Scientific Journal of Impact Factor (SJIF): 4.72

e-ISSN (O): 2348-4470
p-ISSN (P): 2348-6406

International Journal of Advance Engineering and Research Development

Volume 4, Issue 7, July -2017

Home Chef – An Online Food Ordering System

Aditya Gupte[1], Subhash Konar[2]

[1, 2]Department of Computer Engineering, SIES Graduate School of Technology, Navi Mumbai, Maharashtra.

Abstract — *Home Chef is an online food ordering system through which customers can view the food menu, add certain food items to the shopping cart, remove required food items and proceed to confirm the order placed. A computer based management system is designed to handle the entire primary information required to manage the whole data. Separate database is maintained to handle all the details required for the correct order calculation and generations. This project intends to introduce more user-friendly approach in the various activities such as record updating, maintenance, and searching. Standard Web development languages like HTML, JavaScript and PHP were used for Front-end and Back-end development respectively. PHPMyAdmin software was used to maintain and check integrity of databases created.*

Keywords- *Online Food Ordering System, HTML, JavaScript, PHP, PHPMyAdmin*

.

I. INTRODUCTION

An Online Food Ordering system is a system that can be used temporarily for a period with a fee. Ordering food ordering assists people to get around even when they do not have access to their own kitchens and also serves the need to entice the taste buds by ordering new food. The individual who wants to order food must first contact the Food supplier or Catering services for the desired food items. This can be done online. At this point, this person must source some information such as: various types of food items to be delivered, quantity of food items ordered and address for delivery. Customers are free to choose any food item of their choice based on their requirements and availability of such items at the time of reservation.

The proposed system is an interactive and aesthetic website which facilitates the above basic requirements to be given by any customer wanting to order food online. Food ordering is a lucrative business especially at times like these when the internet is truly exploding and almost every commercial / non-profit activity is going online to catapult themselves further in the market and secure the one thing they need: loyal customers.

II. OBJECTIVE OF RESEARCH

2.1 Project M.O.V

Measurable organizational value (MOV) method primarily an alternative to the use of return on investment. Unlike ROI, which evaluates a project's success by comparing its profit to its cost, [3] the MOV measures a project's success or failure in terms of the project's desired impact, which can be stated in financial or nonfinancial terms. The major MOV of the system will be decided upon how interactive the website will function. The customer should be able to comfortably access all the functions of the website and should be able to order food of his/her choice without any complication. The purpose of development of the project is to achieve maximum amount of MOV as possible by making the website both professional and user-amiable with more focus on the latter prospect.

2.2 System Principles

There are certain, unmissable quality principles which were fixed before the commencement of development of the project which undoubtedly kept the project in check and set a realistic, achievable boundary for the complete visualization of the project and its subsequent effects of usage. Such principles/objectives related to the project are described below.

2.3 Security

This crucial quality objective focuses on the feature which is necessary for an e-commerce project to function in an unimpaired manner. The user, before availing the facility to order food of his/her choice must login through a secure system by providing correct Username and Password which he/she has provided during registration. If a new user attempts to log-in the system to order food, he/she must fill a registration form. This is a mandatory feature which enforces basic security and protects Customer integrity.

2.4 Reliability

The website should be strong enough to maintain and protect valuable customer credentials presented while logging in/signing up. The system should reproduce the proper information in case the person has logged in before already and should therefore bypass the login phase and go directly to viewing the catalogue module viz. the system should not repeatedly ask for user credentials if the user has not logged out of the session.

2.5 Maintainability

The sessions requested by the user are directly stored in to the database which is retrieved automatically. The website should not crash under heavy user load and must be maintained by frequent database integrity checks**.**

2.6 Availability

The website should be available 24x7 with exceptions of server crash and other software failures. It can be used as and when required for any customer to book any cab at any time. Exceptions, if any, must be quickly dealt with and should cause as minor discrepancy in customer satisfaction and quality of service as possible.

III. REVIEW OF LITERATURE

The approach for the development of the project is called the Software Development Life Cycle (SDLC). [2] The concepts and working of SDLC is a standard, guaranteed way to achieve deadlines and completion of milestones for project preparation and completion.

3.1 Software Development Life Cycle (SDLC)

[2] The software development life cycle is a project management technique that divides complex projects into smaller, more easily managed segments or phases. Segmenting projects allows managers to verify the successful completion of project phases before allocating resources to subsequent phases. Software development projects typically include initiation, planning, design, development, testing, implementation, and maintenance phases. However, the phases may be divided differently depending on the organization involved. For example, initial project activities might be designated as request, requirements-definition, and planning phases, or initiation, concept-development, and planning phases. End users of the system under development should be involved in reviewing the output of each phase to ensure the system is being built to deliver the needed functionality.

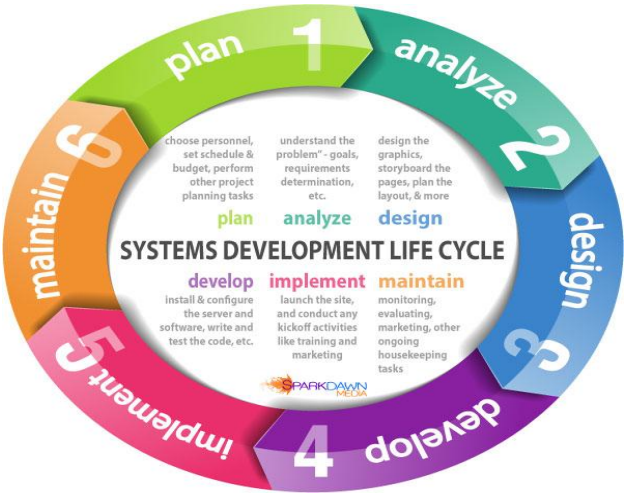

Fig.1. Typical Software Development Life Cycle stages.

The Project has a total of 6 Development phases namely, Inception phase, Requirements phase, Specification phase, Testing phase, Deployment phase and Maintenance phase. A detailed explanation concerning each of the phases in relation with project development is given hereafter.

3.2 Inception Phase

The Initiation Phase begins when a business sponsor identifies a need or an opportunity. The purpose of the Initiation Phase is to Identify and validate an opportunity to improve business accomplishments of the organization or a deficiency related to a business need. This phase completes the following activities: Client meeting and planning, gathering website requirements, Website design proposal, Asking for date of completion and Contract completion.

3.3 Requirements Phase

This phase formally defines the detailed functional user requirements using high-level requirements. It also delineates the requirements in terms of data, system performance, security, and maintainability requirements for the system. This phase completes Defining Scope and Objective, assigning functions, gathering software and hardware requirements and final completion and agreement of requirements.

3.4 Specifications Phase

This phase focuses on the technical aspects or foundations upon which the basic functionality of the website depends. The primary activity here is Creating Page Layouts, Defining UI Prototypes, defining design functionalities and most importantly defining the Database. The review of the phase may be done after this activity.

3.5 Testing Phase

This phase is initiated after the system has been tested and accepted by the user. In this phase, the system is installed to support the intended business functions. System performance is compared to performance objectives established during the planning phase. The activities covered here are, implementing indexes of various web pages,

implement various designed functionalities, connecting and making database operational and the review of Implementation phase.

3.6 Maintenance Phase

The system operation is ongoing. The system is monitored for continued performance in accordance with user requirements and needed system modifications are incorporated. Operations continue if the system can be effectively adapted to respond to the organizations' needs. When modifications or changes are identified, the system may re-enter the inception phase. The purpose of this phase is to: Operate, maintain, and enhance the system. Certify that the system can process sensitive information. Conduct periodic assessments of the system to ensure the functional requirements continue to be satisfied. Determine when the system needs to be modernized, replaced, or retired.

3.7 Testing

Test and evaluation is the set of practices and processes used to determine if the product under examination meets the design, if the design correctly reflects the functional requirements, and if the product performance satisfies the usability needs of personnel in the field. Testing is the way a product, system, or capability under development is evaluated for correctness and robustness, and is proved to meet the stated requirements. Testing is done at each stage of development, and has characteristics unique to the level of test being performed.

At a macro level, testing can be divided into developer testing conducted before the system undergoes configuration management, and testing conducted after the system undergoes configuration management. Testing done before configuration management includes peer reviews (sometimes called human testing) and unit tests. Testing done after configuration management includes integration test, system test, acceptance test, and operational test. An operational test is normally conducted by government testing agencies. The other tests are conducted by the developer; in some cases, such as acceptance test, government observers are present.

Features to be tested are:

1. Proper redirected login as per the user.
2. Validation of login and register module.
3. View Shopping Cart and the Catalogue.
4. View information of various fields.
5. Validation of booking form.

3.8 Testing Methods

[1] Software testing methods are traditionally divided into white box testing and black box testing. These two approaches are used to describe the point of view that a test engineer takes when designing test cases. The types of Testing are categorized as follows:

1. **Black Box Testing**

   Black box testing treats the software as a black box without the knowledge of internal behaviour. It aims to test the functionality according to the requirements. Thus, the tester only inputs data and sees the output from the test object. This kind of testing requires through test cases to be provided to the tester who then can simply verify that for a given input, the output value is the same as the expected value specified in the test cases.

2. **White Box Testing**

   White box testing is however, is when the tester has access to the internal data structures, code and the algorithms. These methods include creating tests to satisfy some code coverage criteria. For example, the test designer can create test to cause all statements in the program to be executed at least once. Other examples of white box testing are mutation testing and fault injection method.

3.9 Levels in Testing

[1] The project-centric testing levels are commonly classified as:

1. **Unit Testing -** This tests the minimal software component of the module. Each unit of the software is tested to verify the detailed design for the unit has been correctly implemented.
2. **Integration Testing** - This exposes defects in the interfaces and interaction between integrated components. Progressively larger groups of tested software components corresponding to elements of the architectural design are integrated and tested until the software works as a system.
3. **Alpha Testing** - This is a simulated or actual operation testing with the potential users or an independent testing at the developers site. Alpha testing is often employed for off the shelf software as a form of internal acceptance testing before the software goes to beta testing.
4. **Beta Testing** - This comes after alpha testing. Versions of the software, known as beta versions, are released to limited audience outside the programming team. The software is released to groups of people so that further testing can ensure that the product has few faults or bugs. Sometimes, beta versions are made available to the open public to increase the feedback field to a maximal number of future users. Finally, acceptance testing can be conducted by the end user, customer or client to validate whether to accept the product. Beta testing may be performed as part of the hand off process between any two phases of development. It is a continuous method, which probably does not stop but has to be stopped anywhere, for the need of time and resources. The basic need of the testing is to provide best quality product without

taking so much time and money. The test engineer has to pursue some technical way by which he/she can review that all the points of necessity for testing have been covered or not. A register should be created for keeping records of the day to day test cases. There is requirement for estimating the software, at the phase of implementation as well as after the software is completed for deliver.

IV. PROPOSED METHODOLOGY

The proposed food ordering system is designed to function in the following manner,

1. User attempts to log-in the system.
2. System checks if the user is a New/existing User.
3. If User is new to the system, then user is directed to the Sign In page where he/she has to fill a registration form.
4. If the User is an existing one, then the system asks the User to log into his account to be able to order Food. This is the Log In page.
5. After verifying the credentials of the User, the system presents the Catalogue page, where user has to select his required food item and this populates the Cart.
6. User selects food items as per his/her requirements.
7. The subsequent food item is displayed to the user to convey that it has been successfully added to the cart.
8. After confirming the items in the Shopping Cart, user proceeds to confirm order.
9. System checks the availability of the specifies choice, if choice is available, then the required information is conveyed to the user at real-time. If not, then user is given the opportunity to select another choice of food item(s).
10. The User is directed to the Cart which displays all the selected items with an option to remove from the cart, if required.
11. User proceeds to confirm the order placed.
12. If user confirms the order, then system logs out the User from the session. If not, then system redirects the user to the Catalogue page again.

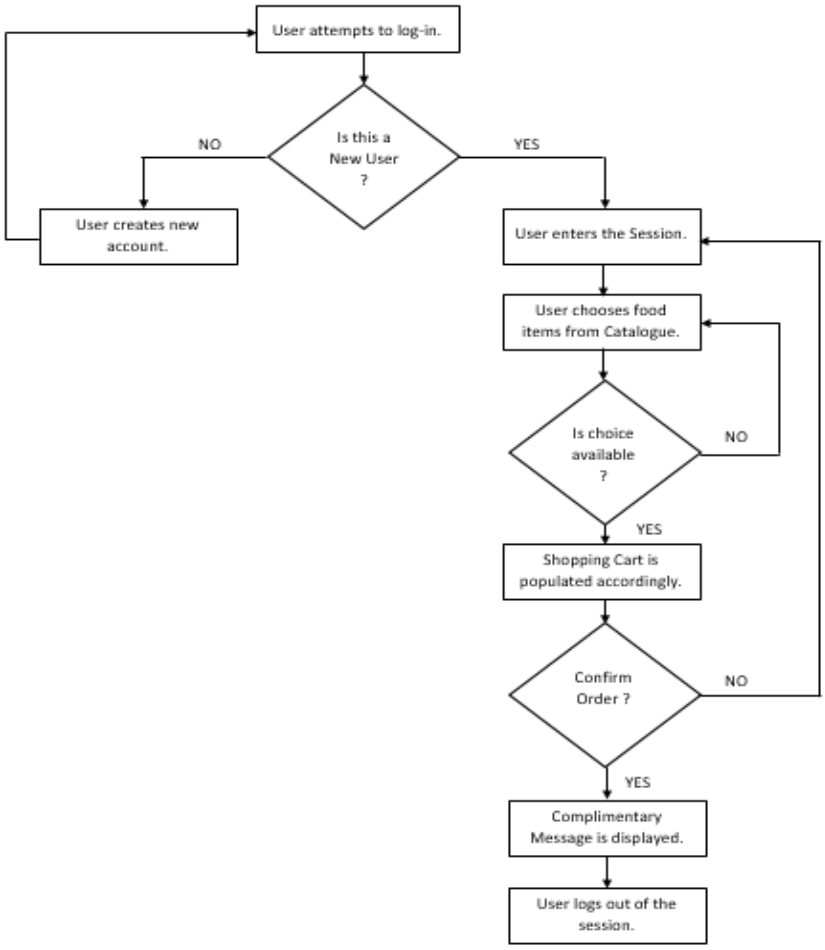

Fig.2. Flow Diagram of Execution.

V. ANALYSIS OF PROPOSED SYSTEM

The proposed model/system is effectively able to extract the necessary details from the user through its Sign Up page and feeds it into its standard MySQL database i.e. PHPMyAdmin. The User gets a creative and aesthetically pleasing experience as the website uses attractive font and colors to suit the experience. This achieves maximum Quality of Service (QoS). The User is systematically directed to multiple pages as explained in the flow of execution diagram, which facilitates in seamless Food Ordering experience. The user-defined functionalities are kept simple and concise and in no way whatsoever will they lead to ambiguity and misrepresentation. After ordering the food items, the user is given the complimentary message. The order will be delivered to the address specified by the user while signing up.

This project transverses a lot of areas ranging from business concepts to computing field, & required to perform several researches to be able to achieve the project objectives. The area covers include a variety of topics studied and researched. Some of these are given further.

5.1. Food and Catering Industry

This includes study on how the catering business is being done, process involved and opportunity that exist for improvement. The contribution of this project will cover the following domains of this industry.

1. General customers and various public / private departments as well as the company's staff will be able to use the system efficiently.
2. Customer Revenue Enhancement.
3. Improved and Optimized service.

5.2. Schedule

For a proper project schedule, intricate planning is a must. Using Gantt Chart and Microsoft Project tool, the schedule of the entire project was decided.

5.3. Budget

A project that is considerably low on cost and high on performance is an ideal project. Hence, taking into account the requirements and constraints of the end user and the customer, the budget is kept at the approximate cost of Rs 80,000. The cost includes efforts of the programmers and licensed server for which registration is needed.

5.4. Minimum System Requirements

The minimum system requirements for supporting such a project are as follows:

1. Processor: Intel Core 2Duo or AMD equivalent, 2Gz or better.
2. RAM: 1GB or more.
3. HDD: 160 GB, 7200k spin.
4. Operating System: Windows XP sp3 / Windows Vista Business sp1.

5.5. Advantages of the System

The proposed food ordering system offers many advantages. They are as follows:

1. It offers unambiguous and concise method to order food online.
2. The website uses attractive themes and colors and is aesthetically sound.
3. User defined functionalities are kept clear and to the point.
4. The ordering facility is offered round-the-clock (24 hours uninterrupted).
5. Changes in food item profiles (item addition, replacement, deallocation), caterer info, etc., can be made effective immediately with the appropriate contingency handling.
6. Provides automatic database recovery against all kinds of hardware and software failures.
7. Complete audit trails for transactions and data access.

VI. RESULTS AND SCREENSHOTS

This section talks about the variety of webpages designed during the course of the project development. These webpages comprise the very foundation of this project. The screenshots shown are the core, user-centric functionalities developed which enable the user to use the system to the maximum of its abilities and provide quality service. The screenshots include:

1. The Home Page (Index page).
2. Sign Up Page.
3. Log-In Page.
4. Food Item Catalogue.
5. Cart Screen/Ordering Details and Database.
6. Feedback Page

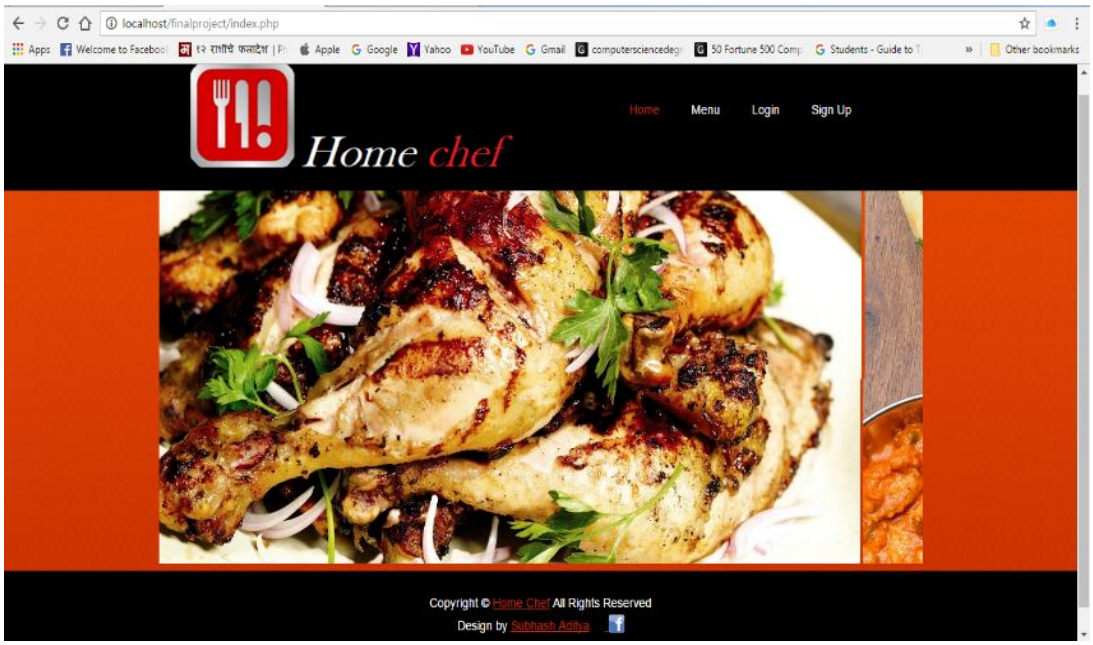

Fig.3. Index Page.

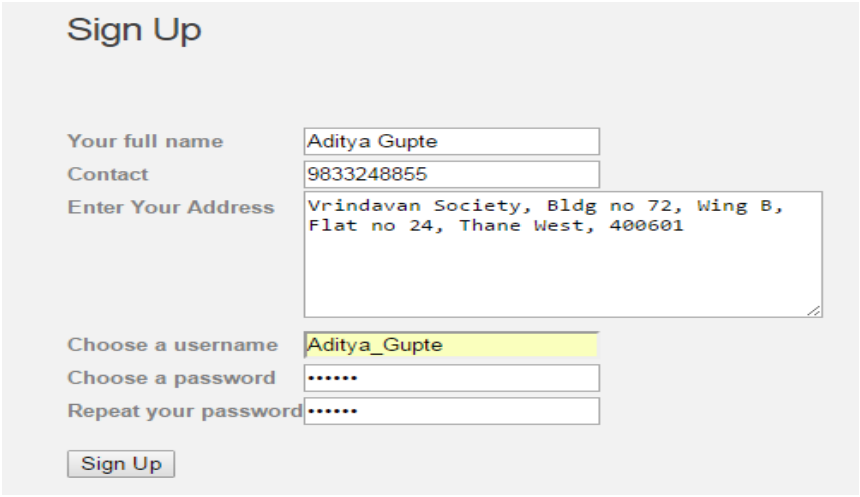

Fig.4. Sign Up Page.

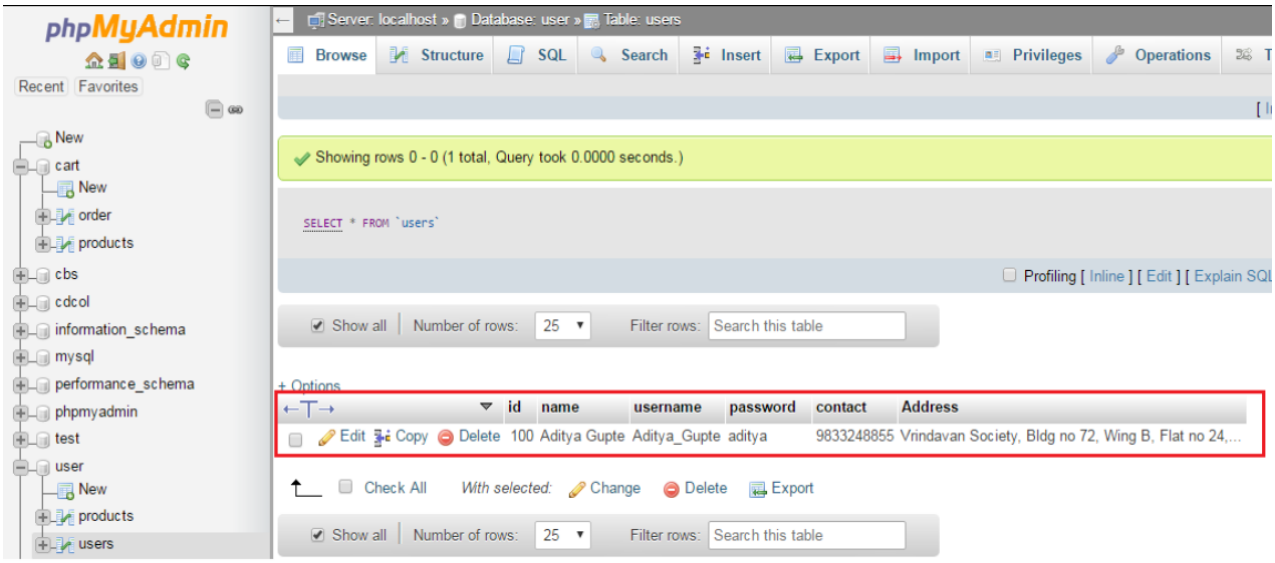

Fig.5. Customer Table.

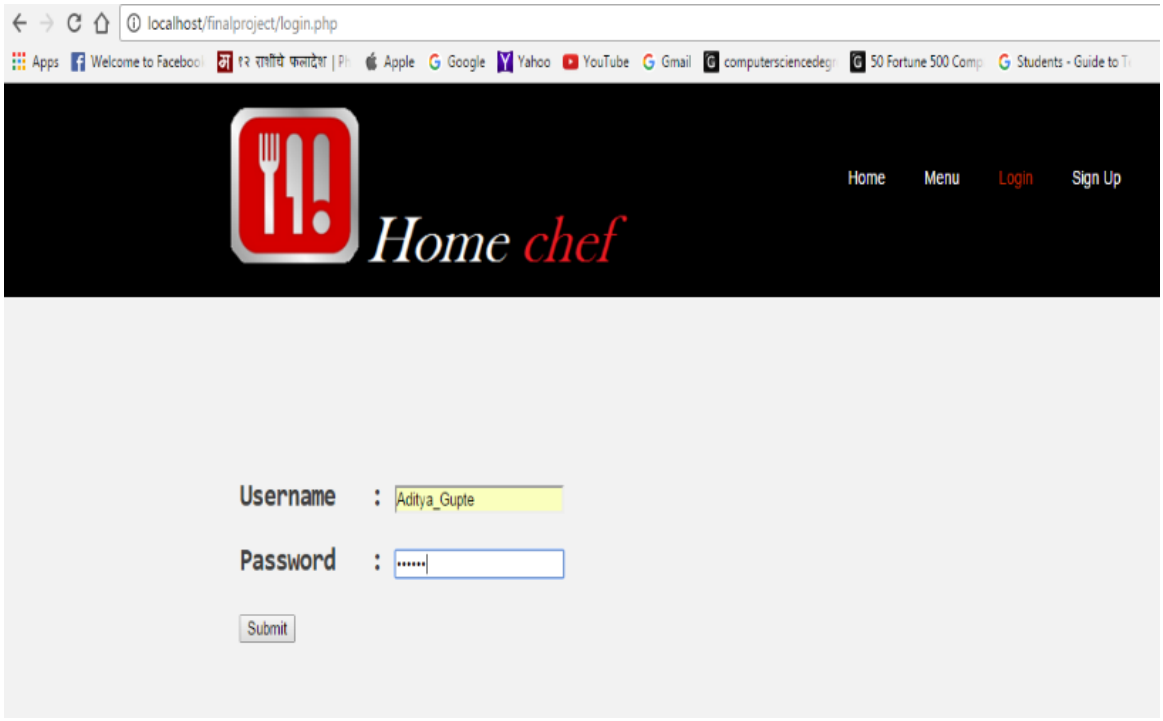

Fig.6. Login Page.

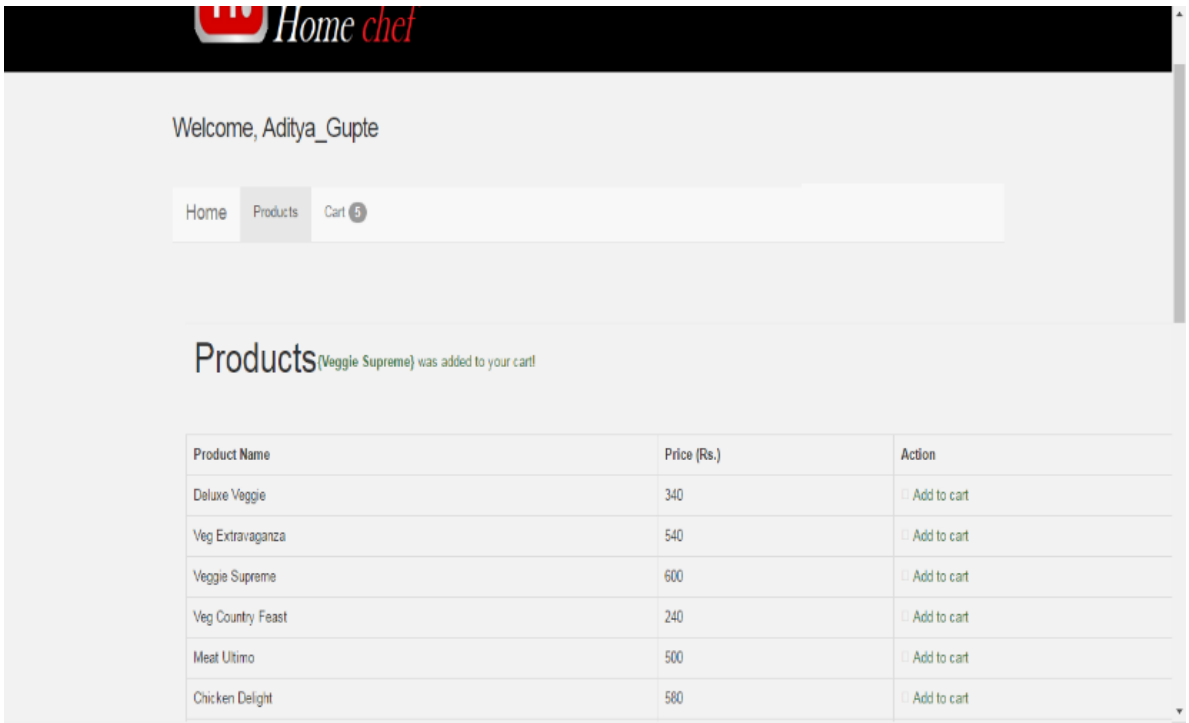

Fig.7. Product Catalogue Page.

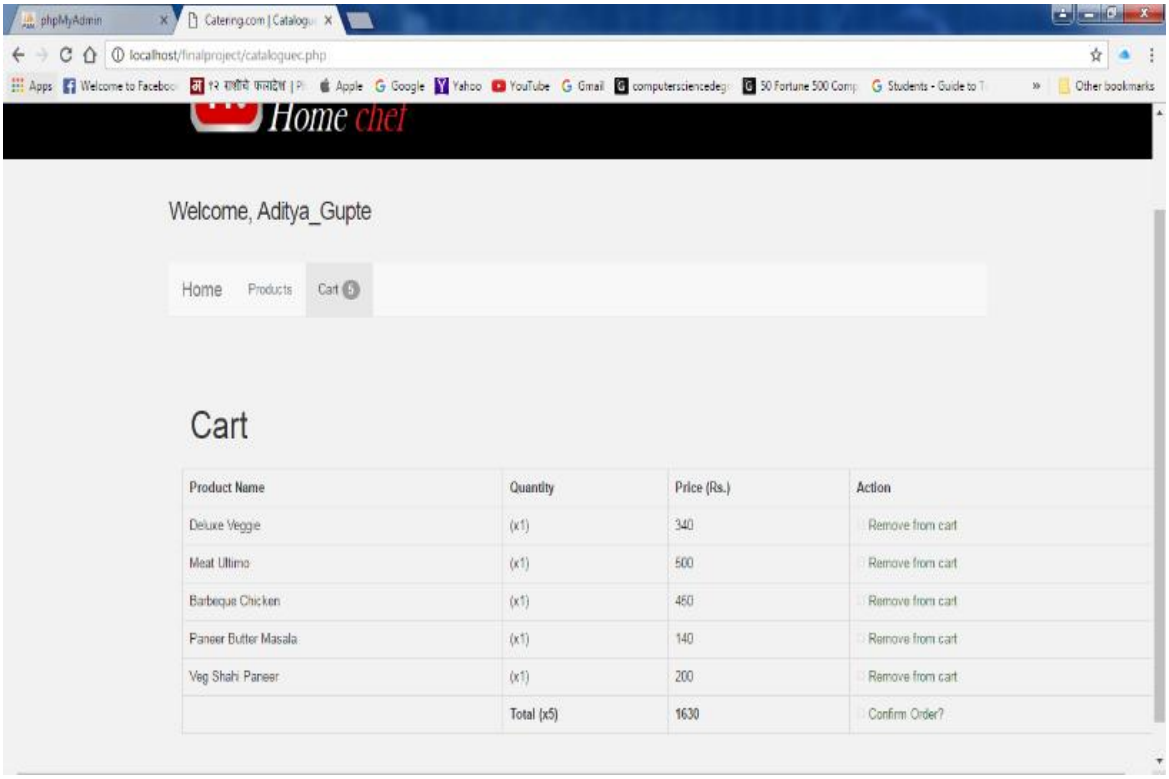

Fig.8. Order(s) / Cart Page.

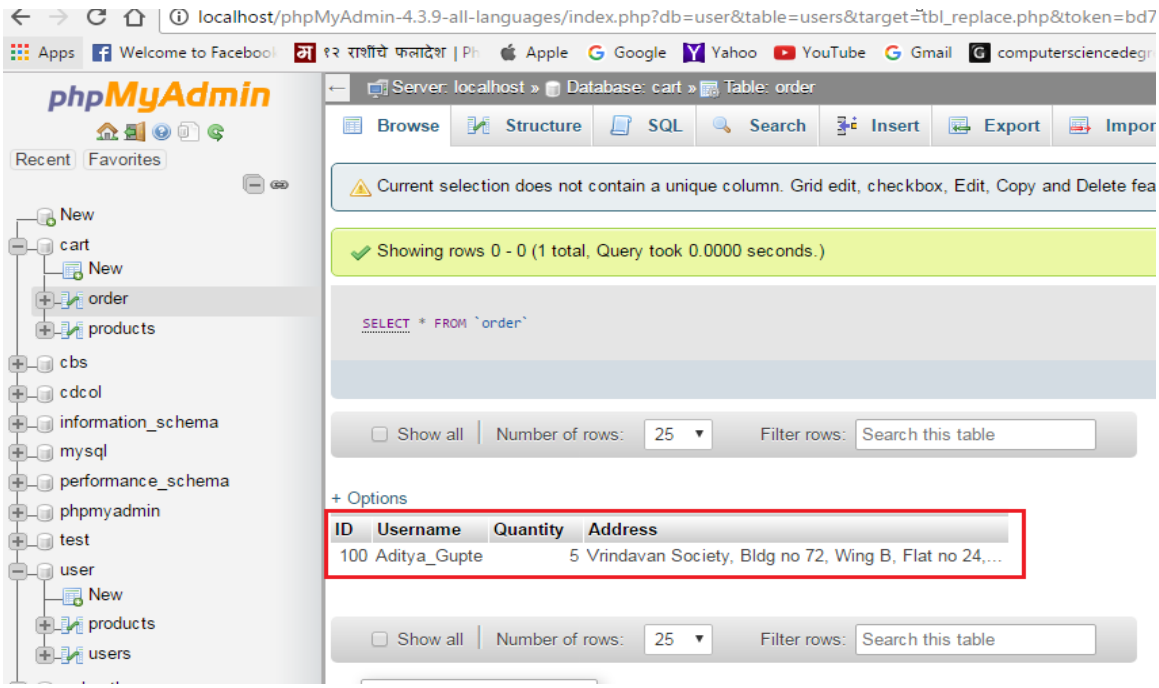

Fig.9. Order Table.

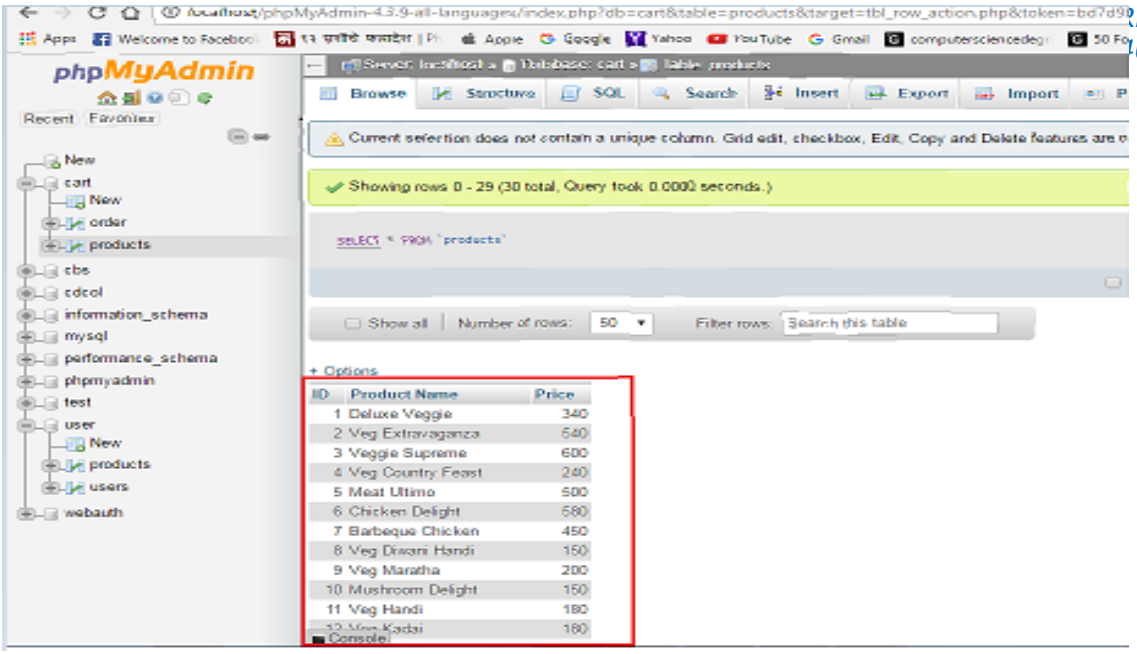

Fig.10. Products Table.

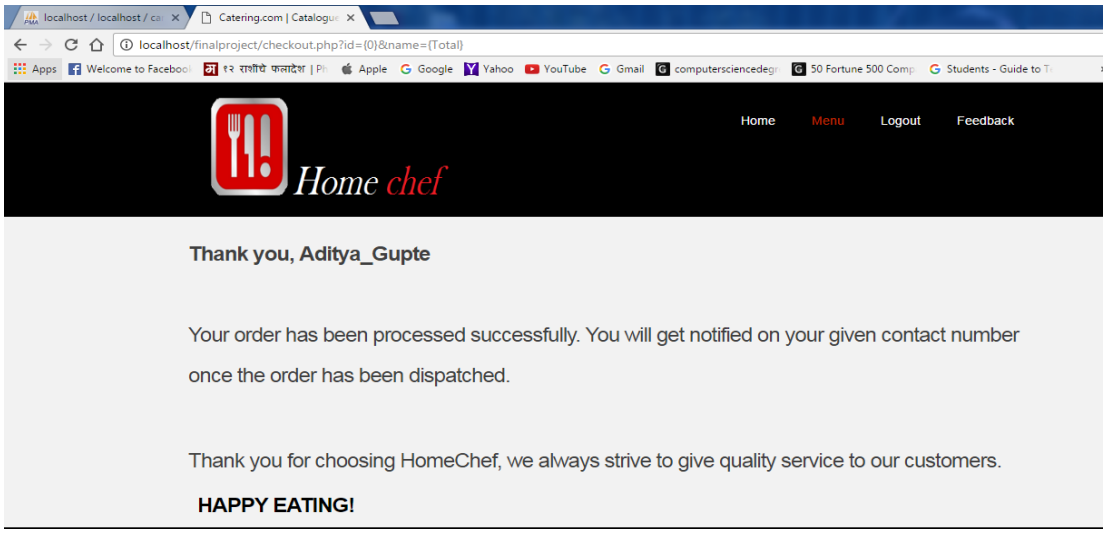

Fig.11. Checkout Page.

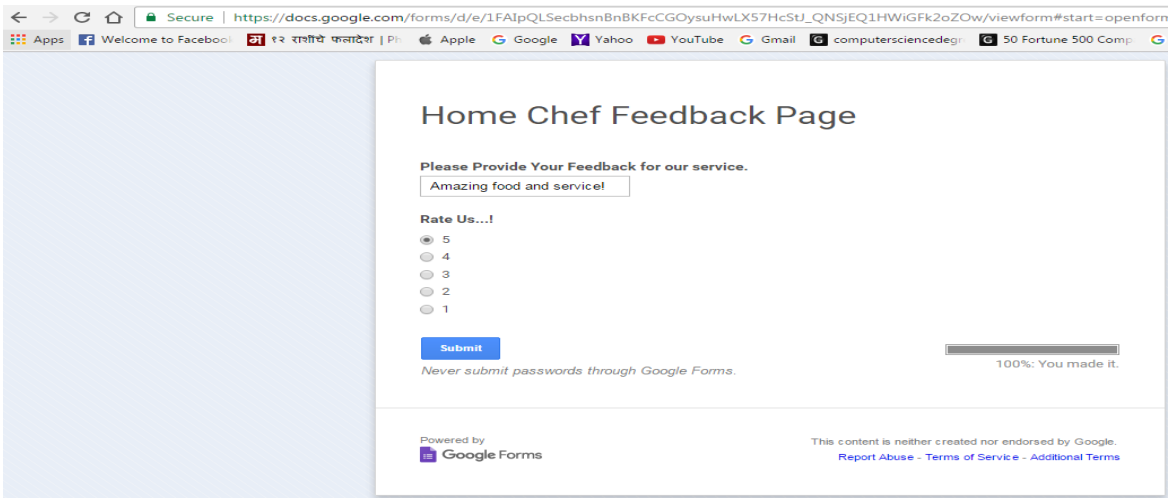

Fig.12. Feedback Page.

VII. CONCLUSION

The development of this project took efforts to understand how food ordering systems and catering companies facilitate their daily businesses and sustain in the competitive culinary industry. The work on this particular project has given us immense exposure to technologies like HTML, JavaScript, PHP, MySQL, CSS etc. which can be used to develop such projects with ease rather than building and working upon existing complex modules. The application developed by us is also supported on various operating systems like Windows XP/7/8/10 and Linux which makes the application scalable and robust implementation and usage. Information Technology not only plays a vital role in any field, but it introduces many solutions to various problems belonging in other fields. This Food ordering system – Home Chef exploits information technology at the maximum extent. It thoroughly uses the information technology to provide supreme catering service and better quality of service and user experience.

7.1. Future Scope

This project traverses a lot of areas ranging from business concepts to computing field. A through research into business, building commercial websites was required to be done to achieve the crucial project objectives. A potential future scope for the above project could include a real time – GPS mapping or Google Maps integrated with Home Chef to further provide insights into the Catering industry and how it can be made more efficient.

REFERENCES

[1] Nidhra, Srinivas and Jagruthi Dondeti. “Black Box and White Box Testing Techniques –a Literature Review.” (2012).
[2] Santos, Rodrigo Augusto dos, Avelino Francisco Zorzo and Sabrina Marczak. “Towards an SDLC for Projects Involving Distributed Systems.” *ICEIS* (2016).
[3] M. Firdouse, Ali Khan, Swapna, “Design and Implementation of Ordering System for Restaurants”, in International Journal of Engineering Research & Technology (IJERT), Vol. 1, Issue 10, December- 2012.

