Project Report

Course : Software Engineering
Section: F
Group: D
Course Code: CSC3114
Course : Software Engineering
Faculty : DR. MD. TAIMUR AHAD
Date : 26-09-2020

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Introduction

1.1 Purpose :

The purpose of this document is to build an online system to manage food items and food service to ease restaurant management systems. The project will serve the users to go a step further and define it is a software stack that helps restaurants grow.
by helping restaurants to reduce the order processing time, automate redundant work, deliver a great customer experience, determine Profits & Costs. Both the stakeholders and the developers will be benefited from the document.

1.2 Document Conventions :

This document uses the following conventions.

DB Database
DDB Distributed Database
ER Entity Relationship

Project Planning

The project planning has been done thoroughly with the help of university guidance and slide and study materials . In this project , the agile method has been used as the management of restaurants is changeable and keeps changing with customer satisfaction and demand.

1	Agile method is seemingly the appropriate way to go for a software model for our project compared.
2	● Our project is not of a fixed requirement format, i.e. the requirements may change at any point. This is suitable for agile methods as this method allows requirement changes or updates, even in the late stages of development. ● A direct communication, preferably face to face is suggested by agile method between client and developer groups. This is the approach we want to take for our project. ● Agile model also suggests rapid development of the software in the development phase i.e. deliver working software frequently. ● According to agile method, the team will give opinions and communicate on how to be more effective for the development at regular intervals. ● The progress of the development of the project will be measured by how much of the software is working, as opposed to not working or being in development
3	Aishwarjyo Roy – Brainstorming Design the architecture Implemented programming. Snigdho Dip Howlader – Brainstorming Implemented programming Website Development. Gourab Kumar Ghosh – Brainstorming Risk management Testing Abrar Ragib – Brainstorming Analysis

1.3 Intended Audience and Reading Suggestions:

This project is a prototype for the restaurant management system and it is restricted within the online premises. This has been implemented under the guidance of university professors. The project is useful for the restaurant management team and as well as to the customers. The document has a sequential overview of the whole project which will help to get a clear idea about the restaurant management system.

1.4 Project Scope:

The final products will enable the company to advertise their food items through online which will increase the popularity and the productivity and company can sell new products easily and capture the market by doing advertisements online and this gives more customer satisfaction. All the information about the daily expenses and profit will be captured in the projecthe Above all, it will provide a comfortable user experience along with the best pricing available.

1.5 References:

- www.wikipedia.com
- https://sites.google.com/site/ignoubcafinalyearprojects/project-report/restaurent-management-system-project-report
- https://www.scribd.com/document/406995082/Final-Report-Restaurant-Management-System
- https://www.slideshare.net/Aurnob0071/software-requirements-specification-for-restaurant-management-system
- https://limetray.com/blog/restaurant-management-system/

1.6 Technologies to be used (Hardware & Software)

- Windows.
- A browser which supports HTML & Javascript and AJAX.
- HTML, CSS.Bootstrap
- PHP , JavaScript, AJAX
- Microsoft Excel
- Microsoft words
- Coogle
- UML Tool

Overall Description

2.1 Product Perspective

A distributed online restaurant management system stores the following information

- **Food Details:** it includes the name of the foods, the price per item, the number of available foods, the number of available selected foods, the total number of selected foods, the total price for the selected foods.

- **Customer description:** It includes customer code, name, address and phone number. This information may be used for keeping the records of the customer for any emergency or for any other kind of information.

- **Order description:** It includes customer details, code number, payment number, date of purchase, date of order, total bill, payment method, delivery confirmation for online service.

2.2 Product Functions

This project enables the customers to get more detailed ideas about the food and information about new items and food service through advertisement. They can track the previous purchase and validation easily through their personal account associated with the website.

2.3 User Classes and Characteristics

Users of the system should be able to view food items, select items and order food items.The system will support two types of user privileges, Customer, and Shopkeepers. Customers will have access to customer functions, and the employees will have access to both customer and restaurant management functions. The customer should be able to do the following functions:

- View food item
- Select food items

- Add food items
- Order food items
- Cancel an existing order
- View his itinerary

The Employee should have following management functionalities:

- Customer functions
- Get all customers who have ordered food items.
- Get all food items for a given order
- View order schedule
- Get all food items whose transactions and delivery times are on time/delayed.
- Get all food items whose transactions and delivery times are on time/delayed.

Administrative:

-
- Add a new food item
- Delete food items
- Update order for customers
- Delete food items
- Update delivery of the food items
- Update the payment procedure online and offline.

2.4 OPERATING ENVIRONMENT:

Operating environment for the restaurant management system is as listed below.

- client/server system
- Operating system: Windows.
- database: sql database
- platform: vb.net/Java/PHP
- Distributed database

2.5 DESIGN and IMPLEMENTATION CONSTRAINT:

- GUI is only in English

- Login and password is used for the identification of the users.
- Only registered customers and restaurant owners will be authorized to use the services.
- The system is working for single server

2.6 ASSUMPTION DEPENDENCIES:

Let us assume that this is a distributed restaurant management system and it is used in the following application:

- A request for booking/cancellation of a food from any source to any destination, giving orders
- Calculation of most active users and calculating appropriate discounts for those users

3. System Features

3.1 DESCRIPTION and PRIORITY

The restaurant management system maintains information on food items, classes of users, user preferences, prices, and orders. Of course, this project has a high priority because it is very difficult to get food service without prior reservations.

1. **STIMULUS/RESPONSE SEQUENCES**

- Search for food items
- Displays a detailed list of available food items and makes an order
- Cancel an existing order

2. **FUNCTIONAL REQUIREMENTS**

- Users shall be able to enter data.
- Administrator will be able to manipulate data
- Administrator will be able to remove data

- User shall be able to order item via app
- Admin will be able to take the order
- Admin will be able to serve the order
- Admin will be able to receive the payment
- Customer will be able to review
- Customer will be able to get registered through id and password

3. Other system features include:

- Payment is possible both online and offline
- Offers and discounts will also be available and maintained by the admin
- Receipt will be granted automatically

4. Distributed Database

Distributed database implies that a single application should be able to operate transparently on data that is spread across a variety of different databases and connected by a communication network as shown in below figure. In the project distributed database has been used for better outcome.

5. Server System

The term client/server refers primarily to an architecture or logical division of responsibilities, the client is the application (also known as the front-end), and the server is the DBMS (also known as the back-end).
A client/server system is a distributed system in which,

- Some sites are client sites and others are server sites.
- All the data resides at the server sites.
- All applications execute at the client sites.

EXTERNAL INTERFACE REQUIREMENTS

5.1 USER INTERFACES

- Front-end software: HTML, CSS.Bootstrap
- Back-end software: PHP , JavaScript, AJAX

5.2 HARDWARE INTERFACES

- Windows.
- A browser which supports HTML & Javascript and AJAX.

5.3 SOFTWARE INTERFACES

Following are the software used for the restaurant management online application.

Software used	Description
Operating system	We have chosen Windows operating system for its best support and user-friendliness.
Database	To save the medicine records, customers records we have chosen an SQL database.
HTML, CSS.Bootstrap	To implement the project we have chosen this for its more interactive support.

5.4 COMMUNICATION INTERFACES

This project supports all types of web browsers. We are using simple electronic forms for the order of foods, place orders etc.

6.Non functional Requirements

5.1 PERFORMANCE REQUIREMENTS

The steps involved to perform the implementation of the restaurant database are as listed below.

5.2 Use Case: The use case diagram was drawn. Here is the simplified use case diagram given

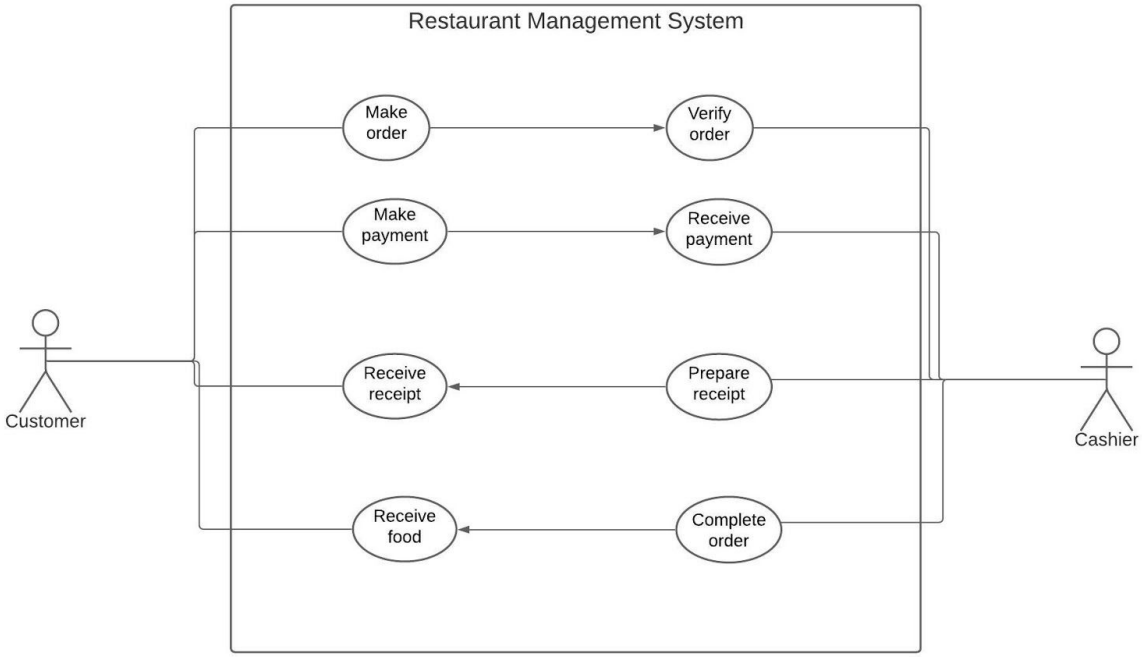


Figure : Use case diagram

5.3 ER diagram:

The E-R Diagram constitutes a technique for representing the logical structure of a database in a pictorial manner. This analysis is then used to organize data as a relation, normalizing relation and finally obtaining a relation database.

- **ENTITIES:** Which specify distinct real-world items in an application.
- **PROPERTIES/ATTRIBUTES:** Which specify properties of an entity and relationships.

- **RELATIONSHIPS:** Which connect entities and represent meaningful dependencies between them.

Here is given the ER of the project by using tools and with the help of materials .

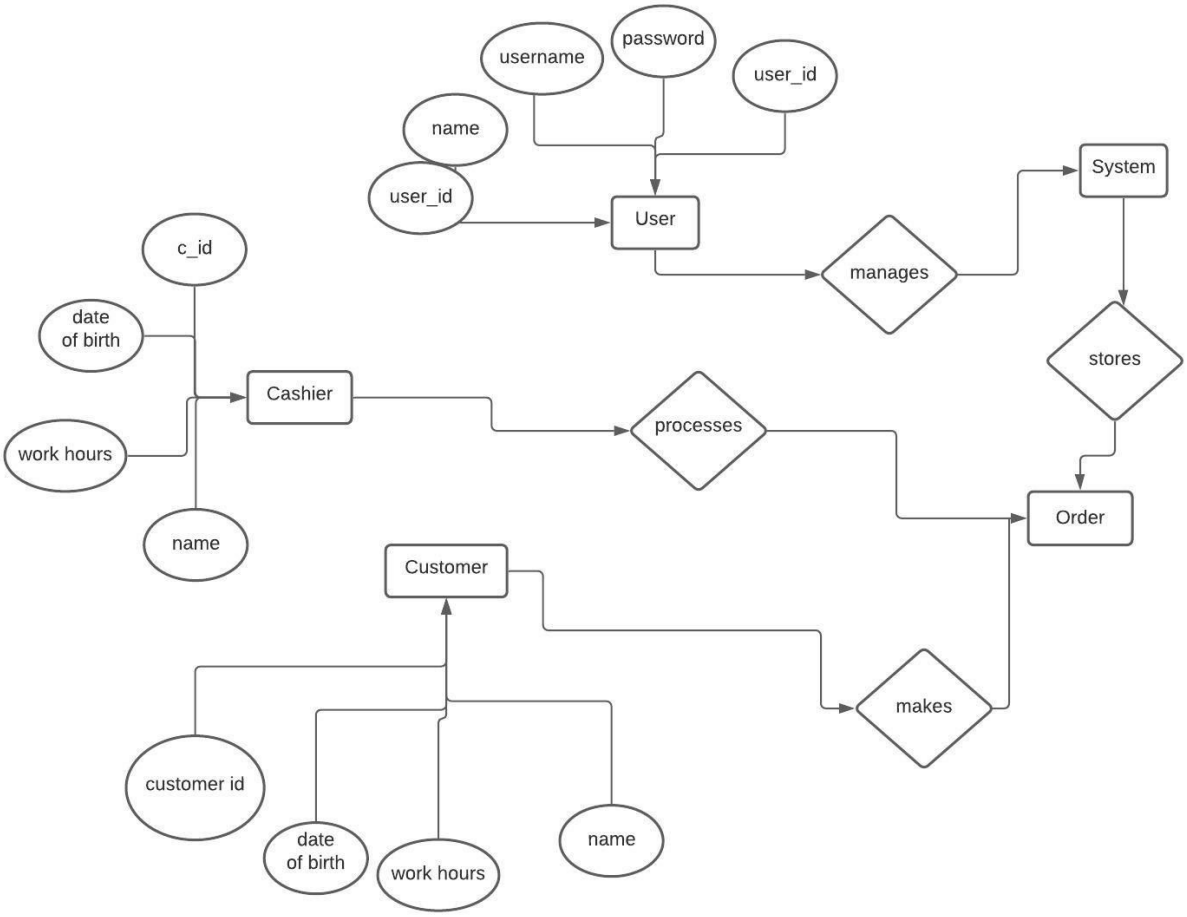


Figure: ER of Restaurant Management System

5.4 Normalization:

The basic objective of normalization is to reduce redundancy which means that information is to be stored only once. Storing information several times leads to wastage of storage space and increase in the total size of the data stored.

If a database is not properly designed it can give rise to modification anomalies. Modification anomalies arise when data is added to, changed or deleted from a database table. Similarly, in traditional databases as well as improperly designed relational databases, data redundancy can be a problem. These can be eliminated by normalizing a database.

Normalization is the procedure of breaking down a table into smaller tables. So that each table deals with a single theme. There are three different kinds of modifications of anomalies and formulated the first, second and third normal forms (3NF) is considered sufficient for most practical purposes. It should be considered only after a thorough analysis and complete understanding of its implications.

In the project , the customer id is the primary key. For administrator , the admin id is the primary key. A 3NF database connection has been used for better organisation, where the id and password should be valid to get to the homepage and order materials. In the database table there are several tables for the information of the customer , administrator and a regular user which is a restaurant manager.

The whole database has been user controlled with a possible security management which is why the admin panel can only manipulate and modify the information and enter or remove data of the other user or customers.

7.Safety Requirements

If there is extensive damage to a wide portion of the database due to catastrophic failure, such as a disk crash, the recovery method restores a past copy of the database that was backed up to archival storage (typically tape) and reconstructs a more current state by reapplying or redoing the operations of committed transactions from the backed up log, up to the time of failure.

7.1 SECURITY REQUIREMENTS

Security systems need database storage just like many other applications. However, the special requirements of the security market mean that vendors must choose their database partner carefully.

7.2 SOFTWARE QUALITY ATTRIBUTES

- **AVAILABILITY:** The medicines should be available on the specified date and specified time as many customers are placing orders.
- **Performance:** The performance of the project is assumed to be upto 80% by calculation. Though the environment is a factor with the basis of customer demand
- **Efficiency:** Using agile methods for a better and efficient project has been a part of the planning which in the long term will be beneficial . The agile manifesto has been followed for the efficiency of the project
- **Flexibility:** With the proper functional requirement the project has been flexible enough to modify the modules in a short period of time.
- **Integrity:** The developers have made sure to create the project in a proper way and to integrate the whole project into a module.
- **Interoperability:** The project has been taken enough care to make the best use of information and the interoperability between devices made by different manufacturers also.

- **Robustness:** The ability to withstand or overcome adverse conditions has been taken care properly in the project.
- **Reusability:** The modules are created in such a way that the use of existing assets in some form within the software product development process has been done.
- **Testability:** Finally the project has been tested by the developers and testers repeatedly.

8. System Design

Completing the proper assumptions the system design has been finalized by fulfilling the requirements which can be displayed through class diagrams. The diagram will guide the audience and developers to easily understand the project requirements and tasks

8.1 Class Diagram

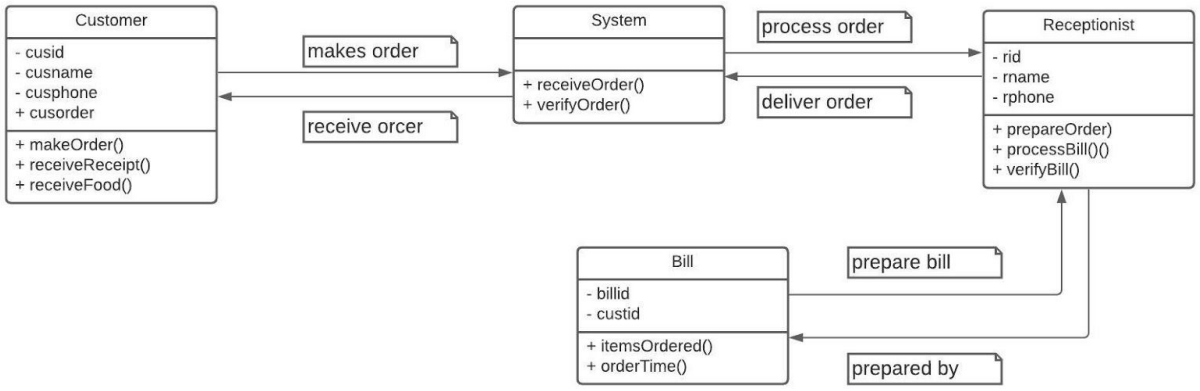
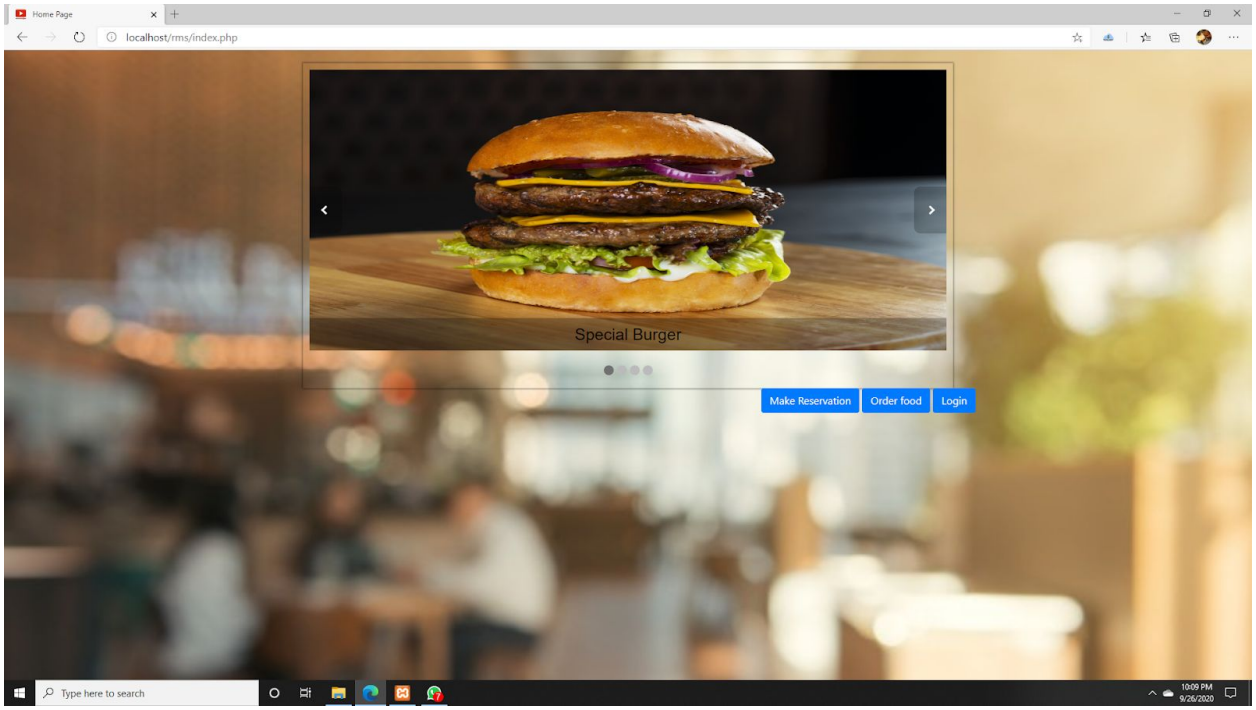
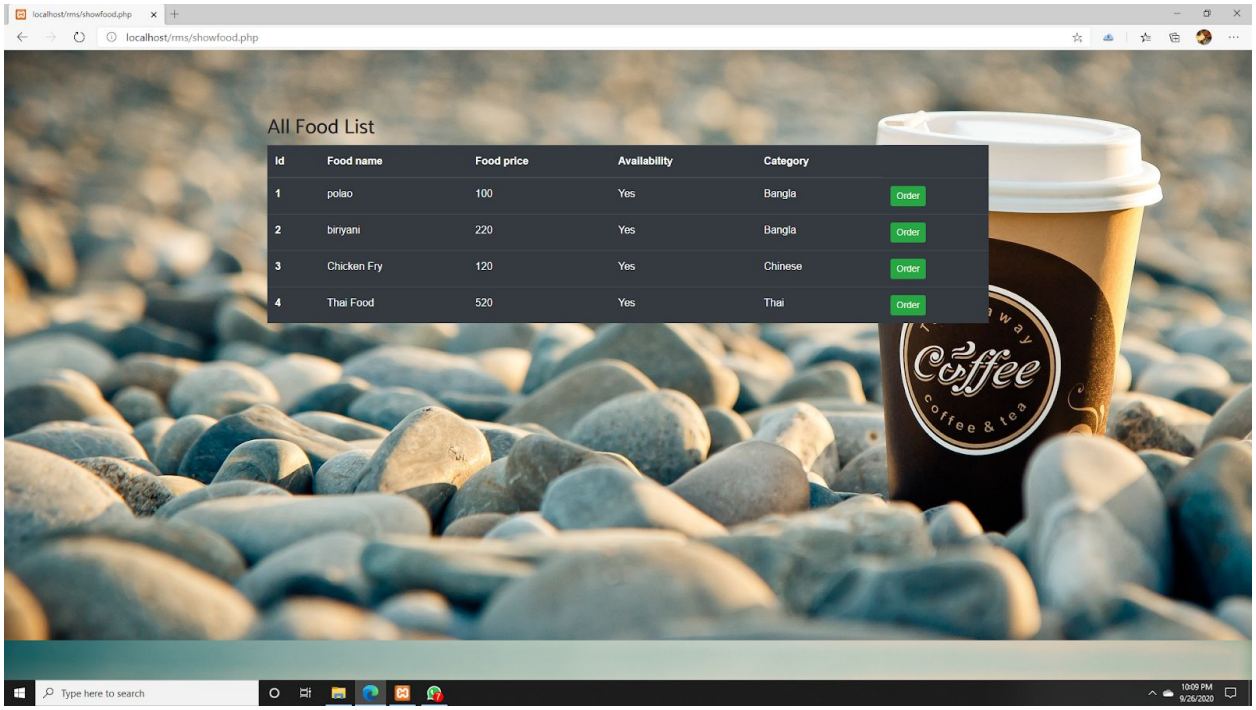
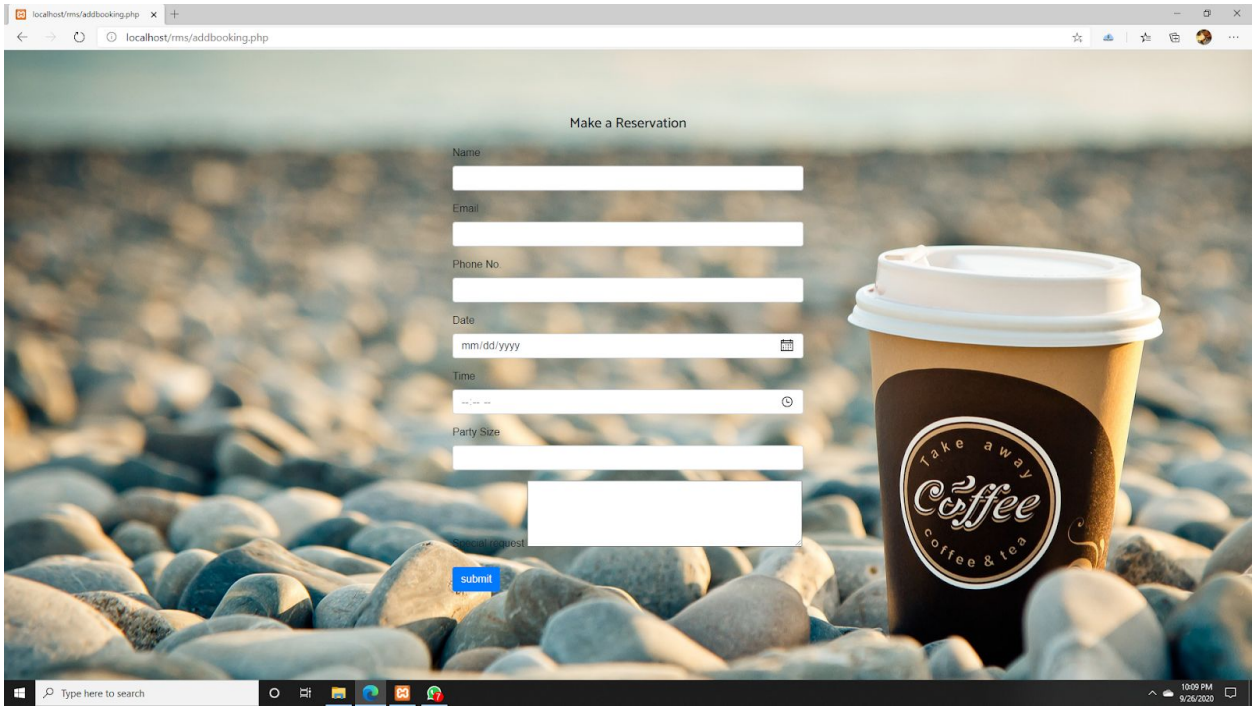


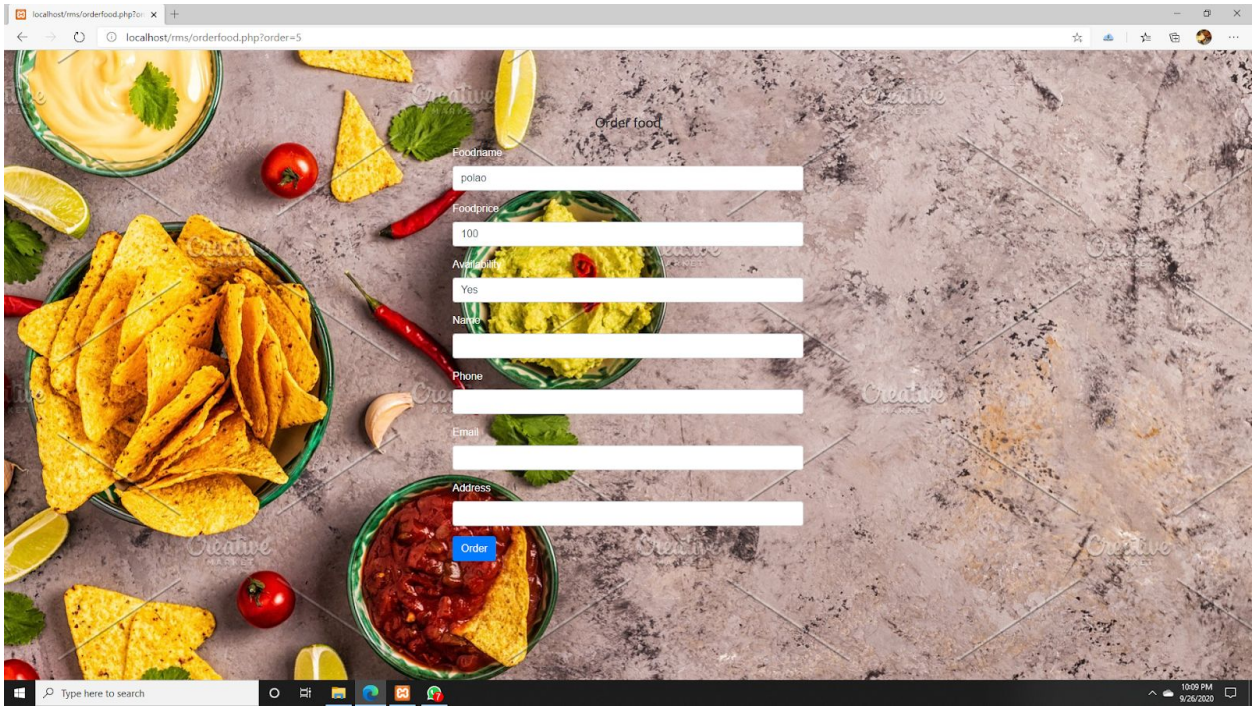
Figure: Class Diagram

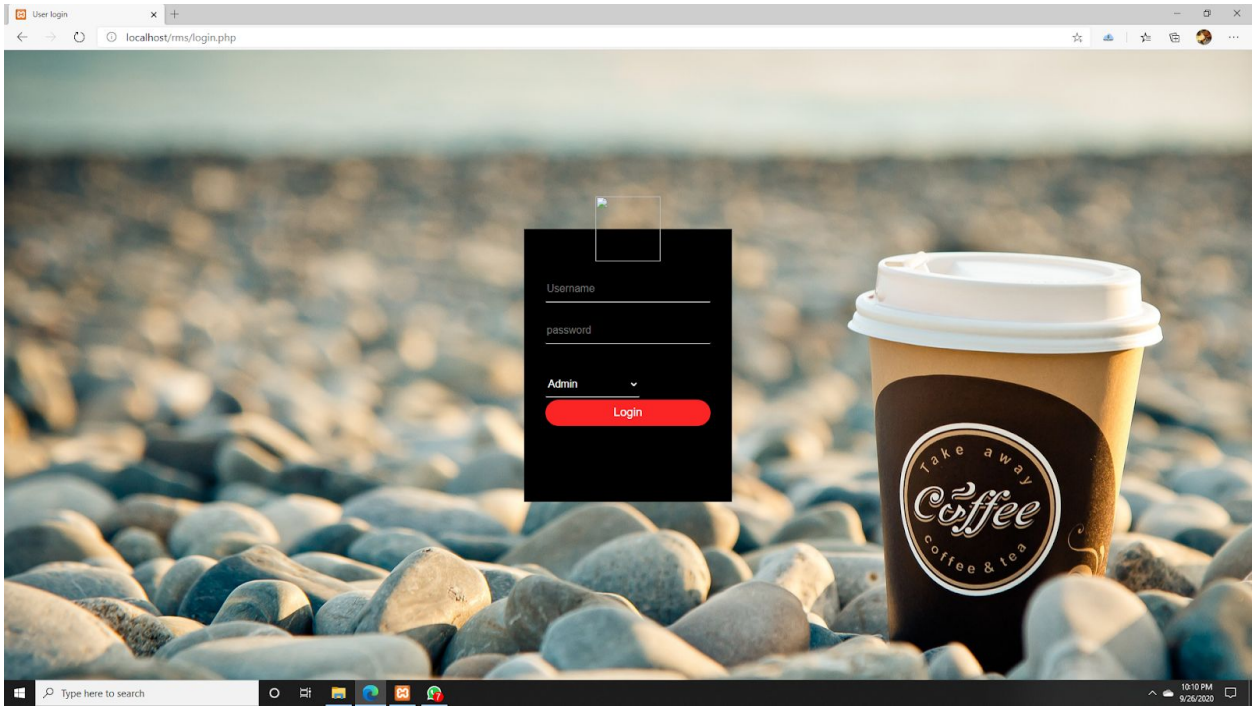
9.User Interface

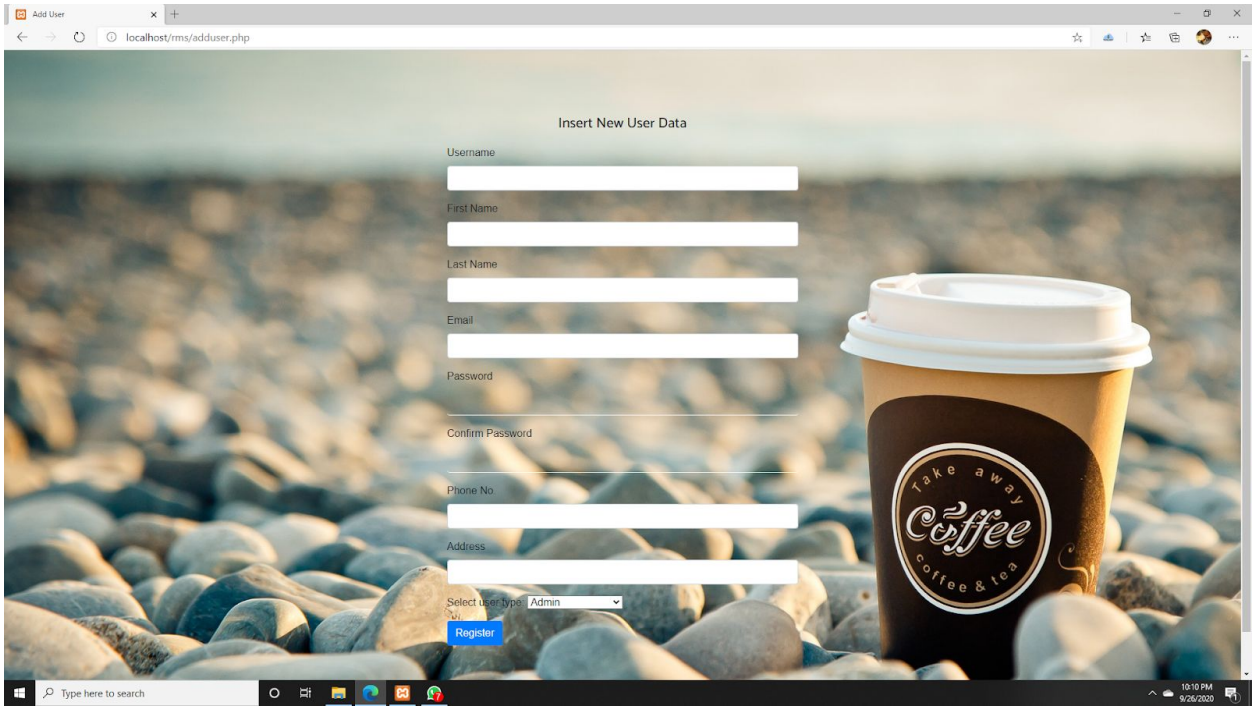


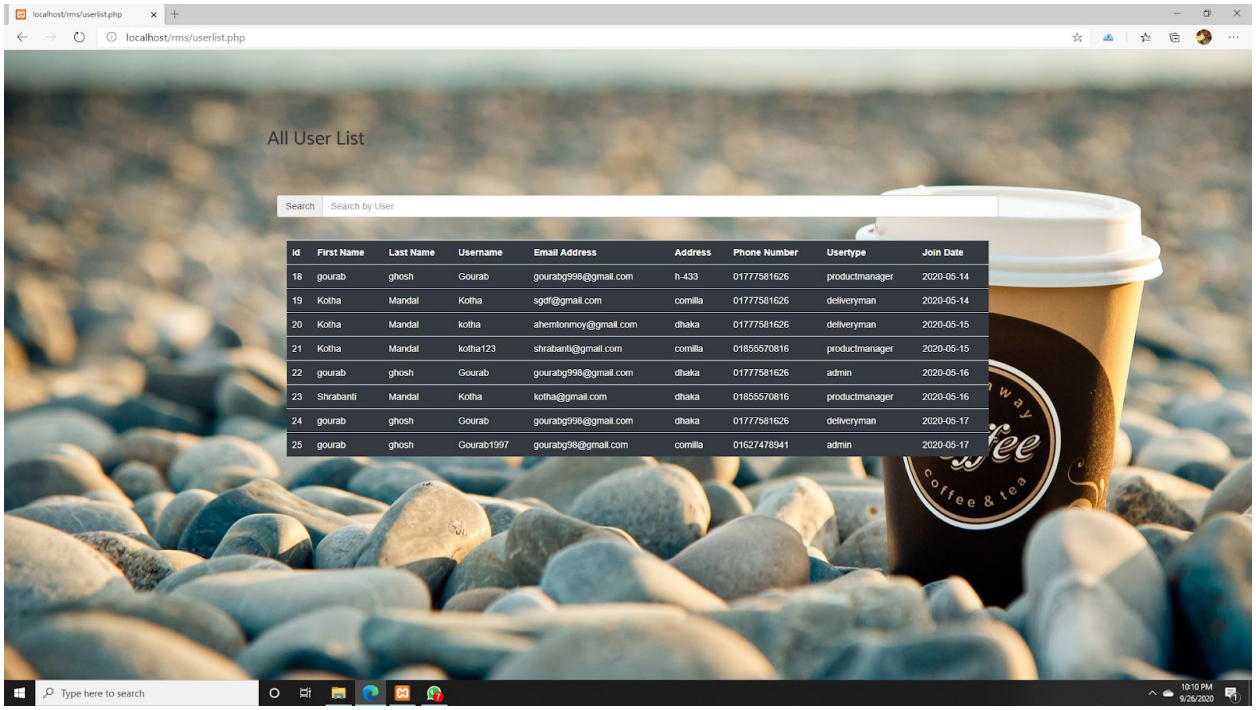

localhost/rms/showfood.php
All Food List
Id
Food name
Food price
Availability
Category
1
polao
100
Yes
Bangla
Order
2
biriyani
220
Yes
Bangla
Order
3
Chicken Fry
120
Yes
Chinese
Order
4
Thai Food
520
Yes
Thai
Order
Coffee
coffee & tea
Type here to search


localhost/rms/addbooking.php
Make a Reservation
Name
Email
Phone No.
Date
mm/dd/yyyy
Time
Party Size
Special Request
submit
Coffee
coffee & tea
Type here to search


localhost/rms/orderfood.php?order=5
Order food
Foodname
polao
Foodprice
100
Availability
Yes
Name
Phone
Email
Address
Order
Type here to search
10:09 PM
9/26/2020


User login
localhost/rms/login.php
Username
password
Admin
Login
Take away
Coffee
coffee & tea
Type here to search
10:10 PM
9/26/2020


Add User
localhost/rms/adduser.php
Insert New User Data
Username
First Name
Last Name
Email
Password
Confirm Password
Phone No
Address
Select User Type
Admin
Register
Type here to search
10:10 PM
9/26/2020


localhost/rms/userlist.php
All User List
Search
Search by User
id First Name Last Name Username Email Address Address Phone Number Usertype Join Date
16 gourab ghosh Gourab gourabg998@gmail.com h-433 01777581626 productmanager 2020-05-14
19 Kotha Mandal Kotha sgdf@gmail.com comilla 01777581626 deliveryman 2020-05-14
20 Kotha Mandal kotha ahemtonmoy@gmail.com dhaka 01777581626 deliveryman 2020-05-15
21 Kotha Mandal kotha123 shrabanti@gmail.com comilla 01855570816 productmanager 2020-05-15
22 gourab ghosh Gourab gourabg998@gmail.com dhaka 01777581626 admin 2020-05-16
23 Shrabanti Mandal Kotha kotha@gmail.com dhaka 01855570816 productmanager 2020-05-16
24 gourab ghosh Gourab gourabg998@gmail.com dhaka 01777581626 deliveryman 2020-05-17
25 gourab ghosh Gourab1997 gourabg98@gmail.com comilla 01627478941 admin 2020-05-17
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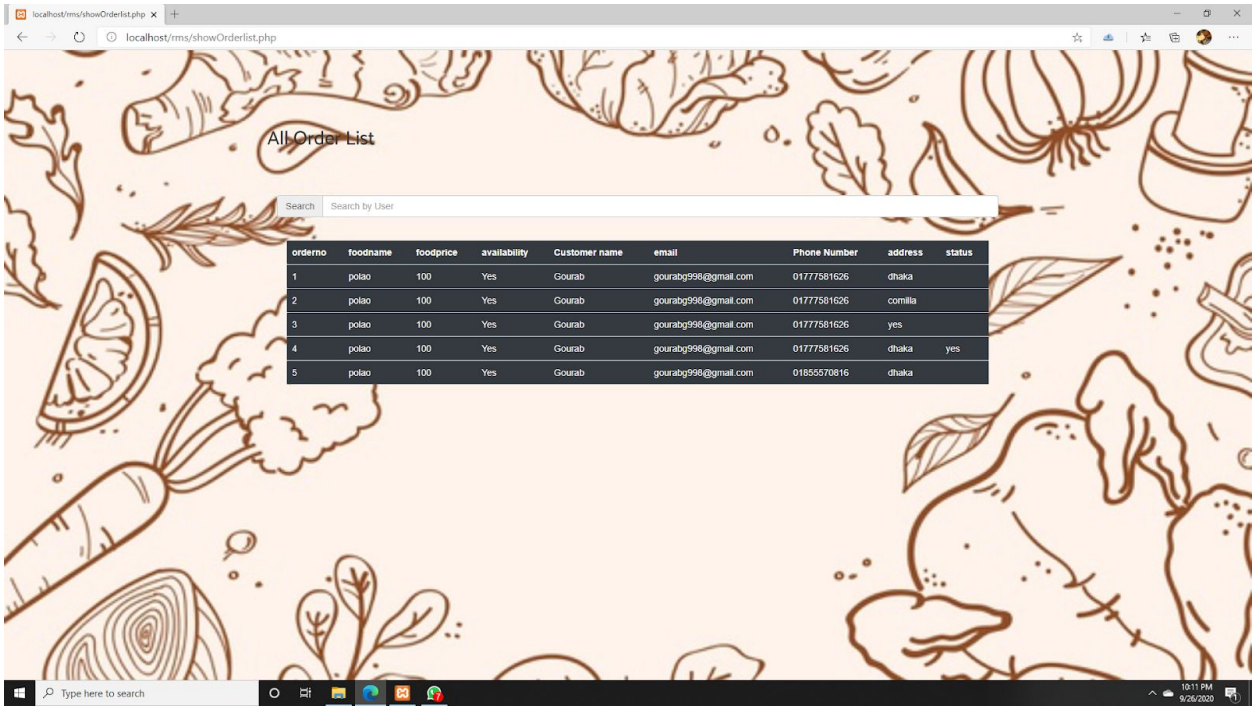
localhost/rms/showOrderlist.php
localhost/rms/showOrderlist.php
All Order List
Search
Search by User
orderno foodname foodprice availability Customer name email Phone Number address status
1 polao 100 Yes Gourab gourabg998@gmail.com 01777581626 dhaka
2 polao 100 Yes Gourab gourabg998@gmail.com 01777581626 comilla
3 polao 100 Yes Gourab gourabg998@gmail.com 01777581626 yes
4 polao 100 Yes Gourab gourabg998@gmail.com 01777581626 dhaka yes
5 polao 100 Yes Gourab gourabg998@gmail.com 01855570816 dhaka
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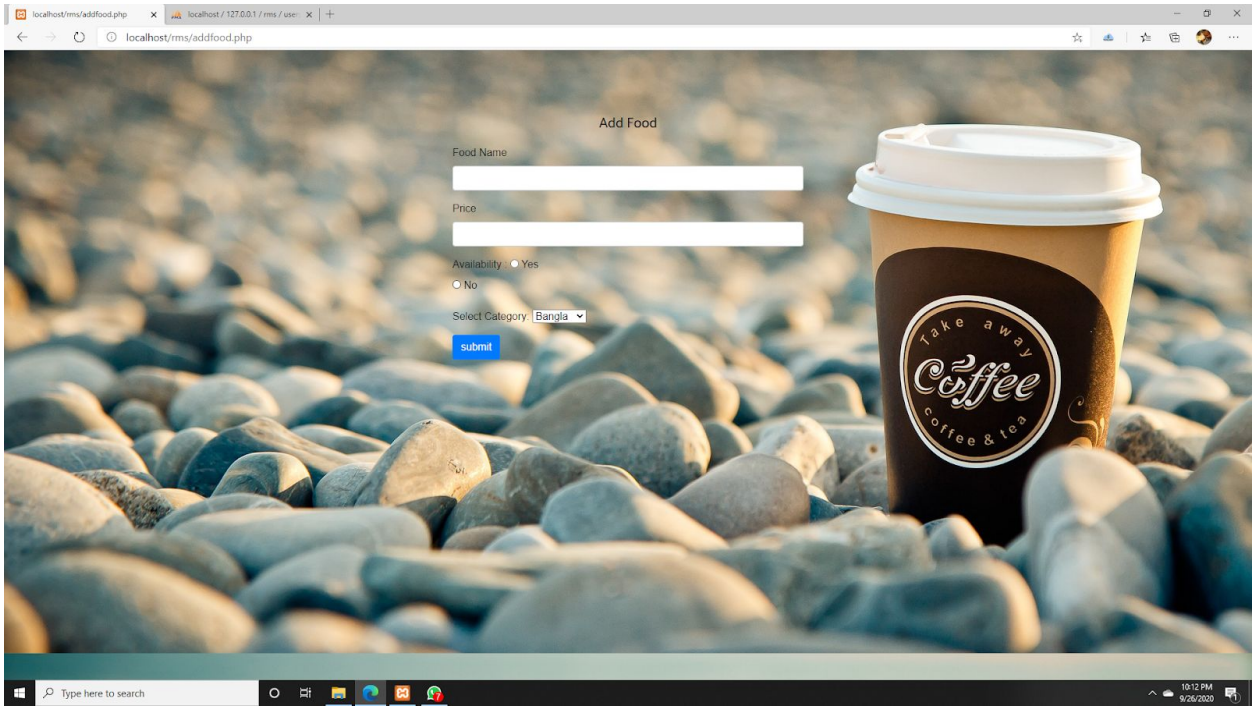
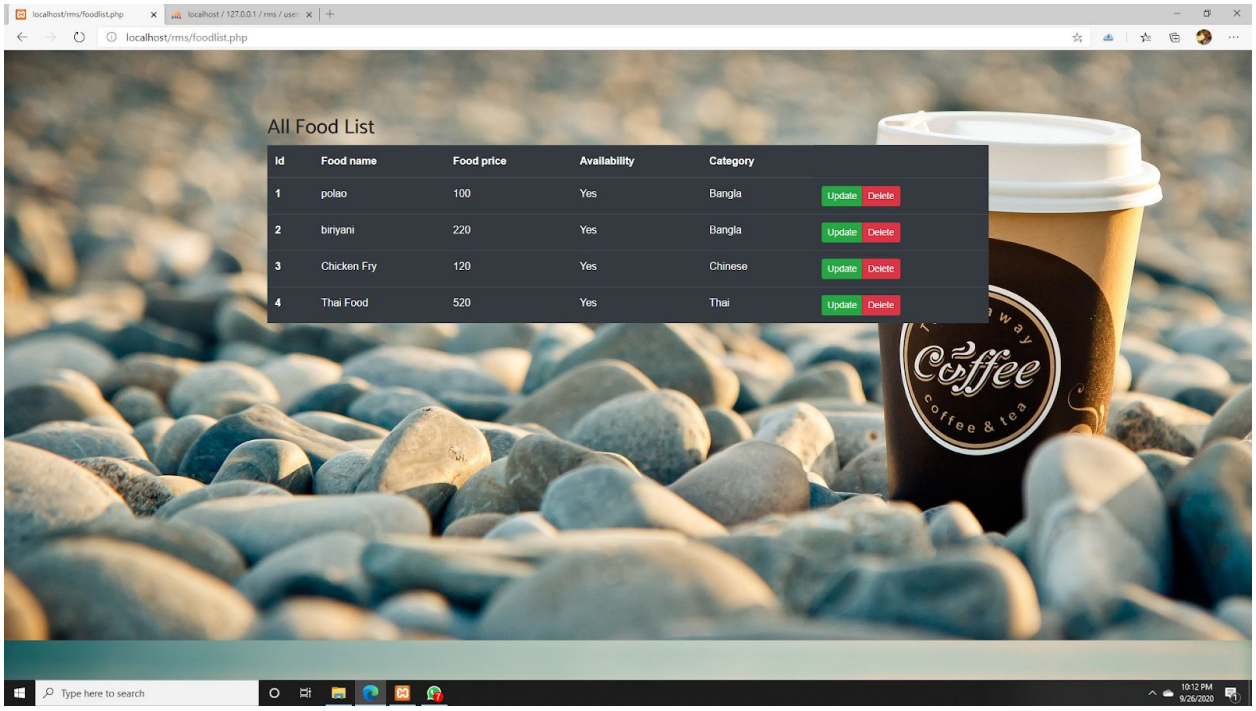
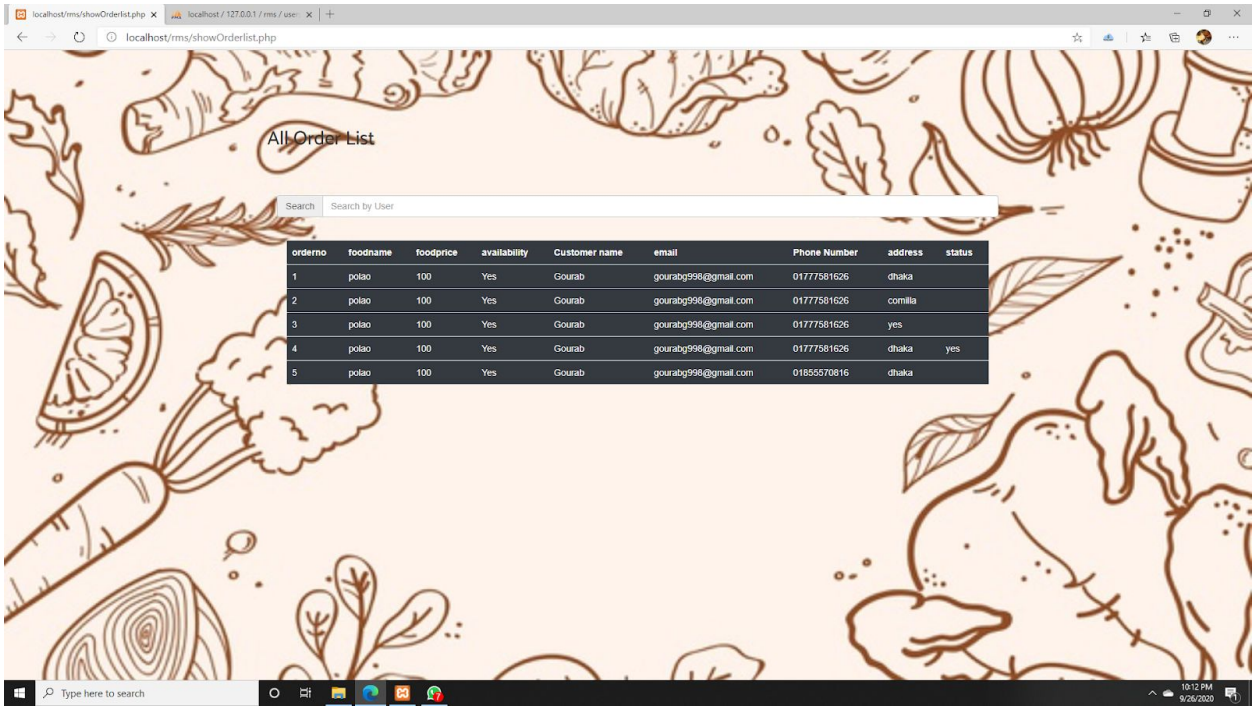
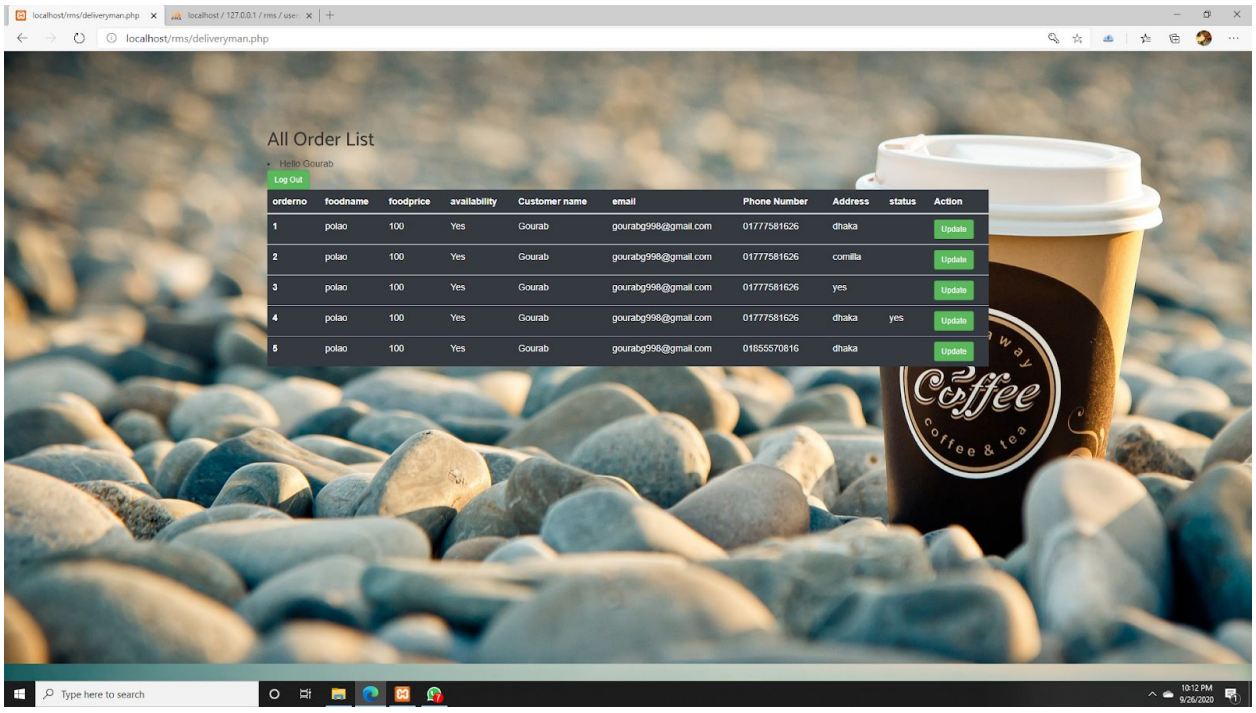
9/26/2020


localhost/rms/addfood.php
Add Food
Food Name
Price
Availability Yes
No
Select Category Bangla
submit
Take away
Coffee
coffee & tea
Type here to search
10:12 PM
9/26/2020


localhost/rms/foodlist.php
All Food List
Id Food name Food price Availability Category
1 polao 100 Yes Bangla Update Delete
2 biryani 220 Yes Bangla Update Delete
3 Chicken Fry 120 Yes Chinese Update Delete
4 Thai Food 520 Yes Thai Update Delete
Take away
Coffee
coffee & tea
Type here to search
10:12 PM
9/26/2020


localhost/rms/showOrderlist.php
All Order List
Search
Search by User
orderno foodname foodprice availability Customer name email Phone Number address status
1 polao 100 Yes Gourab gourabg998@gmail.com 01777581626 dhaka
2 polao 100 Yes Gourab gourabg998@gmail.com 01777581626 comilla
3 polao 100 Yes Gourab gourabg998@gmail.com 01777581626 yes
4 polao 100 Yes Gourab gourabg998@gmail.com 01777581626 dhaka yes
5 polao 100 Yes Gourab gourabg998@gmail.com 01855570816 dhaka
Type here to search
10:12 PM
9/26/2020


localhost/rms/deliveryman.php
All Order List
Hello Gourab
Log Out
orderno foodname foodprice availability Customer name email Phone Number Address status Action
1 polao 100 Yes Gourab gourabg998@gmail.com 01777581626 dhaka Update
2 polao 100 Yes Gourab gourabg998@gmail.com 01777581626 comilla Update
3 polao 100 Yes Gourab gourabg998@gmail.com 01777581626 yes Update
4 polao 100 Yes Gourab gourabg998@gmail.com 01777581626 dhaka yes Update
5 polao 100 Yes Gourab gourabg998@gmail.com 01855570816 dhaka Update
Coffee
coffee & tea
Type here to search
10:12 PM
9/26/2020

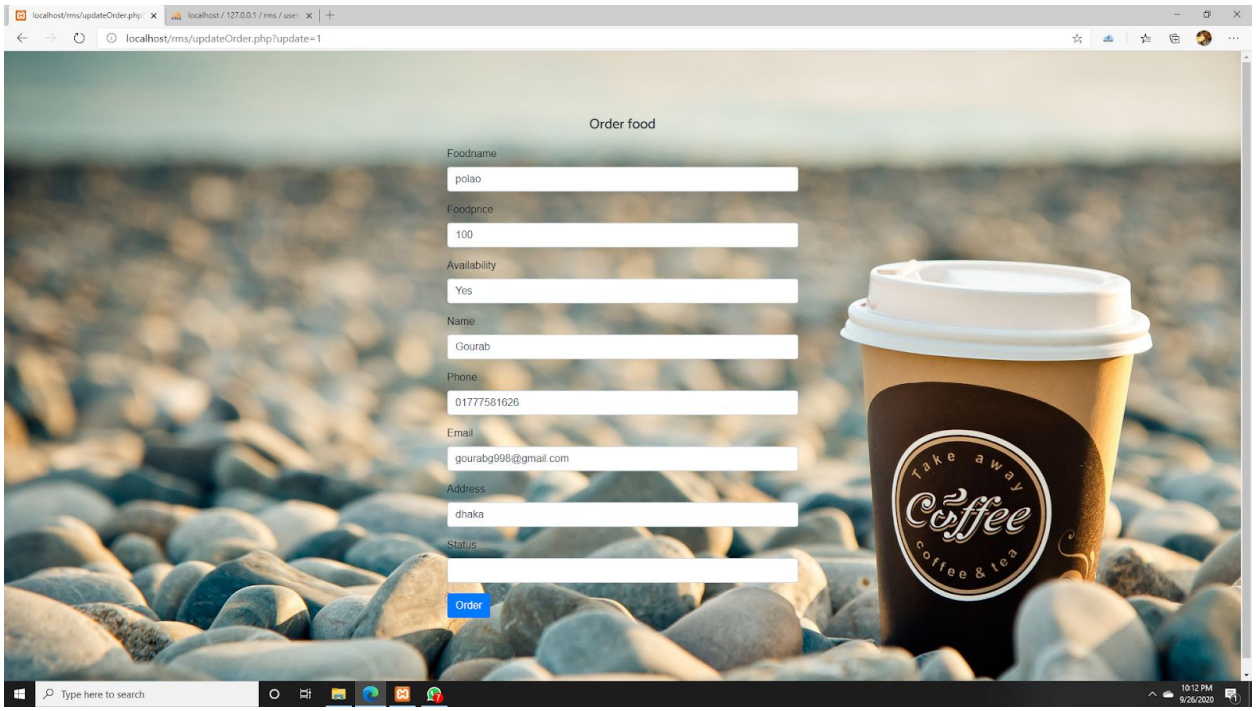


Figure : UI Design

10. Risk Management

All projects involve risk—namely, the risk that something will go wrong. Risk is not necessarily a bad thing, as no progress is made without taking some risk. As per the project of ours there are some risks also that has been undertaken with proper guidance such as -

- Inaccurate metrics
- Inadequate measurement
- Excessive schedule pressure
- Management malpractice
- Low productivity
- Inaccurate cost estimating
- Creeping user requirements
- Low quality

11.Costs

While calculating the costs the facts that have been pointed out are

- Number of input and output flows on the work context
- Number of business events
- Number of product use cases
- Number of functional requirements
- Number of nonfunctional requirements
- Number of requirements constraints
- Number of function points

12. Limitations

As the customer taste and other factors change drastically there is a possibility to have a fall in the project constructions. Also There are some other limitations like

- investment might be taken control by the majority stakeholders for greater benefits.
- Customer and authority relationship get unprofessional
- Reputational demotion and market demand
-

13. Possible Solutions

To avoid the assumed risks and limitations given steps can be taken

- Discussion with experienced vendors , developers and organisers
- Professional experts and business strategists can also help in this case
- Investors and stakeholders should follow the contract and deals
- Maintain customer satisfaction and provide quality products
- Maintain professional behavior with the clients and given priority
- Calculate the risk and take the risk management advices properly

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- https://www.freeprojectz.com/paid-projects/restaurant-management-system
- https://www.freeprojectz.com/paid-projects/restaurant-management-system

THANK YOU