), work flow system

1. INTRODUCTION

During class hours, university students have limited break time to get food, manually order and payment system waste a big amount of time so, we need a system to overcome several issues (Kadir, 2015). The Canteen Management System (CMS) is a web application. This application is developed to provide a service facility to canteen authority/admin and also to the customers/students. In this application, to order food online, students must register and then go to order food that order will be accomplished by payment at least 50% out of total price (Scifo, 2009). This online canteen management system provides students integrated food order and bill processing schemes to save their time (Kurland, 1985).

As we see in conventional canteens, they follow manual ordering, billing and record rearing system, but in the present world, it is not a proficient scheme to conduct canteen and this scheme also killed our valuable time (Chavan, 2015). So, by applying wireless communication and web services technologies, we developed a CMS web application that converts the ordering process as a simple task and provides simplicity, improving efficiency, accuracy for canteen authority and students by saving their time, reducing human errors and efforts (Fegade, 2019).
The main aim of the canteen management system is the computerisation of all processes which happen in a canteen (Abdullah-Al-Shafi, 2018a). By using this web application, any university can manage their canteen online and the students can save their time by using the pre-order system online. They can also pay later for the food and the manager (admin) also can keep track of their sales. In CMS application, authority can see the order with details divided into three stages as cocking, delivered, and cancel (Bahar, 2018). Authority has the feature to create an account for every new student and they can see a list of the existing students and their information. In our proposed system, existing students need to log in to order items, the new student need to register for ordering items (Abdullah-Al-Shafi, 2016a). They can order an item for a specific date and time and they will get a notification or reminder before the food is ready to deliver (Abdullah-Al-Shafi, 2018b). Before registration, users only can view the items menu, but they cannot be able to order food items.

In the 21st century, we can maintain our business by web applications over the internet (Abdullah-Al-Shafi, 2016b), our proposed CMS is one of them. In the ordinary system, students go to the canteen then they wait for a waiter by which students can know about available food items and price also, then the waiter collects orders from students and after this procedure canteen authority prepares food and serves the students (Abdullah-Al-Shafi, 2019a). This ordinary manual system wastes valuable time of students and authority. To reduce these problems, we developed CMS web application. Here students view and choose food items, view item prices, it has the notification features which is important for student satisfaction. CMS aims to atomise the canteen management system and give flexibility to the students (Dahake, 2017).

2. EXISTING SYSTEM

In existing systems, students go to the canteen then they wait for a waiter, by which students can know about available food items and price also, then the waiter collects order from students and after this procedure canteen authority prepares food and serves the students (Abdullah-Al-Shafi, 2018c). But at this time, people do not have much time to expend for this ordinary system (Shah, 2018). For these manual systems, sometimes students may miss their important lectures or they do not finish their breakfast/lunch properly (Fegade, 2019).

3. THE PROPOSED SYSTEM

Canteen Management System (CMS) is our proposed system which is a web application. To reduce the problems of the existing system, we developed this computer-based proposed system (Abdullah-Al-Shafi, 2018d). We developed this web application so that the student and the canteen management authority do not face any complications. By using this web application any university can manage their canteen online and the students can save their time by using pre-order systems online (Abdullah-Al-Shafi, 2018e). A more opportune and accurate method this application provides for authority in the canteen since orders are transferred to the server in the canteen authority instantly and displayed to the authority for further process (Kamarudin, 2009). The main aim of CMS is the computerisation of all processes which happen in the canteen (Abdullah-Al-Shafi, 2019b). In this application, authority/admin can see the order with details divided into three stages as cocking, delivered, and cancel. They can also see list of the existing students and their information (Abdullah-Al-Shafi, 2017). They will have the feature to create an account of every new student (Abdullah-Al-Shafi, 2019c; Abdullah-Al-Shafi, 2019d). Admin can also create feedback for the customers/students and manage the food item list.

4. FEATURES OF THE PROPOSED SYSTEM

This application provides the students/customers with food items information with details like name, price, availability, etc. (Cupps, 1999). In our proposed system, there are two types of users; admin, and students.

4.1 Feature for Admin

i. Admin can see the order with details divided into three stages as cocking, delivered, and cancel.

ii. Admin has the feature to create an account for every new student.

iii. Admin can also see a list of the existing students and their information.
iv. Admin can create feedback for the customers.

v. Admin can manage the food item list.

4.2 Feature for Students

i. Existing Students need to log in to order items.

ii. The new student can register for ordering items.

iii. They can order an item for a specific date and time and they will get a notification or reminder before the food is ready to deliver.

iv. Students can pay online and offline.

5. SYSTEM ARCHITECTURE

5.1 Admin

i. Login: By providing valid email and password, admin can be able to enter into the admin panel.

ii. Register new admin: Admin can register/create new admin by providing some information on new admin.

iii. Orders: Admin can view order with details.

iv. User List: Admin can view user list and assign services and make invoices of services which is taken by a user.

v. User Information: Admin can view user detail like ID, name, e-mail, phone number.

vi. Items Management: Admin can manage items as only admin recommended items are shown in the item list and admin can edit/delete items.

vii. Notification: Admin can notify students that order is prepared to be delivered to them.

5.2 Student

i. Registration: In this application users get a registration form, at first they must submit it.

ii. Login: Before ordering food items, users must sign in then they can be able to order food.

iii. Order: Users can see admin recommended items and be able to order these recommended items.

iv. Users can order food items online.

v. Payment: Users can’t pay their bills online through all cashing gateway.

Now we show data flow and use case diagram, workflow system, flow chart of those we have used in our proposed CMS project:

5.3 Data Flow Diagram (DFD)

Here we show a graphical representation of the “flow” of our system in Figure 1 which used for the visualisation of Data Processing. DFD shows the interaction between the system and outside entities (Abdullah-Al-Shafi, 2018f).

![Data Flow Diagram (DFD) for Our System](image)

Figure 1: Data Flow Diagram (DFD) for Our System

5.4 Flow Chart

Now here we show a diagrammatic representation and a step-by-step approach of our system called flow chart [23]. A flow chart of our system is shown below in Figure 2.

![Flow Chart of Our System](image)

Figure 2: Flow Chart of Our System

5.5 Work Flow of System

The work flow system is shown below in the Figure 3 which customises online food ordering system using the web-based application. It includes the three main areas of canteen: The Server, the kitchen and the cash counter (Mhamunkar, 2016). Here we are trying to show the whole works flow of the system.
6. SYSTEM IMPLEMENTATION

In this part, we want to show the implementation parts of our system. This system has been developed for canteen management. It is developed to provide a service facility to canteen authority/admin and also to the customers/students. By using this system, universities can manage their canteen through online and the students can save their time by suing pre-order system online.

6.1 User Registration

Our system starts with user/student registration. Before completion of the registration process of our system, users/students cannot be able to get any facilities from the system. For complete registration process, user must give his/her information like name, email, student ID and phone number. After providing all needed information, user can submit it. Here we show our user registration form in Figure 4.

Figure 3: Work Flow System of Our System

Figure 4: User Registration Form of Our System
6.2 User Login

If users successfully complete the registration part, then they can be able to login into the system. To login, the user must give student ID and password (Hasan, 2019). After login, they can be able to see food menu with price, location with map view etc. and also be able to order items. The login form of our system is given below in Figure 5.

![User Login Form of Our System](image)

Figure 5: User Login Form of Our System

6.3 Order

Existing user/student need to log in to order items and the new student need to register for ordering items. They can order an item for a specific date and time and they will get a notification or reminder before the food is ready for delivery. We can see order part of our system in Figure 6.

6.4 Payment

User/Student can pay online and offline. For placing an order user must pay at least 50% of the total bill and enter transaction ID. When student pay online, in the receipt part they can see their ordered items, individual price, total price, admin provided bkash and rocket mobile number by which they pay their bill etc. Here we see these in Figure 7.

![Ordering Part for User/Student of Our System](image)

Figure 6: Ordering Part for User/Student of Our System.

![Payment Procedure for User/Student of Our System](image)

Figure 7: Payment Procedure for User/Student of Our System.
6.5 Admin Registration
To enter admin panel, the admin faces the registration process. To complete the registration process admin must give some information like secret name, email, and personal phone number. After providing these information, admin will be registered and have the right to enter admin panel. We see this whole process below in the Figure 8.

![Figure 8: Registration Form for Admin in Our System](image)

6.6 Admin Login
After facing the registration process to enter admin panel, admin also face login process. For login into the admin panel, the admin needs to enter his/her email ID and password. After that admin can see each and every part of the admin panel and also do all his/her activities. We show this process below in the Figure 9.

![Figure 9: Login Form for Admin in Our System](image)

6.7 Admin Panel
After faced with the login part, admin can enter the admin panel and see all part of the dashboard. In our system admin have the right to create new admin. Here admin can see the order with details divided into three in three stages as cocking, delivered, cancel and also see list of the existing students and their information. Admin can create the feedback for the customers/students. Now here we show the admin panel in Figure 10.

![Figure 10: Admin Panel](image)

7. CONCLUSION
The purpose of this application is to make canteen management authority work easier and also students save their time which they spend waiting for food to be prepared. In this application authority can see the order with details divided in three-stage as cocking, delivered, and cancel. They can also see list of the existing students and their information. They will have the feature to create an account for every new student. It will be helpful at this time and we hope so because by using this web application, any university can manage their canteen online and the students can save their time by using the pre-order system online.
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8. REFERENCES


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