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AUTOMATED FOOD ORDERING AND PAYMENT SYSTEM

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ABSTRACT:
This system integrates the benefits of an ordering food with the convenience of an online excitement and going with the technology, minus the commuting hazards and expenses. It will usher in the immense flexibility and sophistication in the existing manual platform structures, with the perfect blend of synchronous and asynchronous interaction. It provides a means of collaborative e-ordering for the customers.
This online application enables the end users to register online, select the food from the e-menu card, read the e-menu card and order food online by just selecting the food that the user wants to have. The results after selecting the food from the e-menu card will be directly sent to the selected restaurant. By using this application the work of the Waiter is reduced and we can also say that the work is nullified. Its benefit is that if there is rush in the restaurant, there will be chances that the waiters will be unavailable and the users can directly order the food to the chef online by using this application.

KEYWORDS: DFD, ERD, Food Portal, Table Booking, Web-enable Food Ordering, Food Delight

I. INTRODUCTION:

A. PURPOSE:

The manual restaurant ordering system relies on a lot of manpower to handle all the process from taking order from customers, placing order, tidy up the table and cleaning the dishes. Therefore this system is developed to reduce the number of manpower in ordering task and at the same time reduce the monthly cost for the restaurant. Customer can make their order through the system and directly stored to the database. [1]
What we propose is an online ordering system, which is a technique of ordering foods online applicable in any food delivery industry. The main advantage of my system is that it greatly simplifies the ordering process for both the customer and the restaurant. When the customer visits the ordering webpage, they are presented with an interactive and up-to-date menu, complete with all available options and dynamically adjusting prices based on the selected options. After making a selection, the item is then added to their order, which the customer can review the details of at any time before checking out. This provides instant visual confirmation of what was selected and ensures that items in the order are, in fact, what was intended.
This system also greatly lightens the load on the restaurant's end, as the entire process of taking orders is automated. Once an order is placed on the webpage, it is entered into the database and then retrieved, in pretty much real-time, by a desktop application on restaurant's end.
Within this application, all items in the order are displayed, along with their corresponding options and delivery details, in a concise and easy to read manner. This allows restaurant employees to quickly go through the orders as they are placed and produce the necessary items with minimal delay and confusion.
Also, registered customers will get a 20% discount on the first order they place successfully using this system.
Another good thing is the availability of e-wallet to the user, which can be recharged by the user at any point of time and this money can be used some time later by the user for ordering food whether he/she has cash/credit card available with him/her or not at the time of placing order.

This system is also going to introduce the concept of referral discount, which means a registered customer will get Rs.100 in his/her e-wallet if a person, he/she has referred to use this system, has registered to the system and placed order using it. [5]

B. SCOPE:

The main aim is to provide a food portal where users can select a restaurant of their choice from the list, order food online and get the food delivered at the given address. Also, the restaurants can get the customers online.

There are two categories of users accessing the database:

1. The people who want to order the food.
2. The restaurants providing the delivery of food at required address.

It provides facility to store information in the database and hence perform required modification.

It also provides the security of the data provided by the users as cryptography is used where necessary.

This system has a user-friendly interface so that the user can easily adapt to new system.

The data is reliable and so developed that if at some later stage, it has to be upgraded, the database is not affected adversely. [5]

II. SYSTEM ANALYSIS:

A. INTRODUCTION:

After analysing the requirements of the task to be performed, the next step is to analyze the problem and understand its context. The first activity in the phase is studying the existing system and other is to understand the requirements and domain of the new system. Both the activities are equally important, the first activity serves as a basis of giving the functional specifications and then successful design of the proposed system. Understanding the properties and requirements of a new system is more difficult and requires creative thinking and understanding of existing running system is also difficult, improper understanding of present system can lead diversion from solution. [2]

B. MODULES INVOLVED

Following tasks can be performed with the application:

1. User Maintenance
2. Restaurant Maintenance
3. Ordering System

User Maintenance: Creating, Granting and Revoking access to users.

Restaurant Maintenance: Creating, Granting and Revoking access to restaurants.

Ordering System: In this order can be placed by the users, it is then forwarded to the restaurant and order is then delivered. [3]

1. Order number
2. Order History
3. Date Ordered
4. User information
5. Name of restaurant
6. Status

Following additional tasks also can be performed by this application:

1. View Profile
2. Edit Profile
3. View History
4. Change Password
5. Forgot Password
6. Feedback.

C. USER INTERFACES:

The following user interfaces will be provided by the software:

1. Welcome Screen: This is the very first screen of the portal where user can get the introduction about the portal. Also, he can direct himself to any of the page by clicking on the links.
   If any user wants to order food without signing then it can be done on this screen itself by selecting a restaurant of his choice from the given list of registered restaurants.
2. Customer Login Screen: This screen is accessed by the user who wishes to register for ordering and avail several discounts as discounts are only for the registered users. It prompts the customer for certain specific details and registers him as an authentic user by validating his access against a password. So, anytime he wants to access the portal, it can be done with his email id and password.
3. Restaurant Login Screen: This screen is accessed by a restaurant that wishes to invite customers for ordering food and is registering as a user of the portal for the first time. It prompts the restaurant for certain identification details and once provided, the restaurant is registered as a valid user of the portal with a password protected access.
4. User Profile Screen: This screen is accessed only by a registered user where he can see view his profile, edit his profile, change password and can also view history related to past orders. Also, he can see the list of registered restaurants and choose his favourites for orders.
   Registered customers will also have the option to check what all coupons they have currently and till when these coupons are valid. [4]
5. Restaurant Profile Screen: This screen is accessed only by a registered restaurant where history of past orders can be viewed, password can be changed, and profile of the restaurant can be viewed or edited in case of any information change. It can also update its menu if needed.
   Also, they can select or deselect the option of providing discount coupons, or change the percentage of discount to-be-provided. [4]
6. Registration Screen: This screen can be accessed by either customer or restaurant for creating new account. User can choose himself as a customer or as a restaurant and accordingly fill in the details to get registered.
7. Feedback: This screen can be accessed by anyone using the portal including unregistered user, customer or restaurant. User can fill in the given feedback form and accordingly it will be considered.

III. SYSTEM DESIGN:

A. INTRODUCTION:

Software design sits at the technical kernel of the software engineering process and is applied regardless of the development paradigm and area of application. The importance can be stated with a single word “Quality”. Design is the place where quality is fostered in software development. Design provides us with representations of software that can access for quality. Design is the only way that we can accurately translate a customer’s view into a finished software product. Software design serves as a foundation for all the software engineering steps that follow. Without a strong design we risk building an unstable system-one that will be difficult to test, one whose quality cannot be assessed until the last stage. [2]

B. ERD (ENTITY-RELATIONSHIP DIAGRAM)

1. The relation upon the system is structured through a conceptual ER-Diagram, which not only specifies the existential entities but also the standard relations through which the system exists and the cardinalities that are necessary for the system state to continue.
2. The primary purpose of the ERD is to represent data objects and their relationships.

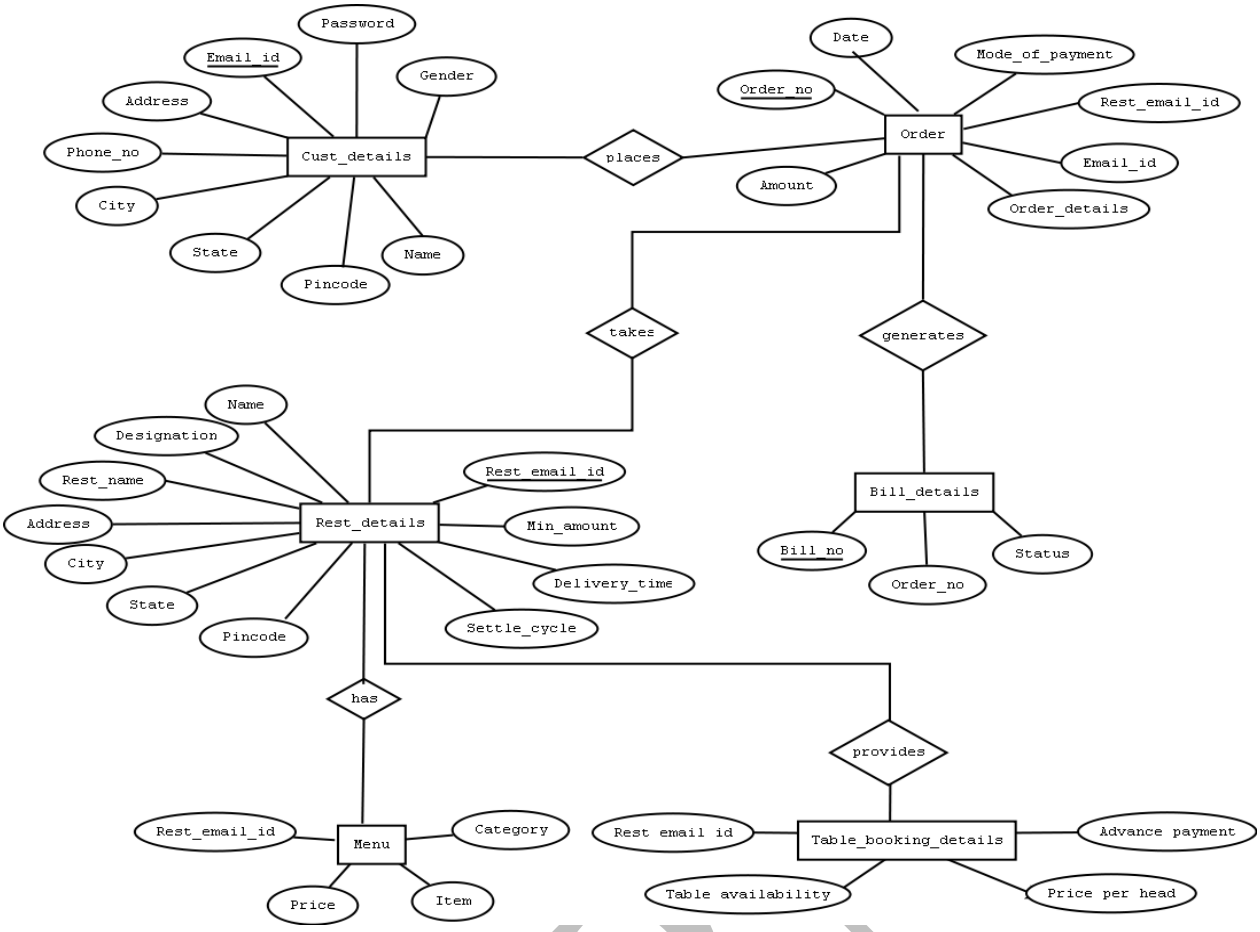

Fig. 1. Proposed System ERD

C. DFD (DATA FLOW DIAGRAM):

A DFD is a graphical representation of the "flow" of data through an information system, modeling its process aspects. Often they are a preliminary step used to create an overview of the system which can later be elaborated. DFDs can also be used for the visualization of data processing (structured design).

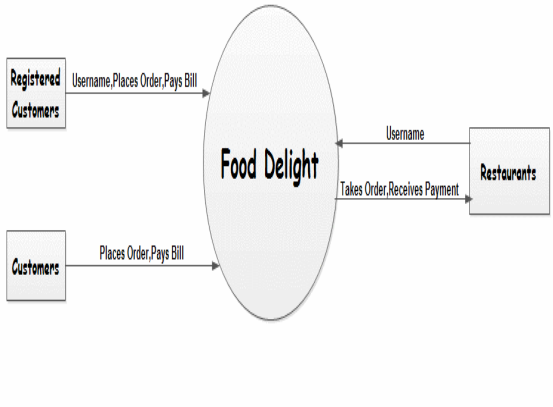

Fig. 2. 0-level DFD

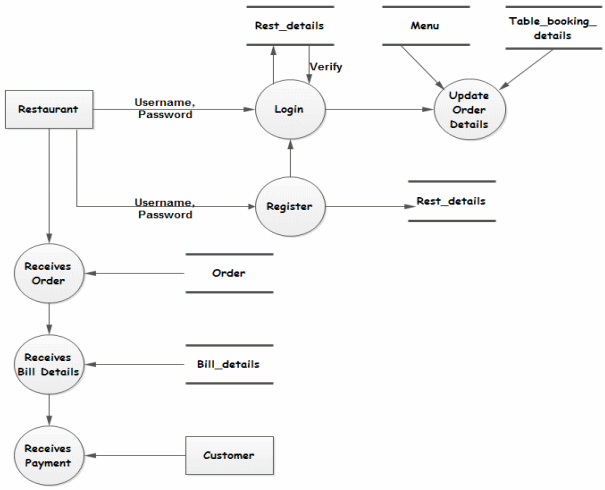

Fig. 3. 1st level DFD for Restaurants

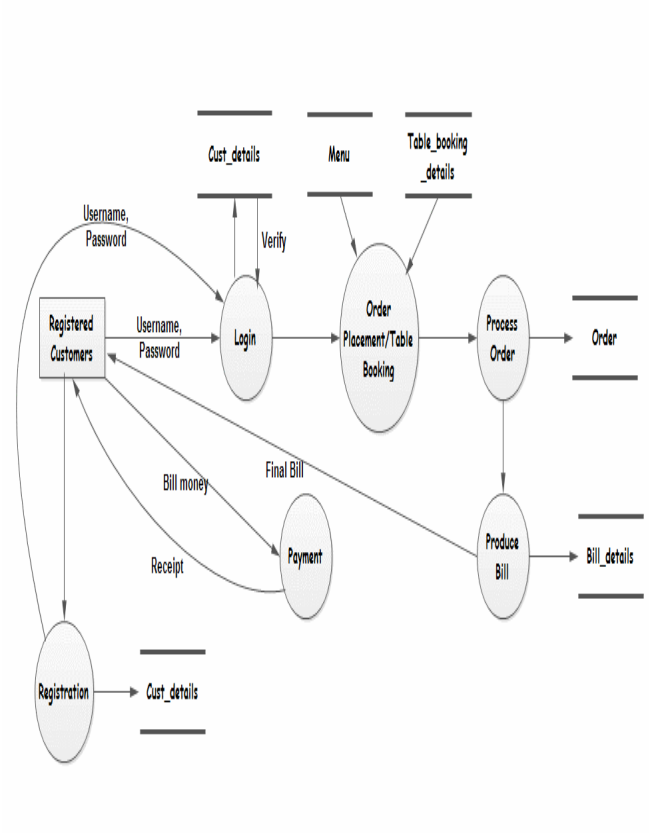

Fig. 4. 1ST level DFD for Registered users

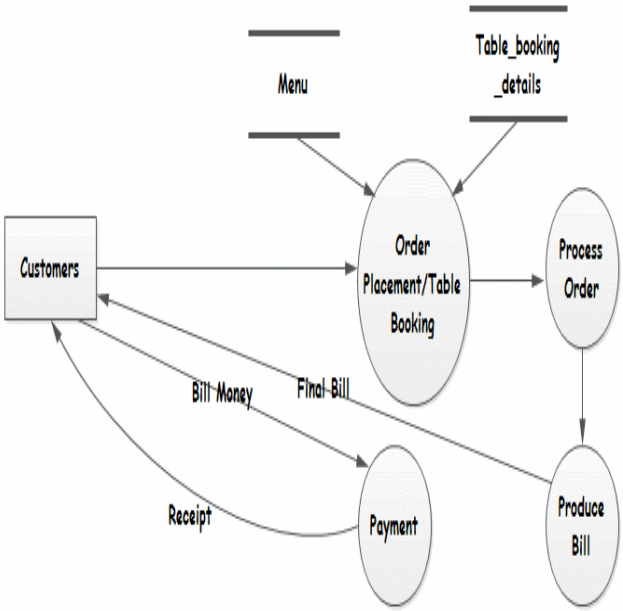

Fig. 5. 1ST level DFD for Un-registered users

IV. RESULTS:

To get desired result, we need Pentium-4, genuine Intel, 3GB RAM, 40GB hard disk, Windows XP/7, RAD IDE, java language, MYSQL database

Fig. 6. Home Page of the web-application

Fig. 7. Page to edit registered customer's personal information

Fig. 8. Page to edit Menu options provided by restaurant

Fig. 9. Sign-up for customer as well as restaurant

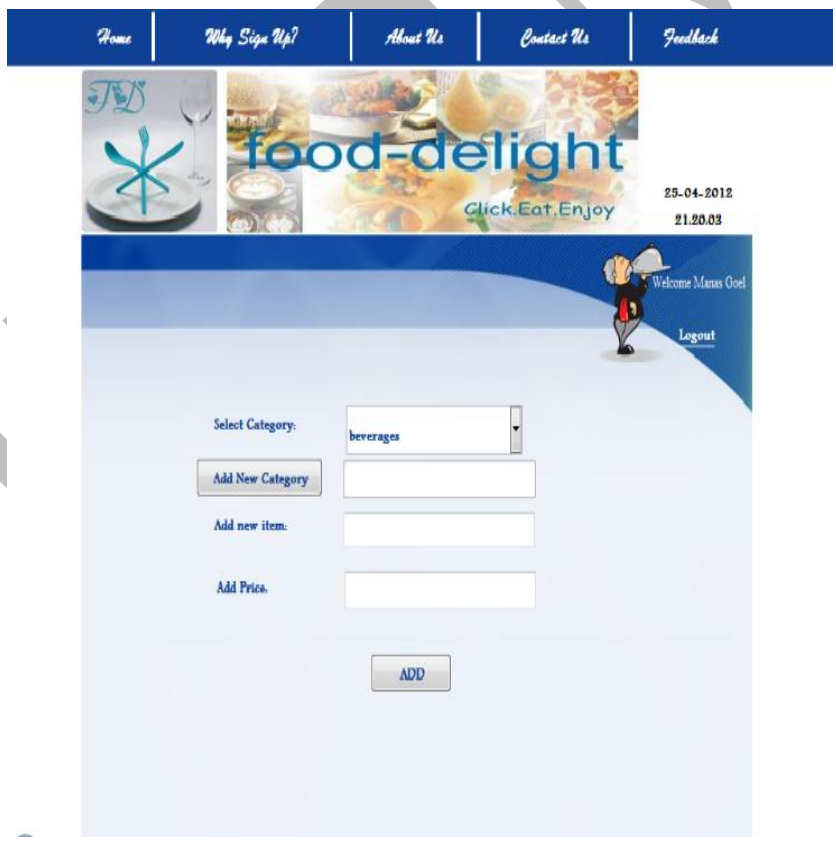

Fig. 10. Page for restaurant to add more items in Menu

V. CONCLUSION AND FUTURE WORK:

A. BENEFITS OF PROPOSED SYSTEM:

The project is identified by the merits of the system offered to the user. The merits of the project will be as follows:-

1. It's a web enabled project.
2. This project offers user to enter data through simple and interactive forms. This is very helpful for the client to enter the desired information through so much simplicity.
3. The user is mainly concerned about the validity of the data, whatever he is entering. There are checks on every stages of any new creation, data entry or updating so that the user cannot enter the invalid data, which can create problems at later date.
4. Sometimes the user finds in the later stages of using the project that he needs to update some of the information that he entered earlier. There are options for him by which he can update the records. Moreover there is restriction for him that he cannot change the primary data field. This keeps the validity of the data to longer extent.
5. User is provided the option of monitoring the records he entered earlier. He can see the desired records with the variety of options provided by him.
6. From every part of the project user is provided with the links through framing so that he can go from one page of the project to other as per the requirement. This is bound to be simple and very friendly as per the user is concerned. That is, we can say that the project is user friendly which is one of the primary concerns of any good project.
7. Data storage and retrieval will become faster and easier to maintain because data is stored in a systematic manner and in a single database.
8. Decision making process would be greatly enhanced because of faster processing of information since data collection from information available on computer takes much less than manual system.
9. Easier and faster data transfer through latest technology associated with the computer and communication.
10. Through these features it will increase the accuracy, efficiency and transparencies.

B. LIMITATIONS OF PROPOSED SYSTEM:

1. Requires internet connection and also the user must be computer literate.
2. The set back of the system is that the customers targeted are adults with access to computer systems while the minors might have to go physically to the restaurant to purchase the food that they want or order food the food with the help of an adult.
3. The other limitation is that the system will only be convenient to people with a small geographical region, basically just around the restaurant i.e. can only help a small area.

C. FUTURE IMPROVEMENTS:

This system can be enhanced to provide the following functionalities in future:

1. Catering system
2. Party Planning

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