

**WEB APPLICATION DEVELOPMENT: RESTAURANT MANAGEMENT
SYSTEM FOR ADMIN PANEL**

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This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science in Computer Science and Engineering

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DAFFODIL INTERNATIONAL UNIVERSITY
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APPROVAL

This Project titled “**Restaurant Management System for Admin Panel**” submitted by **Md. Jahirul islam**, ID No: **182-15-11538** to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering (BSc) and approved as to its style and contents. The presentation has been held on 9 September 2021.

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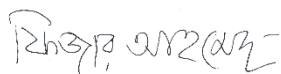
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DECLARATION

We hereby declare that, the work presented in this intern report based on web project is done by us under the supervision of Gazi Zahirul Islam, Assistant Professor of Department of Computer Science and Engineering, Daffodil International University, in partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Engineering. We are declaring this report is my original work. We ensure that neither this report nor any part has been submitted elsewhere for the award of any degree.

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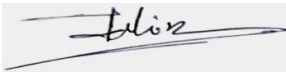
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ABSTRACT

This report documents the process of designing, developing, and testing a software system to be used in a restaurant; usually given the name Restaurant management system. The restaurant management system is there to help communication between all teams within a restaurant by minimizing the probability of human errors.

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CHAPTER 1

INTRODUCTION

With keeping view of the emerging growth and use of the web, I decided to make the web app that is “Restaurant Management System Application”.

In this project, a restaurant management system application has been developed from manual to website-based. This restaurant management system will contain the whole system of the employees and customers of a restaurant. It is fully based on the website platform. This automated system will save the management of a restaurant’s revenue. Customers will also be benefited from this platform. Now the employees/customers of the restaurant can manage the whole selling or buying foods by using the computer.

1.1 Project Background

Regular restaurant service requires waiters to communicate with customers directly before preparing their orders or booking a table. But much of the discovery has been with point-of-sale (POS) operations. Yet other sectors of a restaurant are fit for innovation, such because the account or sales part. The restaurant management system is a platform where the administrators, employees, and users are working in one platform.

1.2 Problem Statement

Today, the Customer has to move to a restaurant or get a phone call in order to make his feast reserved. The restaurant waiter takes the customer’s order by the old-fashioned system using paper. The customer does some formal discussion. Then he requires today’s menu and does some conversation over menu items that he orders. It takes 5 to 10 minutes to book the order and the waiter lists the order on paper so there is the probability of failure and duplication of customer information. The restaurant management system places the order in a queue with specific priority according to time and quantity, and then a cook is hired for the specific order to complete it.

In Bangladesh, some high-class restaurants are maintaining restaurant websites [2] [3] [4] But most of the restaurants are not using websites according to maintenance issues or for

limitations of full package restaurant management system. In these [2] [3] restaurants they have some limitations on the reservation system. They don't show users about the status of tables if tables are available or not. In [4] they don't have any online reservation system through their website. Besides, Websites are not updating their event too [3]. This will not make users satisfied.

Along with the reservation system, management systems like payments, sales, and delivery options are not available on their websites. Their ordering process is also not very easy. So, the Restaurant management system that I am working on here right now makes it easy to order both for the customers and the Restaurant itself. This project is conducted using online which allows the customers all the necessary detailed information on our website regarding our services. Basically, the website is a collection of many related web resources like different web pages, multimedia contents that are identified with a common domain name and which are published on at least one web server. So, the customers/users can use this website in order to for a reservation of a table, to order the food on a particular time and date by sitting anywhere. The admin can maintain/control the schedules of the activities of the ordered food or reserved table and then the waiter can revisit the schedule.

The system includes online web forms, databases in order to store information and different data, a web portal, and a secure network. The System presents an interactive and up-to-date menu with all available options which are user-friendly to the customers. Customer can view their order details in the cart before checking out. The system will allow the customers to see the available Offers, Coupons, and Gifts. Customers can book a table or can choose one or more items while placing an order which will gather onto the Cart. The delivery system is also easy and available in this system. And finally, in the end, the customers will get order confirmation details.

In this report, a detailed discussion has been given regarding the development of the website on the restaurant management system. To develop this website the system is designed as a user needs to sign up or register to the restaurant system website. On the other hand, the admin panel can maintain their employee's details with managing the whole restaurant system.

1.3 Objectives

- A system where the administrators, employees and users are working in one platform.
- Provide solution for ordering food and booking table.
- The system is designed in a user-friendly interaction.
- Handling new customer, waiter, employee and menu into database.
- Minimize the time & revenue of restaurant staffs and users.

1.4 Scope of the project

- Change password and forget password option.
- Food, table, department and employee list view.
- Create user, agent, department and employee.
- Edit user, agent, department and employee.
- Take attendance of employee.
- Store sales details.

1.5 Major Responsibilities

- Working & updating front-end and back-end code for Restaurant management system.
- Communicating for upcoming updates.
- Generating new ideas for the system.
- Collaborate with my Team.

1.6 Minor Responsibilities

- To follow the instruction of my Team Leader
- Not doing any harm to the organization.
- Follow the code of ethics and rules of the organization.

CHAPTER 2

COMPANY PROFILE

2.1 Company Background

ParonSoft Solutions Ltd. is a modern technology-based software development company, founded in 2016 in Dhaka, Bangladesh. It is world-class IT solution provider company giving sales-oriented, ROI-driven web and desktop-based enterprise-level applications. ParonSoft promises to supply very high- quality products that bring a really high level of client satisfaction. ParonSoft always have the goal to supply the present needs and help our clients to compete during this ever-changing web and online environment. Paronsoft main job is quality work so have hired good skilled and experienced IT professionals. ParonSoft Solutions Ltd. all employees have a graduate or postgraduate degree and also certifications such as Microsoft Certified Technology Specialist, Microsoft Certified Professional Developer and Oracle Certified Professional. ParonSoft work with this programming Language C#, Asp.Net, Asp.Net MVC, VB.Net, PHP, Windows application, JAVA, , JavaScript, jQuery, MySQL, Oracle, , Microsoft SQL Server, XML, HTML, CSS, WordPress, Figma, Adobe XD, Adobe Photoshop, Adobe Illustrator and other application developments software.

2.2 Paronsoft solutions ltd Services

Web application development

We combine our Framework with user experience expertise and a collaborative approach to client relationships to deliver applications that perform for your business. We will closely work with you to understand your business goals. Then we will make your desired application which will be very user friendly, ease of use and meet your business expectations.

Web Application development process is broken down to the following steps:

- Requirement analysis
- Research and Planning
- User Interface generation (UIG)
- Implementation
- Quality Assurance (QA)

E-commerce solutions

There are many steps involved once you build e-commerce internet site. E-commerce solutions require an investment within the right e-commerce software, e-commerce hosting, and e-commerce security considerations. E-commerce refers to selling, advertising and marketing products, all done over the web. More and more companies are fixing e-commerce internet sites additionally to traditional business methods, while others use the web exclusively to succeed in potential customers. US Creations is skilled and experienced altogether aspects of e-commerce for our clients to successfully develop, operate and maintain a profitable e-commerce application.

Application life cycle management

Application Life cycle Management (ALM) may be a continuous process of managing the lifetime of an application through governance, development and maintenance. We are very specialized in assessing and correcting Application Life cycle Management issues for small-size to large companies. Our client will enjoy the following benefits of ALM:

- Reduce the cost of ownership and administration
- Improve cross-product visibility and reporting
- Cuts maintenance time by synchronizing application and design
- Accelerates development through simplified integration

Custom website development

A website is a particularly important tool for fulfillment in today's business world. Having an internet site is like having a one-stop shop where all of your potential customers from everywhere the planet can come and explore your offerings, and get in touch with you for your services.

VIRTUAL OFFICE

ParonSoft will closely work with you to understand your needs and then build a dedicated team to assist your organization - this includes project management, programmers, quality assurance, UI specialists and support staff who are committed to providing high quality work and trustworthy results.

You might be wondering how a team located in a distance part of the world can closely work together with your organization. Yes, we do, we communicate with our clients through instant messenger and conference call or video call and email, giving you the illusion that we are in the office right next to you.

From the smallest UI re-sizing to complex system implementation and everything in between - we can make it happen for your company, cost effectively, on time and on budget. ParonSoft's virtual office services cater to every need of our clients. Advantages offered by ParonSoft virtual office services include:

- No costs involved in recruiting
- Provide all facilities and infrastructure
- Experienced & skilled professionals
- Access to development talents with different skill sets
- Speed up time-to-market

SMART DEVICE APPLICATION DEVELOPMENT

New smart device technologies like Android, iPhone, iPad, and Tablets & Windows phone could help make your workforce more mobile. I do development using tools and technologies like XCode (with Objective C, for iOS), Eclipse (for Android) or Visual Studio (for Microsoft Windows Mobile 7 and whatever follows for 'Microsoft tablets', etc.).

2.3 Paronsoft solutions ltd's Technologies

- Backend, frontend and mobile development
- Data engineering
- Big data, artificial intelligence and machine learning
- Cloud enable development and automation

2.4 Paronsoft solutions ltd Inc. Address

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CHAPTER 3

LITERATURE REVIEW

3.1 Web Development

Web development broadly refers to the tasks associated with developing websites for hosting via internet or e internet. Web programming, too known as web development, is the creation of dynamic web applications. The web development processes the includes web design, web content development, client-side/server-side scripting, and network security configuration, among other tasks. Web development is the work required in developing a website for the Internet (World Wide Web) or an intranet (a private network).

There are two broad divisions of web development – front-end development and back-end development which have been demonstrated as follows:

3.1.1 Front-end Development

Front-end web development, which is too known as client-side development. Markup and languages such as HTML, CSS, and JavaScript for a website or Web Application so that a user can view and associate with them directly. Front-end developers are interested in analyzing code, design, cross-browser issues and debugging applications, search engine optimization forward with ensuring a seamless user experience. Front-end developer controls what people first see in their browser. Being a front-end developer, I am accountable for the look, feel, and ultimately the design of the site.

3.1.2 Back-end Development

Back-end Development refers to the server-side of development. you're primarily targeting how the location works. Making updates and changes additionally to watching the functionality of the location are going to be your primary liability. this sort of web development usually consists of three parts: application, server and database. Code written by back-end developers is what communicates the database information to the browser. Back-end scripts are written in many different coding languages and frameworks, such as

- PHP Languages
- ASP.NET Languages

- Perl Languages
- Java Languages
- Node.js
- Python Languages

3.1.3 Graphic Design

Graphic designers express their creativity every day. As well as picking color palettes and choosing imagery and type they also have to think 'outside the box' to solve challenging briefs. If you're a creative type, with a good eye for detail, graphic design gives you the opportunity to bring your ideas to life. Graphic design uses visual compositions to unravel problems and provides ideas through imagery, typography, form and color. Though they often overlap, each sort of graphic design needs a specific set of skills and style techniques. Many designers practice during a single type, others specialize in a group of related, similar types. Graphic design can use image-based designs including logos, photos, symbols, including illustrations, and type-based designs, or a mixture of both techniques.

3.2 Relation with Undergraduate Courses

In Daffodil International University (DIU), I have one numerous course among them, these five courses are related to my internship work, Database Management System (CSE311), System Analysis and Design (CSE321), E-commerce & Web Application (CSE431), Software Engineering (CSE332) and Computer Graphic (CSE421).

Database Management System (CSE311), one of the basic courses where I learned about the Database development process and Database languages. E-R Model, Transferring ERD to Relations, Introduction to normalization, and Introduction to Structured Query Language was part of this course.

System Analysis and Design (CSE321), System analysis is conducted for the rationale for considering a framework or its parts in plan to distinguish its goals. It might be a problem tackling a technique that creates strides the system and guarantees that each one

the components of the system work effectively to realize their reason. It might be a process of designing an unused business system or supplanting an existing framework by characterizing its components or modules to satisfy the actual necessities. Sometime recently arranging you would like to urge it the old system completely and choose how computers can best be utilized in arranges to function proficiently.

E-commerce & Web Application (CSE431), a computer program that utilizes web browsers and web technology to perform errands over the web. Web applications utilize a mixture of server-side language (PHP and ASP) to handle the storage and retrieval of the info, and client-side language (JavaScript, Html and CSS) to point out data to clients.

Software Engineering (CSE332), teach us the process of analyzing user requirements and then designing, building, and testing software application which will satisfy those requirements. It moreover incorporates related documentation required for creating, working, and keeping up them.

TOOLS USED TO BUILD THIS PROJECT

3.2.1 Vue.js.



Figure 3.3.1: Vue.js

3.2.2 Nuxt.js



Figure 3.2.2: Nuxt.js.

3.2.3 Laravel API



Figure 3.2.3: Laravel API.

3.3 Methodology

The study mainly focuses on the development of restaurant management system admin for a restaurant. To develop the website, we followed Waterfall Methodology.

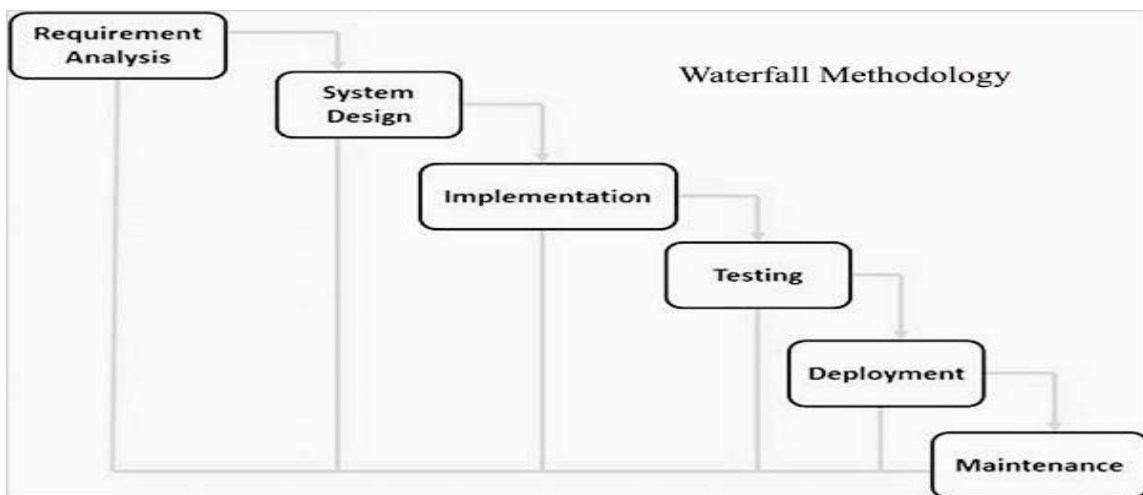


Figure 3.3: Waterfall Methodology Model.

CHAPTER 4

DEVELOPMENT PHASE

This restaurant management system admin is a computer program designed to connect with users like workers, customers, and accounts particularly over the internet. It is a platform that contains the whole system to blend into a website which will contain the entire system of the employees and customers of a restaurant. It is fully based on the website platform. This automatic system will save the administration of a restaurant's revenue. Customers will too have profited from this platform. Now the employees/customers of the restaurant can manage the entire selling or buying foods by using computers.

4.1 Software Development Process of Restaurant Management System

Purpose: Supporting the employees to run the restaurant smartly.

Procedures:

- Analyzing and Specifying the Requirement
- Designing the System
- Implementing all the functional and non-functional requirements
- Validating the system
- Changing the software in response to changing demands
- Deployment the system

Standards:

- Understanding, analyzing and documenting the system requirement
- System should be developed by following proper software development process methodologies
- System should be tested every phase in proper way by following standard quality assurance and testing methodologies
- Following the coding standard for variable, class naming etc.

Knowledge, Skill, Environment and Resources:

Knowledge of html, CSS, Bootstrap, JavaScript, Laravel API, SQL database etc.

Also need friendly working environment and computing resources as well.

- **Tools:** Visual Studio, SQL database programming etc.

4.2.1 Software Development Activities of Restaurant Management System (Admin) Activities:

- Login into the system,
- Selecting the specific department
- Creating new profile of any new user or item of the restaurant
- Add, Edit or Delete information
- Give entry of any offer or coupon for items of restaurant
- Keep track list of users, coupon and other information with time and date.
- Updating employee, user, customer, item profile and Statistics.

4.2.2 Planning

In planning section, it has been done the Requirement Analysis which is divided into two parts as Functional & Non-Functional requirements. Here, these requirements are identified by discussing with the management team, through studying the existing system, talking to different user groups. After that, designing of the system, implementing, testing also done for the web app.

4.2.3 Requirement Analysis

Requirements Analysis is the method of determining the expectations of the users for an application that is to be created or changed. Requirement analysis involves all the tasks that are conducted to identify the needs of different partners. Therefore, requirements analysis means analyzing, document, verify and manage software or system requirements. Great quality requirements are documented, workable, measurable, testable, identifiable, helps to identify business opportunities, and are defined to facilitate system design as well. I have included functions in the needs of the company and also ended the requirements.

4.2.4 Functional Requirements

The functional requirement is that it basically specifies something a system should do. The Functional Requirements are the operations and activities that a system must be able to perform.

The section includes contains requirements for the system includes:

- Descriptions of data to be entered into the system,
- Descriptions of operations performed by each section,
- How the system meets applicable regulatory requirements.

Table 4.2.4: Functional Requirements for the System

FUNCTIONAL REQUIREMENT NO - 01: COMPATIBILITY

Name of the Function: Must be compatible with all computers having windows Operating system.		
Input N/A	Process: Software must be developed in a common development environment. And it can't be a web-based app.	Output: Software can be installed in windows platform and must be a laptop or desktop computer.
Precondition: User must have a computer or Laptop which has ability to run the software. Must have Laravel 3.0 and PHP 7.2 or more.		
Post condition: Nobody can use this software unless they are trained to use it.		

FUNCTIONAL REQUIREMENT NO - 02: LOG IN:

Name of the Function: Login account		
Input User ID	Process: Signing in the Software	Output: View the main interfaces in the software.
Precondition: Must have internet connection and devices to communicate of the server or have database on local computer get access of this software.		
Post condition: User can view the all the interfaces and can use the Website.		
Alternate Options: If email or User ID and Password is not correct then showing the alert, "User ID or password is incorrect."		

FUNCTIONAL REQUIREMENT NO - 03: CREATE USER PROFILE:

Name of the Function: Create User Profile		
Input Go to user add tab	Process: Fill the add user form	Output: User can create new profile
Precondition: User must have to go add user page.		
Post condition: User has to fill the forms.		
Alternate Options: N/A		

FUNCTIONAL REQUIREMENT NO - 04: USER PROFILE:

Name of the Function: User can see user profiles		
Input Go to list tab	Process: Search by user id or Name or Scroll down	Output: User can see all information of selected profile.
Precondition: User must have to go view profile page.		
Post condition: User can see all information of selected profile.		
Alternate Options: N/A		

FUNCTIONAL REQUIREMENT NO - 05: UPDATE OR DELETE USER PROFILE:

Name of the Function: User have ability to update or delete user profile		
Input Go to list tab	Process: Search by User id or Name or Scroll down	Output: User can see all information of selected User.
Precondition: User must have to go view profile page.		
Post condition: User can see all information of selected User.		
Alternate Options: N/A		

4.2.5 Non-Functional Requirements

Non-functional requirements are often called the "quality attributes" of a system. Here, according to this website Non-Functional Requirements are discussed below.

Security requirements: During developing a website, Security and administration is a matter of great importance. Only the administrator's main website has access to the dashboard to control features. This project is covered vue.js programming language at backend which contains various layers of security.

User friendly interfaces & less response time: Every interface of this website is easily understandable and user friendly. Because of containing fast speed of server users can use this website without interruption.

Extensibility and maintainability requirements: The website can be expanded to accommodate many more modules without making any changes to any existing modules. This website is created in such a way that the administrator can easily maintain server, agent and customer sides simultaneously.

Feasibility analysis: The main purpose of the feasibility analysis is to determine whether it would be financially and technically feasible to develop a project or not.

- **Operational feasibility:** The website is useful only if it is turned into information systems that will meet the company's operating conditions.
- **Technical feasibility:** The software and hardware requirements to develop this website is the concerning matter on technical feasibility. The proposed technology has to meet all software requirements by considering factors as the browser support for PHP programming language along with basic web technologies.
- **Economic feasibility:** Appropriate budget, financial benefits, investment vs. profit are main factors for economic feasibility. There is no need for any extra man power to maintain the website.

CHAPTER 5

DESIGN & ANALYSIS

5.1 Data Flow Diagram

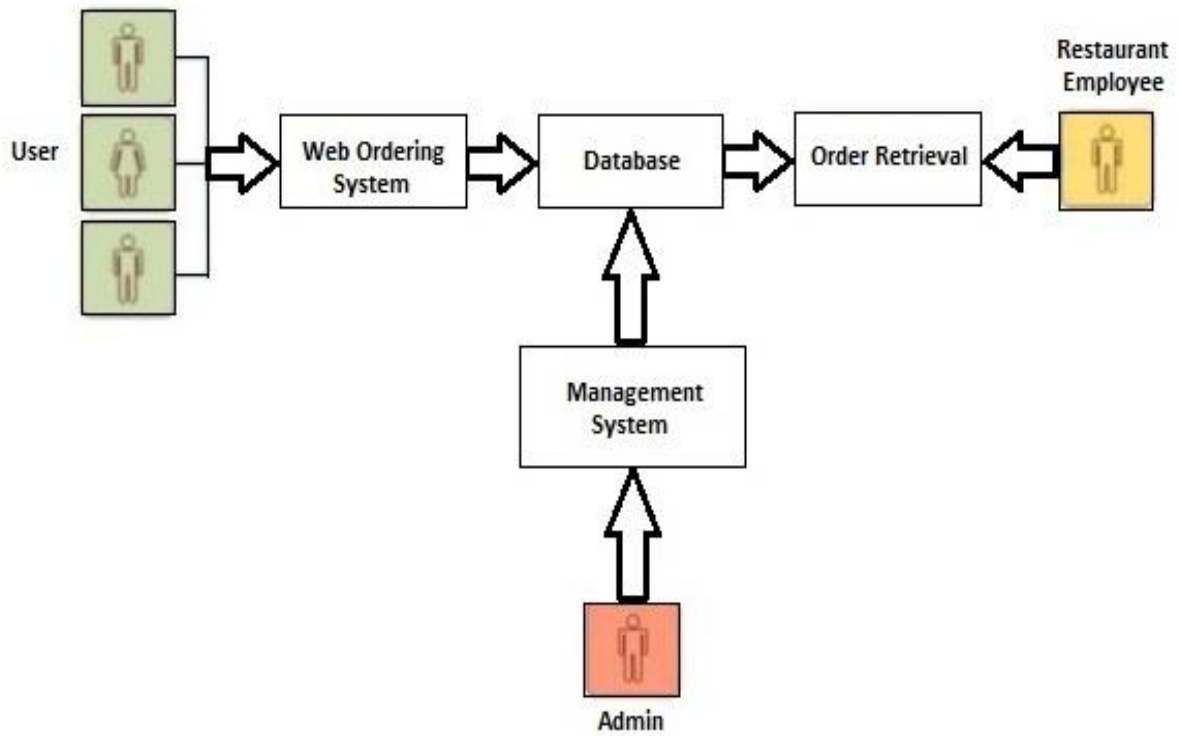


Figure 5.1: Data Flow Diagram.

Here, User and admin both enter to the system through web. Admin look after the menu management system and update to the database with the help of restaurant employee. Besides, Users check the stock and vacancy of tables through the database which is showing by admin and then order or book tables through the system.

5.2 Component Diagram

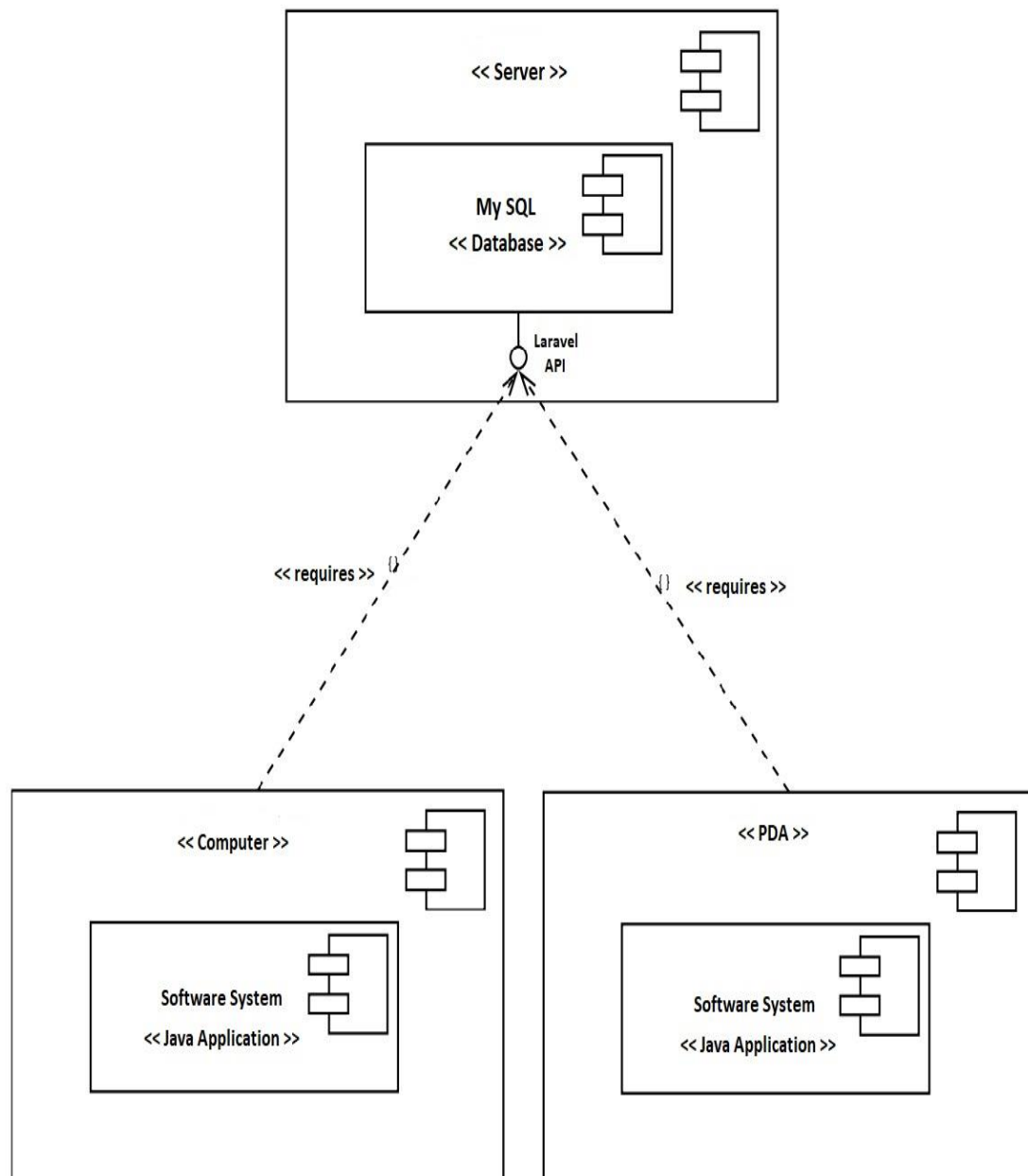


Figure 5.2: Component Diagram showing the higher-level architecture of the system.

5.3 Design of Class Diagram for the Admin.

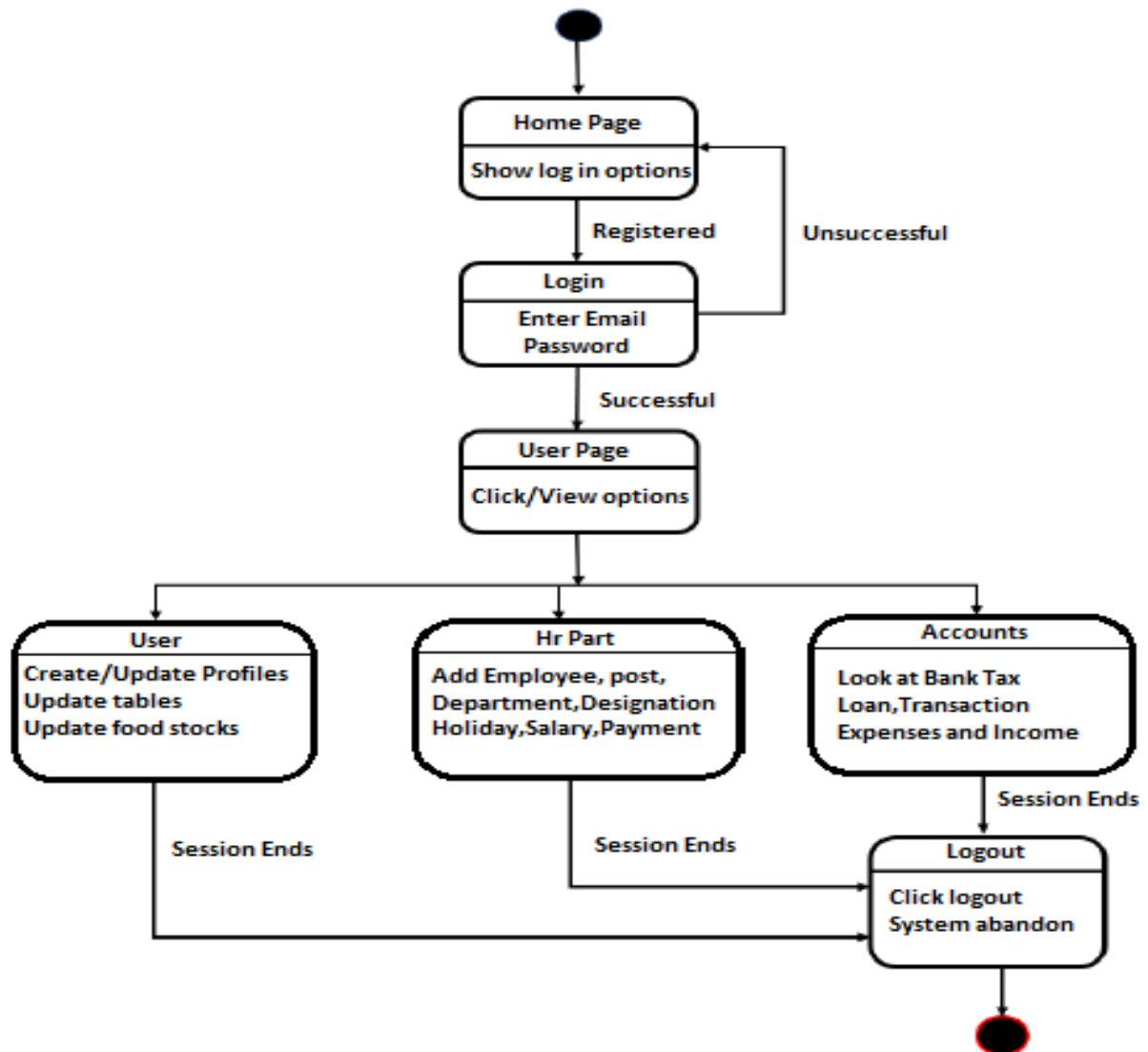


Figure 5.3: Design of Class Diagram for the Admin.

While, designing workflow for the user at first user/hr/accounts needs to go through the Home Page. Then he/she will be shown login options and categories. If he/she is already registered by putting valid username and password, he/she can log in.

A user/employee can create/edit/delete a specific option by id, name, date, details, quantity, photo, weight and description, email address etc. by filling up necessary fields. He/she can also check specific status according to their options.

5.4 Flow chart to show the flow of events of an order.

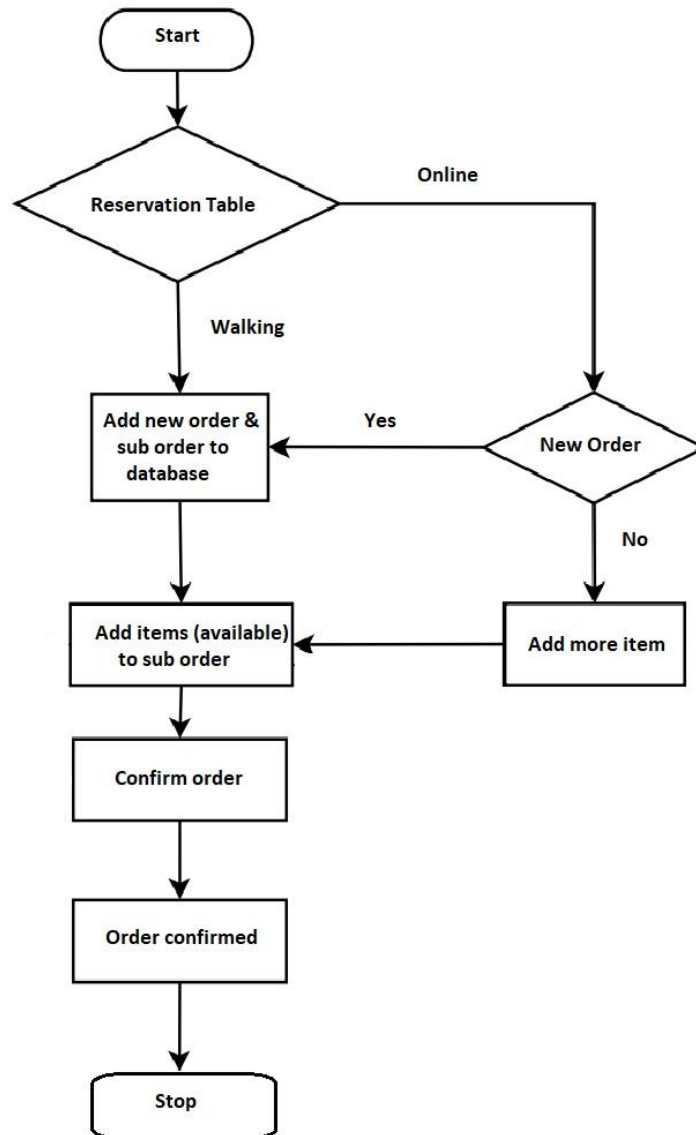


Figure 5.4: Flow chart to show the flow of events of an order.

5.5 Entity Relationship Diagram (ERD)

This diagram shows entity relationships between user, admin & food item.

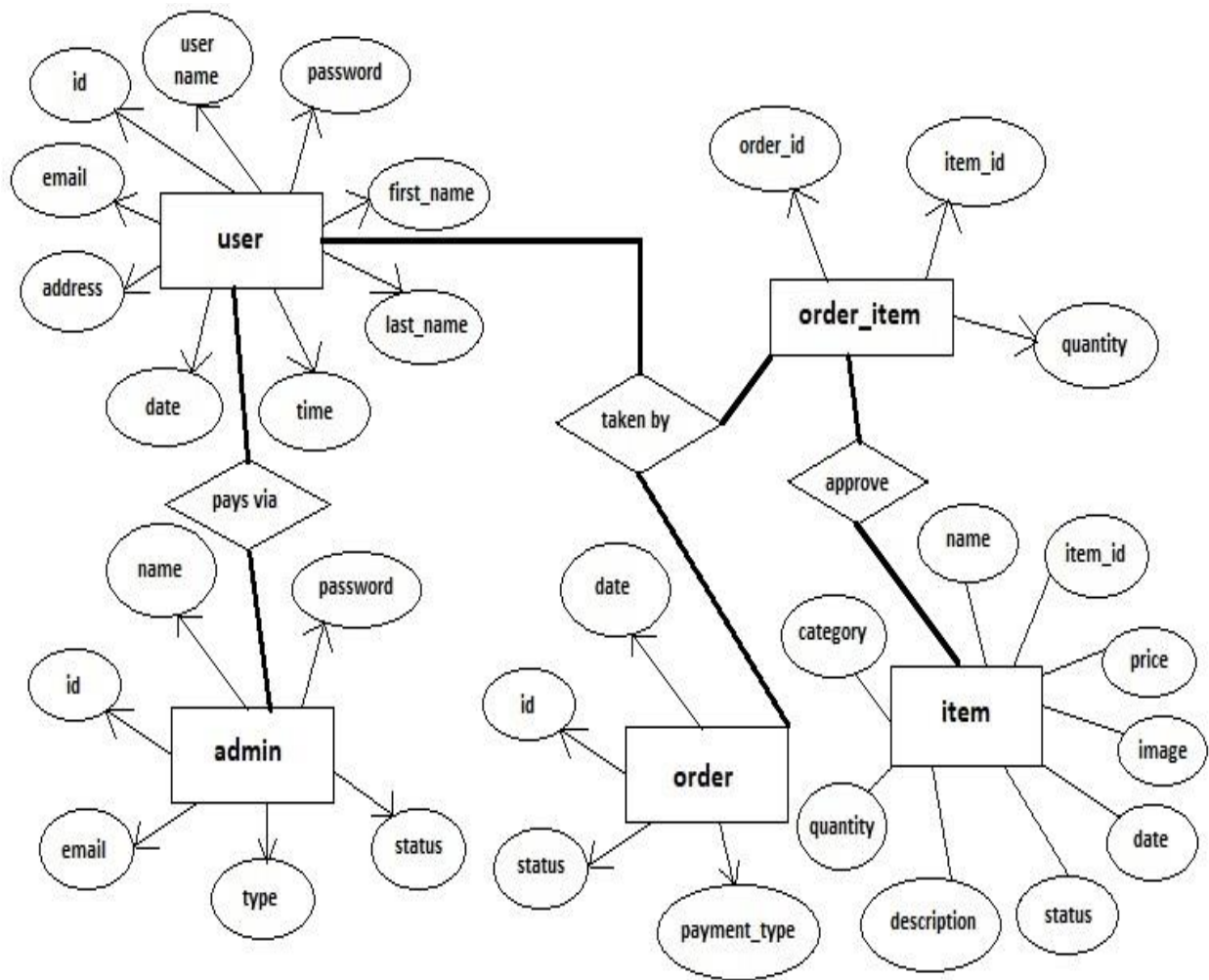


Figure 5.5: Entity Relationship Diagram (ERD).

CHAPTER 6

IMPLEMENTATION

I have seen the design and analysis of Restaurant Management System Admin. In this section, I will explain how the Restaurant Management System Admin has been developed and the tools that have been required as well as the process of configuring, coding and other system components.

6. MySQL Database

Database is used to store all the information like unique Id of the user, name, and products name for every page. It also helps to verify and identify the user and products status.

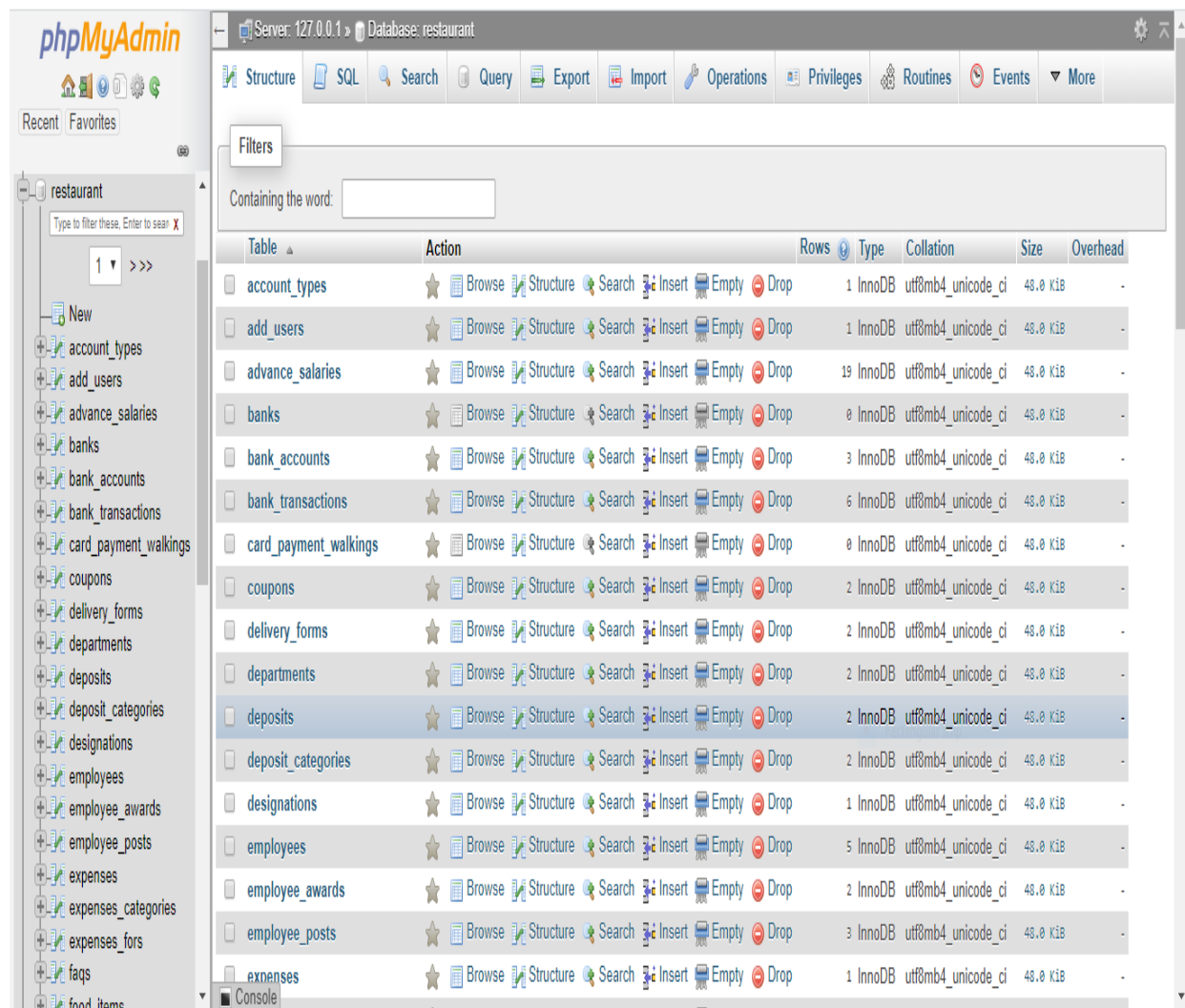


Figure 6.1: Database of the user id, name, products name and information of everything.

For implementing the web app, we used XAMPP which is a free and open-source cross platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MySQL database, and interpreters for scripts written in the PHP.

In this project it has been worked through Local host, which is basically a local server that allowed hosting website online on a local IP that is visible only in this system, by connecting to web server like Apache Web Server.

After installing XAMPP and activated/started Apache HTTP server which supports a variety of features, many implemented as compiled modules which extend the core

functionality. Then by activating/starting MySQL which is helpful for database driven web applications.

6.1 Laravel API

Laravel API allows migrating schemas automatically by command. In this project schemas created for all specific pages that help to create database by migrating through Laravel commands. In Laravel API for each pages a controller, a model and a route has been built which is the plug in with the vue-nuxt project. By connecting laravel api and vue nuxt project with database the whole project works parallel.

```
File Edit Selection View Go Run Terminal Help
api.php - restaurant-api - Visual Studio Code

EXPLORER
> OPEN EDITORS
RESTAURANT-API
  index.php
  robots.txt
  web.config
  resources
  google-cloud
    service-account.json
  js
  lang
  sass
  views
  restaurant_sql
  routes
    api.php
    channels.php
    console.php
    web.php
  storage
  app
  framework
  cache
  data
  .gitignore
  sessions
  .gitignore
  OUTLINE
  TIMELINE
  NPM SCRIPTS

routes > api.php
15
16 Route::prefix('v1')->group(function() {
17     Route::post('login', 'Auth\LoginController@login');
18     Route::post('register', 'Auth\RegisterController@create');
19
20     Route::group(['middleware' => 'auth:api'], function() {
21
22     });
23
24     Route::get('bank', 'Api\BankController@get');
25     Route::get('banks', 'Api\BankController@getAll');
26     Route::post('bank', 'Api\BankController@create');
27     Route::post('bank/update', 'Api\BankController@update');
28     Route::delete('banks', 'Api\BankController@deleteAll');
29
30     Route::get('bank-account', 'Api\BankAccountController@get');
31     Route::get('bank-accounts', 'Api\BankAccountController@getAll');
32     Route::post('bank-account', 'Api\BankAccountController@create');
33     Route::post('bank-account/update', 'Api\BankAccountController@update');
34     Route::delete('bank-accounts', 'Api\BankAccountController@deleteAll');
35
36     Route::get('account-type', 'Api\AccountTypeController@get');
37     Route::get('account-types', 'Api\AccountTypeController@getAll');
38     Route::post('account-type', 'Api\AccountTypeController@create');
39     Route::post('account-type/update', 'Api\AccountTypeController@update');
40     Route::delete('account-types', 'Api\AccountTypeController@deleteAll');
41
42     Route::get('take-loan', 'Api\TakeLoanController@get');
43     Route::get('take-loans', 'Api\TakeLoanController@getAll');
44     Route::post('take-loan', 'Api\TakeLoanController@create');
45     Route::post('take-loan/update', 'Api\TakeLoanController@update');
46     Route::delete('take-loans', 'Api\TakeLoanController@deleteAll');
47
```

Figure 6.1.1: Laravel API controller.

```
File Edit Selection View Go Run Terminal Help api.php - restaurant-api - Visual Studio Code

EXPLORER
> OPEN EDITORS
RESTAURANT-API
  index.php
  robots.txt
  web.config
  resources
  google-cloud
    service-account.json
  js
  lang
  sass
  views
  restaurant_sql
  routes
    api.php
    channels.php
    console.php
    web.php
  storage
  app
  framework
  cache
  data
  .gitignore
  sessions
  .gitignore
  > OUTLINE
  > TIMELINE
  > NPM SCRIPTS

routes > api.php
15
16 Route::prefix('v1')->group(function() {
17     Route::post('login', 'Auth\LoginController@login');
18     Route::post('register', 'Auth\RegisterController@create');
19
20     Route::group(['middleware' => 'auth:api'], function() {
21
22     });
23
24     Route::get('bank', 'Api\BankController@get');
25     Route::get('banks', 'Api\BankController@getAll');
26     Route::post('bank', 'Api\BankController@create');
27     Route::post('bank/update', 'Api\BankController@update');
28     Route::delete('banks', 'Api\BankController@deleteAll');
29
30     Route::get('bank-account', 'Api\BankAccountController@get');
31     Route::get('bank-accounts', 'Api\BankAccountController@getAll');
32     Route::post('bank-account', 'Api\BankAccountController@create');
33     Route::post('bank-account/update', 'Api\BankAccountController@update');
34     Route::delete('bank-accounts', 'Api\BankAccountController@deleteAll');
35
36     Route::get('account-type', 'Api\AccountTypeController@get');
37     Route::get('account-types', 'Api\AccountTypeController@getAll');
38     Route::post('account-type', 'Api\AccountTypeController@create');
39     Route::post('account-type/update', 'Api\AccountTypeController@update');
40     Route::delete('account-types', 'Api\AccountTypeController@deleteAll');
41
42     Route::get('take-loan', 'Api\TakeLoanController@get');
43     Route::get('take-loans', 'Api\TakeLoanController@getAll');
44     Route::post('take-loan', 'Api\TakeLoanController@create');
45     Route::post('take-loan/update', 'Api\TakeLoanController@update');
46     Route::delete('take-loans', 'Api\TakeLoanController@deleteAll');
47
```

Figure 6.1.2: Laravel API route.

6.2 Testing

For testing, this Windows application both white box and black-box testing methodologies have been applied. Where white box testing is a software test method internal structure tester who is going to test software and black box testing software testing method that code or program is used to test the software knowing the internal structure. Here, the role played for developer and tester as well as UAT (user acceptance testing) also done by team member.

TABLE 6.2: TEST CASE OF RESTAURANT MANAGEMENT SYSTEM

Test Scenario ID	Test Scenario Description	Test Case Description	Test Steps	Precondition	Post Condition	Expected Results	Actual Results	Status
01	Verify Login functionality	Entering valid user ID & password	[1] Enter valid user ID & valid password [2] Click on Login button	Valid Test Data	User should be able to see the home page	Successful Login	As expected,	Pass
02	Verify Login functionality	Entering valid user ID & password	[1] Enter valid user ID & valid password [2] Click on Login button	Valid Test Data	Error message as “invalid username or password”	A pop-up message to show an error	As expected,	Pass
03	Verify Login functionality	Entering invalid username & valid password	[1] Enter invalid user ID & password [2] Click on Login button	Valid Test Data	Error message as “invalid username or password”	A pop-up message to show an error	As expected,	Pass
04	Navigation Bar functionality	Appearance of Navigation Bar	[1] Entering to any page of software	Valid test type	Navigation Bar should be appeared on screen	Navigation Bar appears	As expected,	Pass
05	Adding new Food Item	Entering necessary	[1] Entering	Food Item added	N/A	All Data saved to	As expected,	Pass

		Information	necessary information [2] Click on add button			database		
06	Manage Food Item	Go to list page	[1] Select Food Item [2] Right click on mouse	Edit or delete test type	Edit or delete popup should appear	Edit a Food Item or Delete a Food Item	As expected,	Pass
07	Adding new HR part	Entering necessary Information	[1] Entering necessary information [2] Click on add button	Department added	N/A	All Data saved to database	As expected,	Pass
08	Manage HR part	Go to list page	[1] Select department [2] Right click on mouse	Edit or delete test type	Edit or delete popup should appear	Edit a department or delete a department	As expected,	Pass
09	Adding new Accounts part	Entering necessary Information	[1] Entering necessary information [2] Click on add button	Account added	N/A	All Data saved to database	As expected,	Pass
10	Manage Accounts part	Go to list page	[1] Select accounts [2] Right click on mouse	Edit or delete test type	Edit or delete popup should appear	Edit an account or delete an account	As expected,	Pass

6.3 Deployment

While the testing is done for the web app Restaurant management system, it is compiling for release. Here the executive files for web app Restaurant management system going to be deployed on Web server. From the web server users can access the system.

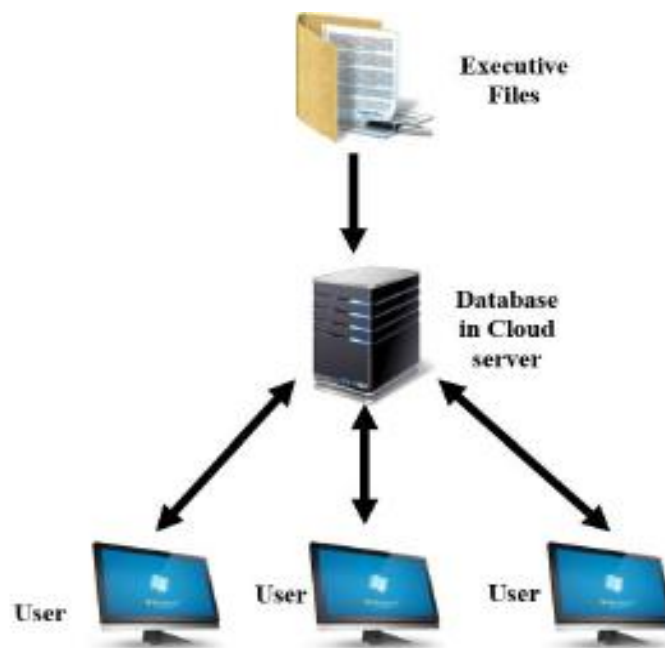


Figure 6.3: Deployment of Restaurant Management System.

CHAPTER 7

PROJECT/WORK AS ENGINEERING PROBLEM ANALYSIS

7.1 Sustainability of the Product/Work

The development of sustainable software has been identified as one of the key challenges within the field of Web Application. Sustainable development aims to meet show needs whereas guaranteeing supportability of common frameworks and the environment to not compromise the capacity of future generations to meet their possess needs. To keep the software more sustainable maintains of the system and user interface need to change time to time keep the function similar. This is because using the same software for a long time may reduce the modern development around us. To keep up with it, system must be developing as well as software.

For Sustainable,

- Interviewing with different stakeholders for better understand and make easy user interface product for software.
- Review of one or more similar projects, than developing initial work.
- Evaluation and feedback of stakeholders will help to improvement the system and software for Sustainable which is done through collaborative case study.

7.2 Social and Environmental Effects and Analysis

To test the catalog of criteria and legitimacy of the technique, testing facility tests were done on software items within the item bunches content handling, browser, substance administration framework, and database. A comparison of computer program items inside each gather and with the same usefulness uncovered pertinent contrasts in terms of equipment assets use and energy. Take the case of content handling: the vitality utilization of program 1 run on the same equipment to execute the standard utilization situation was about four times higher and processor utilization more than four times more noteworthy than with the comparable program 2. To keep the application working is optimum condition, we make sure it can use in minimum configuration include in our non-function properties.

CHAPTER 8

CONCLUSION & RECOMMENDATION

8.1 Conclusion

For restaurant management support, Restaurant Management System is very helpful and time saving project. By this web app customers will be able to get food and reserve table very easily. Besides, admin will be able to keep the whole process in a well-arranged mode. This project will be able to keep a standard connection between customers and company agents. The web app Restaurant Management System is successfully developed which procedure we discussed broadly in this report and the company Paronsoft solutions ltd monitored its every step chronologically.

8.2 Recommendation

The Web App Restaurant Management System is prepared a proper planned way, but still; there few features can be added in future which will make the users more comfort and more satisfied. Future Developers of the system can add maps, which can boost up the communication process. A live video session and screen sharing can be added as well. Moreover, continuous development of interface and user-friendly options will be able to satisfy customer users which will create a positive value for developers.

APPENDIX – (User Interface Screenshots)

PARON SOFT

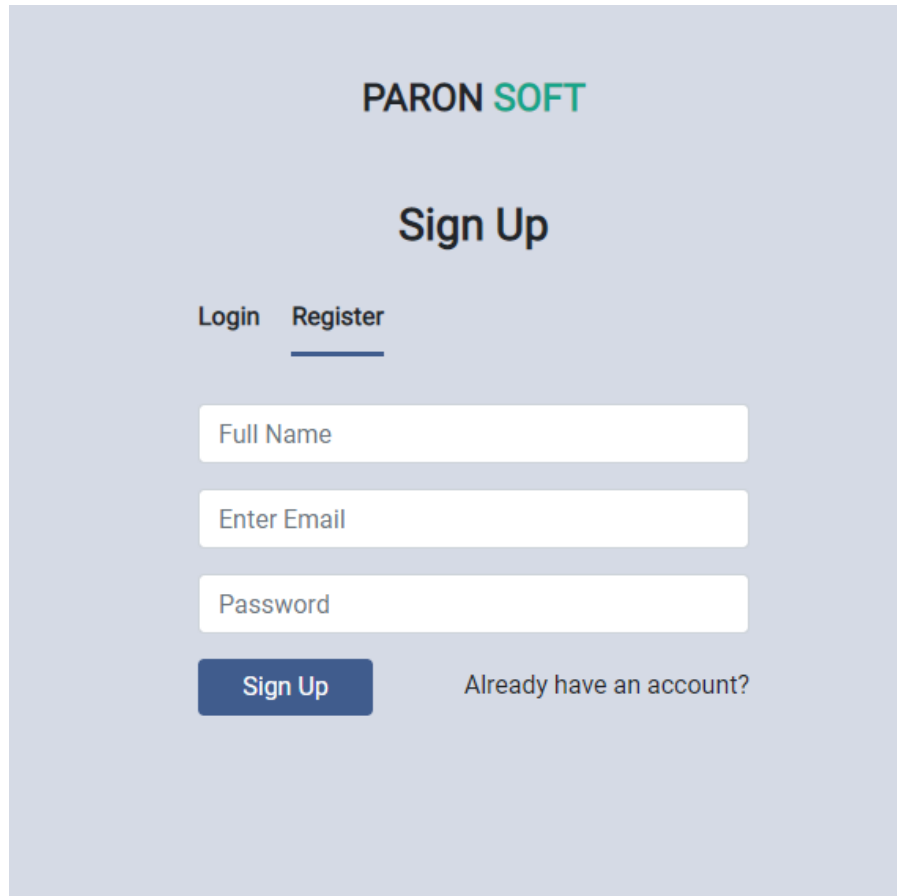
Login

[Login](#) [Register](#)

jahirul15-11538@diu.edu.bd

Login [Forget password?](#)

Login Page of the web app



PARON **SOFT**

Sign Up

Login Register

Full Name

Enter Email

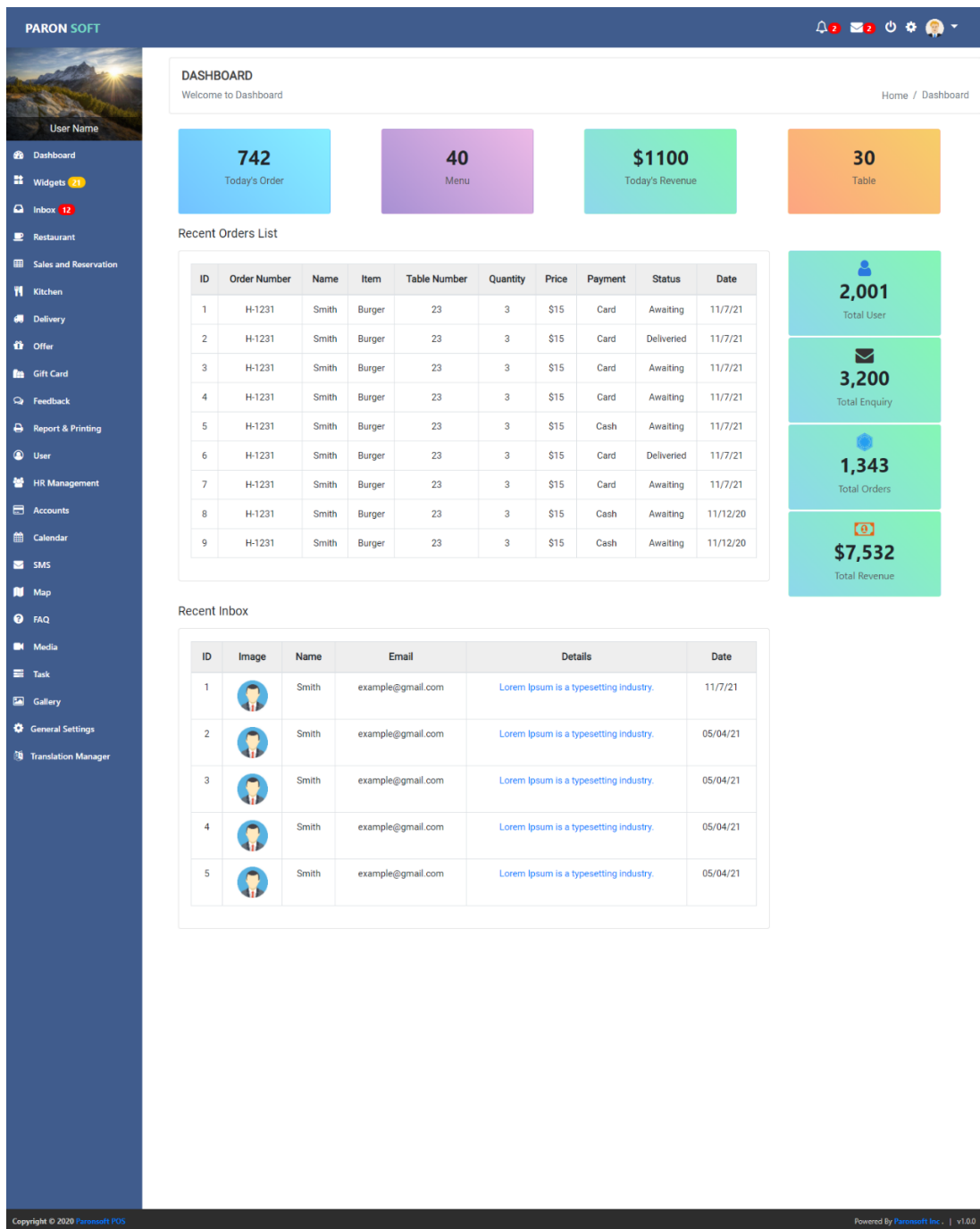
Password

Sign Up

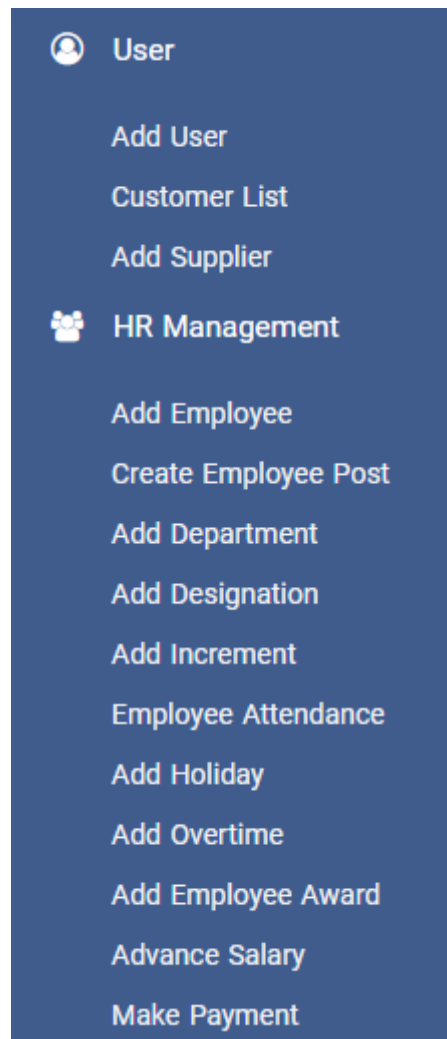
Already have an account?

The image shows a 'Sign Up' form for 'PARON SOFT'. At the top, the logo 'PARON SOFT' is displayed with 'SOFT' in green. Below it is the title 'Sign Up'. There are two links: 'Login' and 'Register', with 'Register' being the active link, indicated by a blue underline. The form consists of three white input fields with rounded corners: 'Full Name', 'Enter Email', and 'Password'. Below these fields is a dark blue button with the text 'Sign Up' in white. To the right of the button is the text 'Already have an account?'.

Register Page of the web app



Admin Dashboard



User & HR Management



Accounts

Add Bank

Add Bank Account

Add Account Type

Add Deposit

Add Deposit Category

Add Withdraw

Bank Account Transfer

Bank Transaction

Take Loan

Add Tax

Add Tax Applies To

Expenses

Expenses Category

Expenses For

Add Income

Add Income Category

Add Income From

Accounts Part

ADD ITEM

Welcome to Item

Home / Item

ITEM LIST

ADD ITEM

Title

Price

Weight Per Unit

Quantity

Available ☒

Ingredient

Description

 Add Photo

Add

Adding food items

ADD ITEM

Welcome to Item

Home / Item

ITEM LIST

ADD ITEM

Burger

250

150

1

Available ☒

Cheese, Lettuce, Tomato, Onion, Pickles, Bacon, Meat, Bread

Healthy & Tasty

 Add Photo



Add

Adding food items

References:

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WEB APPLICATION DEVELOPMENT: RESTAURANT MANAGEMENT SYSTEM FOR ADMIN PANEL

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