

DELICCIO FOOD

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Abstract : In this growing world of competition the management of time has become one of the most important aspects. As a result people today particularly the students have completely relinquished the idea that a healthy and successful career and life demands healthy intake of food and on proper time. The world today is all about an ongoing race which everyone wants to win and as a result the students study hours in educational institutions have been deeply affected. There is no proper equilibrium and this imbalance has greatly affected the canteens and mess in these educational institutions and as a result quality of service has deteriorated over the period of time and that isn't looking like its stopping any time soon. Since there is a huge pressure on these outlets to serve huge number of students in limited time, this has resulted in lack of importance given to hygiene and environment in which these items are being prepared. So, there is huge need of bringing equilibrium in the working hours of these canteens and study hours of students and this system 'DELICCIO FOOD' which is an online food delivery system does the same.

IndexTerms - Canteen, Mess, Refectories, Students, Customers.

I. INTRODUCTION

The world today prefers multiplexes and malls; this trend simply shows the value of time in modern times and wastage of it in any form affects the growth of individual and group commonly. The general idea of this project is to make the working hours of refectories such that it reduces their burden and also doesn't affect the study hours of the institutions. By the use of this system we can take care of majority of the complications and issues mentioned above. Also it helps reducing the strain of both students and workers at these Messes. This is similar to outsourcing, where students outsource their food requirement to the canteen that take care of it effectively by charging them for their exclusive services offered.

This system will comprise of a user interface where students can log in with their credentials provided to them and find the items that are available to them for the upcoming recess. They can scroll through all the items available and choose the one which they would like to have. Of course, this entire process is expected to be done about certain time before the beginning of their recess. A special wallet for every student is also maintained in the database and thus saving them the precious time and also from burden of carrying cash. Every time an item is ordered the wallet is deducted the amount by which the item is being charged. Students are simply required to deposit the money into the wallet periodically. The invoice is directly sent to the customers e-mail depending on the demand of customer either daily or weekly or monthly.

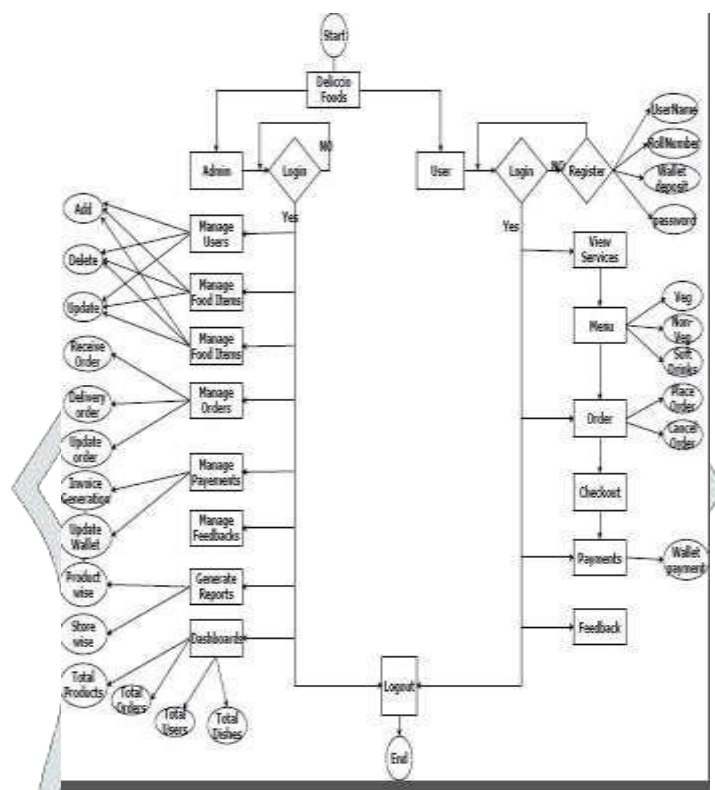
Sometimes due to some unforeseen accidents, some kind of network breakdowns might occur during the process of ordering, in that case the entire order is cancelled and the order has to be made freshly again after refreshing the system, if the money is deducted, then it will be refunded. If a student wishes to cancel his/her order then It should be done within a stipulated time before the item is out for delivery. This paper is organized as follows, In the beginning we talk about the working of the system in general and how this is can be used effectively and easily to solve the problems mentioned earlier, the paper also includes various results of datasets that has been observed during the study of the system, the next part talks in detail about the large number of advantages that this system provides other than the existing traditional methodologies. This paper will also explain how the system could be made more effective and quicker by involving the concepts of machine learning.

II. LITERATURE SURVEY

Tuhin Ghosh, etal [1] discusses about an automated restaurant system where customers can order their food from restaurants through their android based tablets which is directly referred to kitchen who serves the order on first come first serve basis. The main idea is that to have a ease of ordering and serving of orders in a hassle-free way that doesn't cause any kind of issues to anyone involved. Varsha Chavan etal [2] has proposed a system where customers directly create their order before reaching restaurants by the means of pre-selected orders available with restaurants and thereby, saving the time waste looking up the paper menus and hindrances caused due to it. The solution provides easy and convenient way to select pre-order transaction form customers. Ashwini Bankar etal [3] implements the modern innovation such as multi-touch module, RF module, Meal Serving Robot and database to improve quality of services of Restaurant and to enhance customers' dining experience. Basically it simply makes the restaurant system more automated and reduces the burden of both customers and restaurants simultaneously. Akash Patil etal [4] covers the whole order process of a restaurant including the interaction between customer, the waiter, the kitchen and the cashier through android application and desktop based software. The system will also include a database maintaining the record of employees. Digital Smart Menu could be replacement to paper-based menu. Parag Patil etal [5] implements the system where any

meals or service provider be it a restaurant or home makers can register themselves and order foods to customers who have also registered themselves for the same. The registered customers then can order their desired service from their desired service provider. R. Adithya, Abhishek Singh [6] proposes an online food delivery system that sets up a food menu online and customers can easily place the orders as they like. Also with a food menu, online customers can easily track their orders. Increasing use of mobile application has motivated the development of this system

III. WORKFLOW DIAGRAM



Proposed Model

Basically the System under consideration consists of two interfaces, one at the customer end and one at the canteen end for the effective management of the orders made. They are various modules which are utilized at the both ends for the smooth functioning of the system. The first part of the customer interface is REGISTRATION where the users are required to register themselves for the services on the offer by giving their username, password and room number mandatorily. After the registration is completed the users are redirected to the homepage and must LOGIN using their credentials given during the time of registration to use the system and order the desired product from the website. After logging in the home page consists of a menu of food items that are currently made available by the system.

There are all different categories of food like vegetarian, Non-Vegetarian, beverages, Chinese etc. The users can make the order according to their desire among the food items available and choose the method of payment either from the wallet or cash at the time of delivery. The orders must be made before the beginning of the lunch time and must be final and cannot be cancelled after a stipulated time interval. An online wallet is maintained for every student registered in the system. Every time an item is ordered the wallet is deducted the amount by which the item is being charged. Students are simply required to deposit the money into the wallet periodically. The customers can also choose their service provider from whom they wish to receive the order, because sometimes customers have trust in one store service more and prefer it over others. After placing their order and choosing the mode of payment customers are required to checkout from the system after verifying their order and confirming it. When the customers checkout, the order is reflected at the canteens side that then check the order and follow the steps below to fulfill it according to the demand and on time effectively.

Now, at the canteen end the administrator of the system receives the order accordingly. This interface consists of various modules too and is required for the effective working of the systems. One of the most important functions of this part of system is management of the orders which is made by the customers for which a module called Manage orders is utilized. The orders made are reflected here and are required immediate attention. The payment part and delivery are also part of this module. After receiving the order and confirming it the money is deducted from the wallet and deliver is done according to information available in the database. The products and categories of food items which are displayed on the customer’s side for the purpose of ordering can also be added, deleted or modified accordingly using the modules Manage Product and Manage Food Category respectively.

The Admin of the system can also add or remove the stores according to their popularity and demand. A student database is made available to the canteens. This consists of the room number and recess time for each and every student. So, whenever an order is placed the canteen looks at the database and knows where and when to deliver the food automatically. The Admin also has a specialized dashboard which keeps tabs of entire process and system and helps the canteen to function effectively. There is also a module for Reports which generates the reports and graphs and helps the canteen to understand about their growth more accurately and helps in important decision making process about their business. There is also options for customers to give their feedback and help in improving the services offered.

There are many advantages of this system over the traditional systems, Apart from being an online restaurant, it encapsulates the idea of both e-commerce and hotel management effectively and thus forming a join between two completely different subjects of Engineering and Hotel Management to improve the lifestyle of busy students of today. The quality of food is improved drastically and also the environment in which it is prepared.

There is a proper balance between the study hours of student and working hours of the messes. Since an online wallet is maintained, there is no wastage of useful time in payment through cash/cards. As the entire process is online, the streamlining of order and delivery is very effectively administered suiting the needs of both students and institutions. This is also an environment friendly process which doesn't cause any kind of wastage or shortage of food. Also there isn't any use of paper or plastic either for delivery or for the invoice thus not causing any kind of pollution or disturbances to the nature. Students don't have to worry about their lunch and it also saves their time wasted in travelling from class to canteen and then back to class every day in a loop. Since the canteen doesn't has to fret about all the students in the institution at any given time, the food prepared is generally of high assurances and healthy.

The working of the system by using all these modules is explained below. Addition of food items is completely the sole authority of the admin and student are only required to choose between the items and stores that are made available to them by the canteens

IV. RESULTS AND DISCUSSION

For our analysis and study we have taken a smaller test dataset and run the system using them for about a week and the results have been included as a part of this paper in further sections. The system has been tested at all the ends of interface and very satisfactory results at all fronts have been obtained. The experiment included the following:

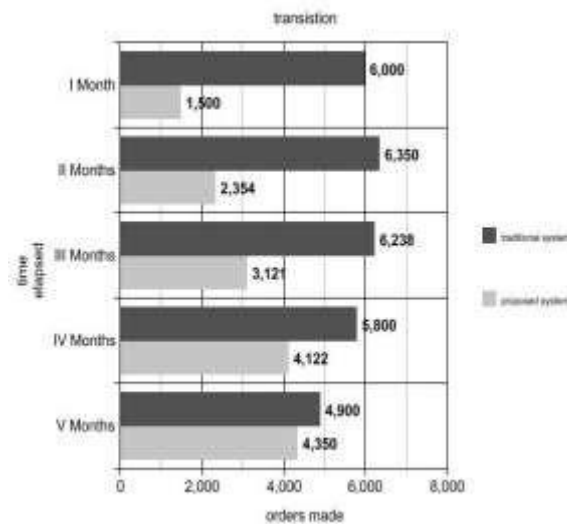
First an user registration was made using an unique Roll number with the roll number and timings of the lunch time mentioned mandatorily. After the Registration is done, users are required to login using their credentials and have a look at the food items available for their service. Users can select from the wide variety of food available witch their prices mentioned right along with them and confirm the order by checking out and selecting the payment options made available to them.

The Admin at the canteen side looks at the orders by using manage orders modules and finds the unique id of the student who ordered the food. After getting the Id a search is made in the users list to know the exact time and location of delivery which happens to be the lunch time and classroom of the student respectively. The Admin also generates the Invoice for the order after confirming that the payment has been confirmed and sends it to the user's electronic mail. Let's say that a user bearing the Id 16311a1285 orders the food from the system.

This same is reflected at the canteen's side. The Admin there searches for the Id in the database and finds out the room and time (in this case 2401 and 12:45pm respectively). This user makes the payment and checks out after confirming the order. The canteen finds out about the order made, checks the time for delivery and indulges in preparation of the food accordingly. The food is then sent out for delivery on time after proper packaging is done and delivered to the students.

The students can also give their feedback that would allow the service providers to improve their services according to the demand for the effective working of the proposed system. Thus this system solves the problems caused by existing traditional system and helps not only service consumer but also service producer and provider simultaneously and also makes the educational institution following the system ideal for everyone involved. As the usage of system is slowly normalized in the daily routine the implementation of machine learning and Artificial intelligence would make the system much more effective and smart. The system could then automatically predict and show the food items to the customers according to their preference.

In the beginning the transition from traditional to the proposed system was difficult and a slow process but slowly as the students realized the importance and benefits the process become smooth and due the much better flexibility the system gained the importance and usage and users both increased. This has been very aptly shown in the graph below that shows how the transition has become slowly possible. The bar of black color represents the usage of the traditional system currently being used and that in light color show the usage of proposed system.



Order Vs Time taken Bar Chart

V. CONCLUSIONS

Delicicio food can be utilized not only in educational institutions but might also be included in industries where the working hours are very unevenly distributed. This might seem similar to dabbawalas prevalent in India particularly in Mumbai where the lunch boxes are taken from houses and are delivered throughout the city by the lunch time. This system does the same but on a small scale and is an online process. One of the major limitations on this system from being integrated with industries is that it requires a minimum knowledge of the usage of internet on mobile or other platforms, which is not always feasible. One more problem that might arise is that people are not often susceptible to changes and might snap at the idea of it as they are habituated to the more traditional ways in practice since ages. But again this is the way forward and is of utmost importance for both the students and Canteens the same. The hassle free ordering and delivery without wastage of time and energy is something that everybody desires and this system ensures that in big way.

Therefore, the conclusion of this system is that it helps solving the issues faced by the users and is both user and service provider centric solving majority of problems of canteens/messes in the educational institutions. The results of the Research prove that the system is very effective in solving and addressing the problems and issues that it was intended for. Both users and usage will increase with time and gradually it will replace the existing and largely ineffective traditional systems. System is very flexible and as a result it can be modified according to user needs according to their feedback of the users. There is a wide scope for this system because of the large amounts of educational institutions present and deplorable conditions of canteens and their services in these places

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