

UNIVERISTY OF RWANDA

Date 05/12/2022.

COLLEGE OF SCIENCE AND TECHNOLOGY

SCHOOL OF ICT

DEPARTMENT OF COMPUTER AND SOFTWARE ENGINEERING

SOFTWARE DESIGN AND DEVELOPMENT LAB.

LEVEL 3

ACADEMIC YEAR 2021-2022.

Names	RegNo
MBONYIMFURA Tresor	220001463
NAMBAJE Edwin	220003634

# **ONLINE RESTAURANT RESERVATION**

# **MANAGEMENT SYSTEM**

## Table of Contents

### Chapter 1. Introduction

- 1.1. Abstract
- 1.2. Existing system
- 1.3. Literature review
- 1.4. Proposed system
- 1.5. Object of the project.

### Chapter 2. System Analysis and Design

- 2.1. System Analysis
  - 2.1.1 Functional Requirements of project.
  - 2.1.2 Intended users of the project
  - 2.1.3 Intended system partners
- 2.2. System Design
  - 2.2.1 UI design (sketch of the UI module)
  - 2.2.2 Database design with ERD and relationship

### Chapter 3. Implementation

- 3.1. Introduction of the section
- 3.2 All screenshots with captions and discussion.

## Chapter 4. Conclusion and Recommendation

- Discuss state of implemented system (90% of your objectives are achieved? Or 10%)
- What do you recommend?
  - To the lecturer about technicalities?
  - To School about Time constraint?
  - To the partners (owners of the business you are targeting) about the app developed?
  - To the user about training?
  - To the beneficiaries (customers or students....) about the new technologic tool?

## Appendix.

- Link account, and password of the GitHub repository of the deployed project.
- Reference.

## TABLE OF FIGURES

Figure 1 SYSTEM DESIGN.....	9
Figure 2 USER INTERFACE DESIGN.....	12
Figure 3 DATABASE DESIGN.....	13

## Chapter 1. Abstract

The project is based on Web Application that can be used by customer to book the desired table and menu of their choice from a restaurant as per their convenience. Previously table reservation was manual which is ending up progressively in well-known restaurants but now a day's people are getting into digital era of reservation of restaurants, and suppliers are considering to choose a

digital system of booking. In manual system, everything depends upon waiter & booking diary and there is no automated system for keeping the records. The general objective is to build a reservation system for table and menu to assist workers with solving basic issues with their manual reservation system. For example, utilization of time and cash. Today's generation encourages high tech services especially over the Internet. Hence the project is developed proficiently to help restaurant owners automate their business operations. In proposed reservation system, we provide facility to the customers to reserve table or menu or both according to their convenience. On booking menu, the customer has to pay 50 percent amount in advance. The customer can cancel the booking if failed to arrive on time and hence book the table in the next possible time slot provided that the booking is cancelled before 30mins of the selected timeslot else the advance paid will not be refunded.

## **1.1 INTRODUCTION**

This application is a convenient self-service table & menu booking system. With this system the booking process can be customized, manage restaurant availability & reservations. The admin-portal is being managed by the owner to check the booking and make the availability for the customer. The services provided are menu & table booking managed by the customer through the system. Main objective is to provide ordering and reservation service to the customer. The built-in reservation management system allows admins to add, edit and delete reservations, manage client data and availability.

The major goal of this task is to enable the owner of a restaurant to deal directly with the clients. In addition, it can place client's requests to discover free tables as indicated by their own need of particular required number of seats in his choice area. This idea is discovered by keeping in mind the fact that people consider it a pain to go to the restaurant because of sheer amount of time required to find a desired one. Also, it's difficult to get a booking and equally time consuming to browse through the menu and order the dishes. Managers have to analyze

hundreds of paper receipts therefore; this application may help the managers in a digital way by keeping track of the bookings through the admin portal provided.

The customer has to become a member first then he can access the later part of the application for which first of all registration is a compulsion. The customer can check availability of seats at a particular timing and book a seat if available. The customer is also given with the facility to view the booking details and can cancel the booking if required.

## **1.2. EXISTING SYSTEM**

In manual system, everything depends upon waiter and diary also there is no automated system for keeping the records in the restaurant [1]. The menu which is accessible on the restaurant is paper based. The request taken by the waiter as well as the bill is paper based. Hence, we realized that this paper-based system is easily vulnerable to get harmed because of several reasons and it leads to different problem i.e., waiters couldn't have arranged records of clients.

Moreover, it results in wastage of time and paper and if there is a need of little changes in the menu then supervisor need to print the entire menu cards again. It is not conceivable to print the entire menu over and over because of little changes [2]. For each little request we need to call the waiter for a number of times and it may result in some misconception from waiter side. So, we found it a necessity to roll out some improvements in the current system to wipe out the above issues.

### **A. Disadvantages of Existing System**

→ It was totally paper based.

→ Wastage of time, cash and paper.

## **1.3. Literature review**

In the past few years, it is experienced that customers are desirous to find a handy application for reservation of tables and menu or any other services to avoid physical walking to the hotel or contacting by call or reserving through a middle man [1]. Therefore, it is aimed to develop an application for table reservation and online menu booking. The growth of mobile and wireless technology is making a large impact on our lives in the present condition as compared previously.

Nowadays people are looking for an application that satisfies their needs even more precisely. Even the restaurant industries are looking for any mobile application that enhances the dining experience as well as increases the profit which in turn is not only an advantage for restaurant industries but also for the customers to choose the restaurant of their desired choice and location. This application will save time, cash and paper by converting the manual reservation system to an automated system.

#### **1.4. PROPOSED SYSTEM**

In proposed system, we provide facility to the customers to reserve tables for dining and can book the menu in advance. At the same time this online table and menu booking system will help the restaurant owner to manage their services including food. This system will be managed by two main web and mobile applications, first one would be available for general customers for viewing and booking of table and menu and the second one would be used by the admin to update and manage the services within the restaurant. The admin-portal is being managed by the owner of the restaurant to check the bookings and make the availability for the customer. This system wakes to provide service facility to restaurant and also to the customer [3].

The services that are provided is menu booking and table reservation by the customer through the application. This project serves the best way of maintaining customer's information and cater their needs. It is a convenient self- service table

booking system. It can create a customized booking process, let people book a table through their web app, manage restaurant availability and reservations.

### **1.5. Objectives of the project.**

The main objective of the Project on Online Restaurant reservation management system is to manage the details of Food menu, Category, Customer, reservations, and Confirm reservation. It manages all the information about Food category, Payment, Confirm Order, Food Item. The purpose of the project is to build an application program to reduce the manual work for managing the Food Item, Category, Payment, and Customer. It tracks all the details about the Customer, Reservation, and Confirm Reservation.

## **Chapter 2. System Analysis and Design**

### **2.1 System Analysis.**

System design is the process or art of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements. System design contains Logical Design & Physical Design; logical designing describes the structure & characteristics or features, like output, input, files, database & procedures. The physical design, which follows the logical design, describes actual software and a working system.

### **A. Requirements Specifications**

#### **a. Functional Requirements of project.**

The main function of this application is online booking of tables of a restaurant.

- Table Booking: The user can book any table through this application any time and from anywhere.
- Menu Booking: Booking of menu along with the table is the customer's choice that means the customer can only book the table or table with menu.

➤ Contact Us: User can contact with hotel admin at any time using this application.

**b. Non-Functional Requirements:** A non-functional requirement defines the quality of a software system. A non-functional requirement is essential to ensure the usability and effectiveness of the entire system [4]. In order to assess the performance of a system the following must be clearly specified:

➤ Usability: It shows the ability of a software to perform tasks. The system is designed with effective and user-friendly UI.

➤ Reliability: It specifies how much the system is reliable for long time without any problem.

Performance: It is the systems response time towards any task.

➤ Supportability: It is the ability to install, configure and monitor the software.

➤ Scalability: It is about the capability of the system to run with same efficiency in 2secs for 100 users or 2secs for 200 users.

➤ Maintainability: It is about the quality of the code to be understandable by someone else instead of the application maker.

➤ Security: It is one of the most important steps in which we ensure the security of the system. The application is developed with security at each instance.

**B. Advantages of the Proposed System:**

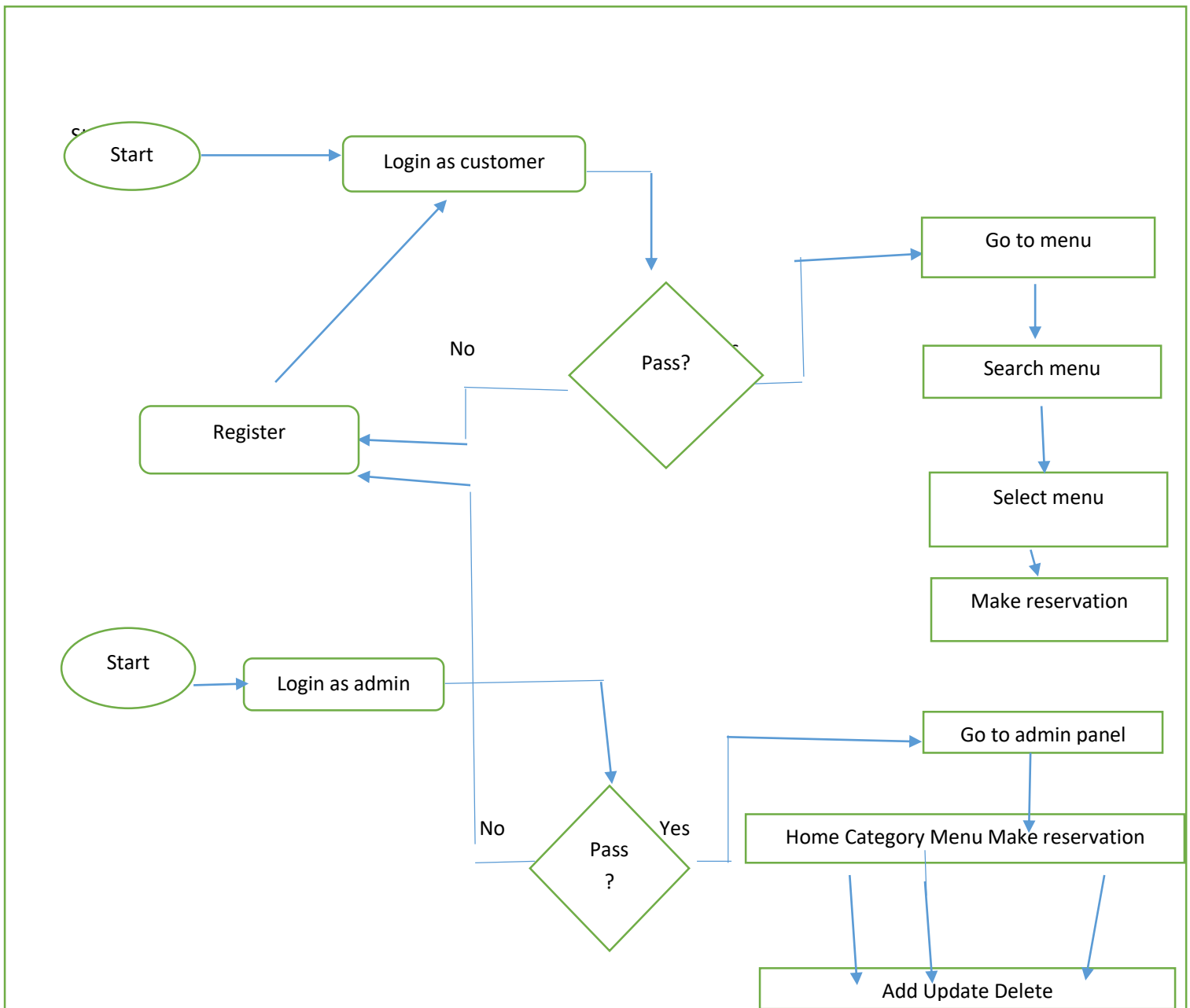
➤ Rights are reserved at customer's fingertips.

➤ During the festive seasons, tables get booked in a short span of time, in such cases clients can make advance booking for utilization of time.

➤ It saves client's time looking out for restaurants. Also, it saves business assets and costs.



- It discourages the involvement of a middle man by providing a direct interface of customers to their service providers.
- It avoids to customers to pay heavy commission.



**Figure 1**

The users (customers) must be provided the following functionality.

1. Signup/Registration: create account by providing personal information e.g. first name, last name, username, password, address etc.
2. Login: provide authentication to access the system
3. Provides the searching facilities based on various factors. Such as Food Item.
4. Navigate Restaurant Menu: client navigate the category menu to make choice
5. Select item from menu to order and make reservation
5. Provide Payment details
6. Make reservation and get response

**Admin:**

- Manage customer information and status
- . • Online Restaurant Reservation System also manage the Payment details online for Order details, Confirm reservation details, Menu Item
- . • It tracks all the information of Category.
- Manage the information of Category
- Shows the information and description of the Food Item, Customer
- To increase efficiency of managing the Food Item, Category
- It deals with monitoring the information and transactions of Order.
- Editing, adding, deleting and updating of Records is improved which results in proper resource management of Food Item data
- . • Manage the information of Order
- Integration of all records of reservation Order.

### **2.1.1 Intended users of the project**

- Customers
- Restaurant Owner (operator)

### **2.1.2 Intended system partners**

- UR
- MINICT
- MINICOFIN

## **2.2. System Design**

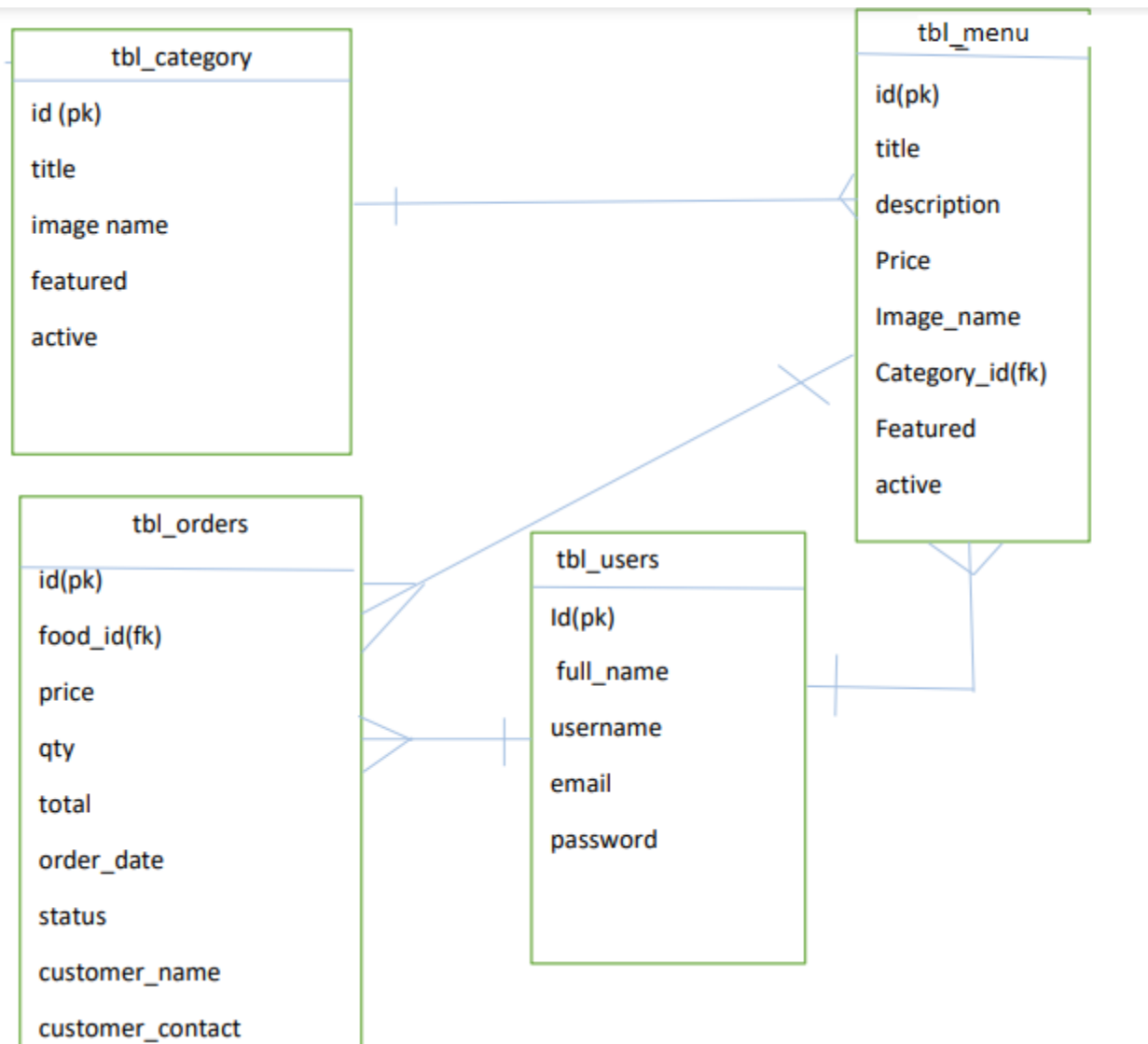
### **2.2.1 UI design (sketch of the UI module)**

User interface design is concerned with the dialogue between a user and the computer. It's concerned with everything from starting the system or logging into the system to the eventually presentation of desired inputs and outputs. The overall flow of the screen and messages is called a dialogue.



Figure 2

## .2.2 Database design with ERD and relationship



**Fig3**

## Chapter 3. Implementation

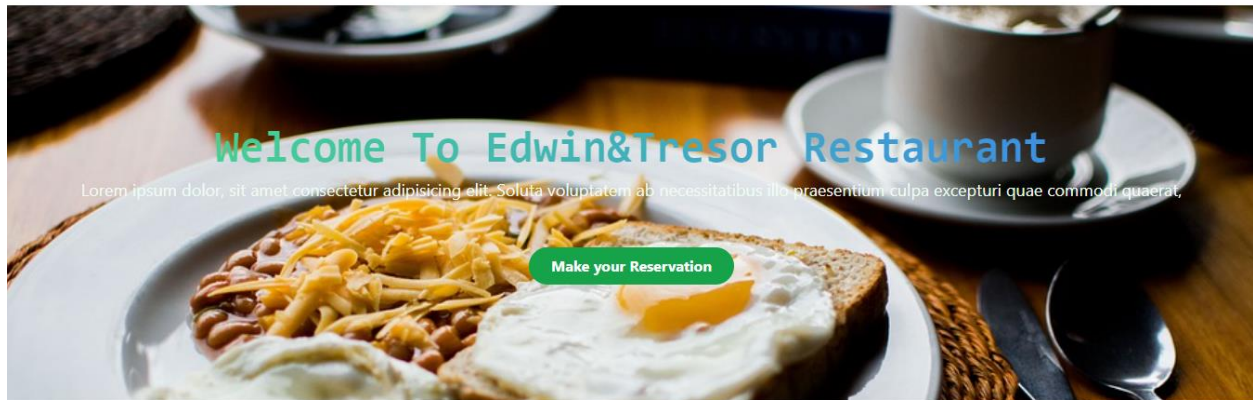
### 3.1. Introduction of the section

The aim of system implementation is to making the new system available to a prepared set of users (the deployment) and positioning on-going support and maintenance of the system within the performing company (the transition), at a

first level of detail, deploying the system involves of executing all steps important to educate the users on the use of the new system, placing the newly developed system into production, confirming that all data required at the start of operations is available and accurate and validating that the company business functions that interact with the system are functioning properly. 3.1. Introduction of the section The aim of system implementation is to making the new system available to a prepared set of users (the deployment) and positioning on-going support and maintenance of the system within the performing company (the transition), at a first level of detail, deploying the system involves of executing all steps important to educate the users on the use of the new system, placing the newly developed system into production, confirming that all data required at the start of operations is available and accurate and validating that the company business functions that interact with the system are functioning properly.

### **3.2 All screenshots with captions and discussion.**

When user visits this website for first time is presented with the following Home page



#### OUR STORY

### Welcome

Lorem ipsum dolor sit amet consectetur adipisicing elit. Temporibus nemo incidunt praesentium, ipsum culpa minus eveniet, id nesciunt excepturi sit voluptate repudiandae. Explicabo, incidunt quia. Repellendus mollitia quaerat est voluptas!

[Read More →](#)

#### Our Menu

### TODAY'S SPECIALITY



#### SOFT DRINK

jnjnjnj.

\$15.00



#### BURGER

fege fegegfegegfegegfi.

\$14.00



#### BEANS

ttytyuyuyuyuyutff.

\$3.00

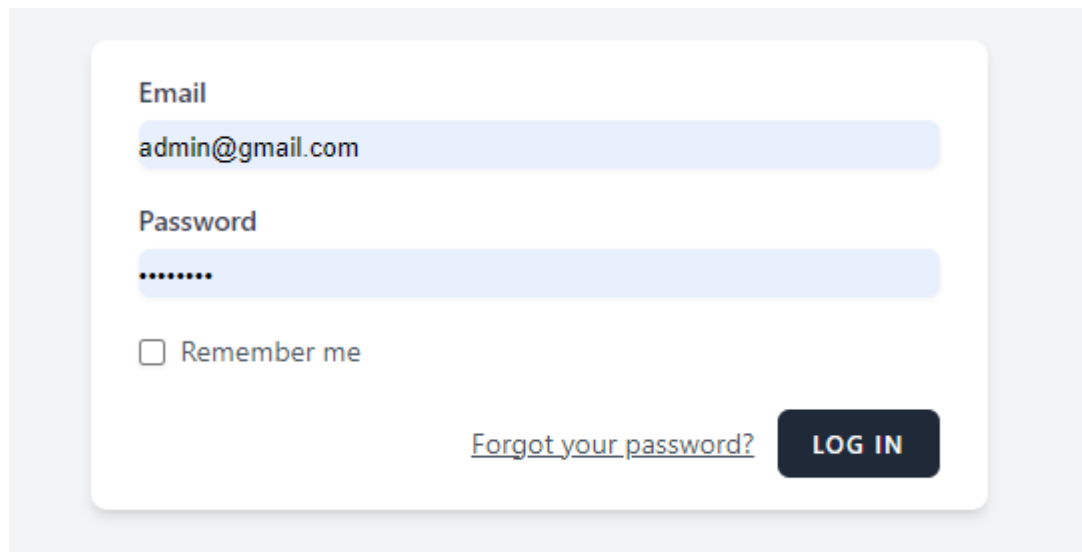


#### WERTYU

ertyuiop.

\$1.00

When user wants to login he/she click on the login button on home and fills the following login form

A login form with a white background and rounded corners, set against a light gray background. It contains two text input fields: 'Email' with the value 'admin@gmail.com' and 'Password' with masked characters '.....'. Below the password field is a checkbox labeled 'Remember me'. At the bottom right, there is a link '[Forgot your password?](#)' and a dark blue button labeled 'LOG IN' in white capital letters.

Email

admin@gmail.com

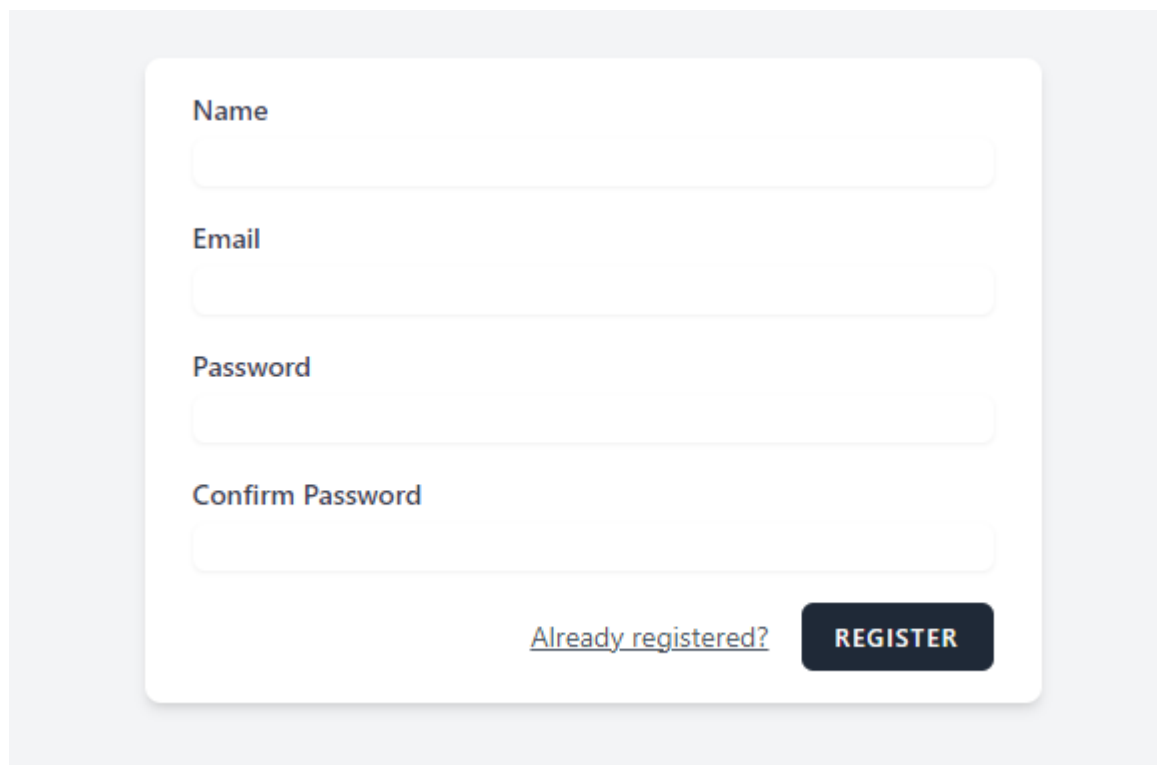
Password

.....

☐ Remember me

[Forgot your password?](#) **LOG IN**

Once user want also to register in the system he/she will fill the form and click on the register button.

A registration form with a white background and rounded corners, set against a light gray background. It contains four text input fields: 'Name', 'Email', 'Password', and 'Confirm Password'. At the bottom right, there is a link '[Already registered?](#)' and a dark blue button labeled 'REGISTER' in white capital letters.

Name

Email

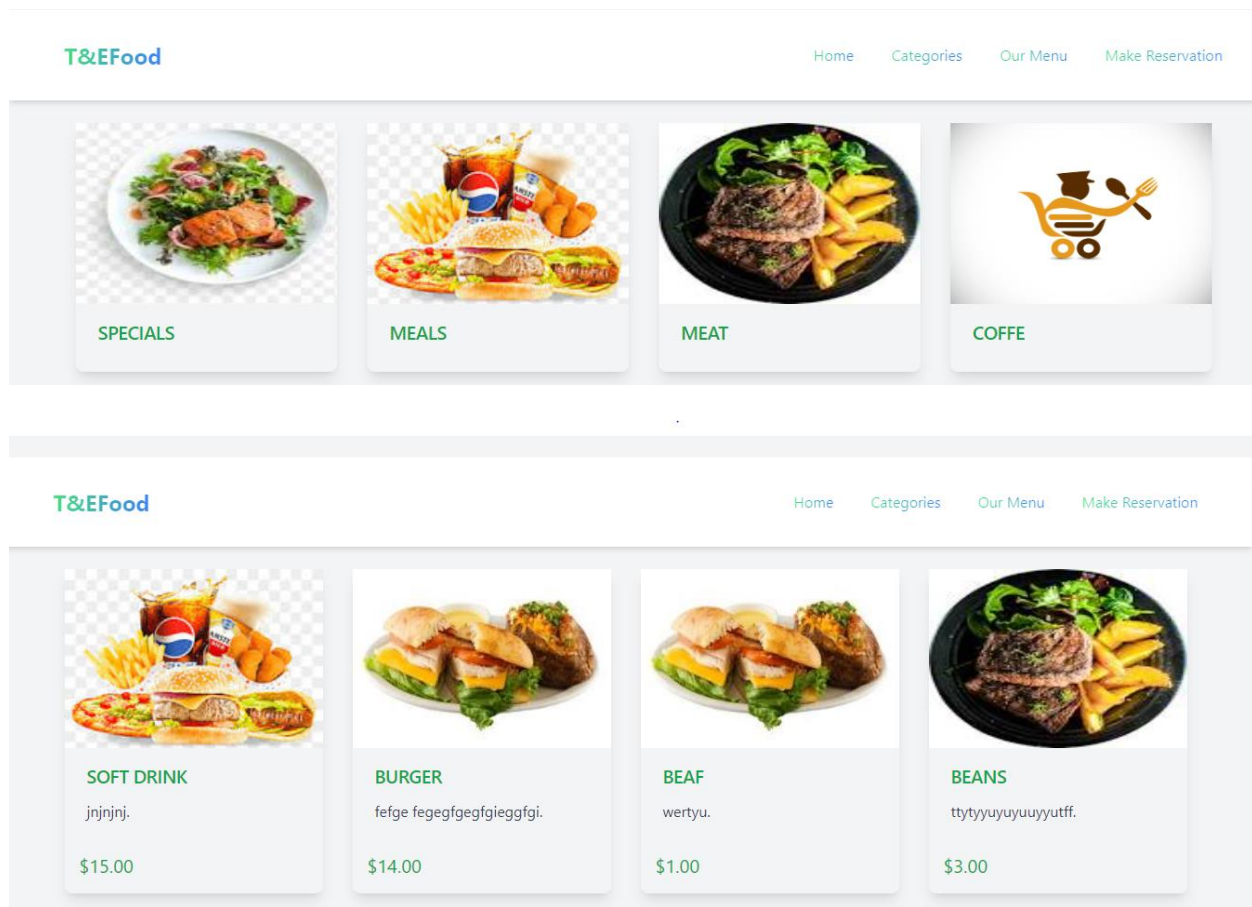
Password

Confirm Password

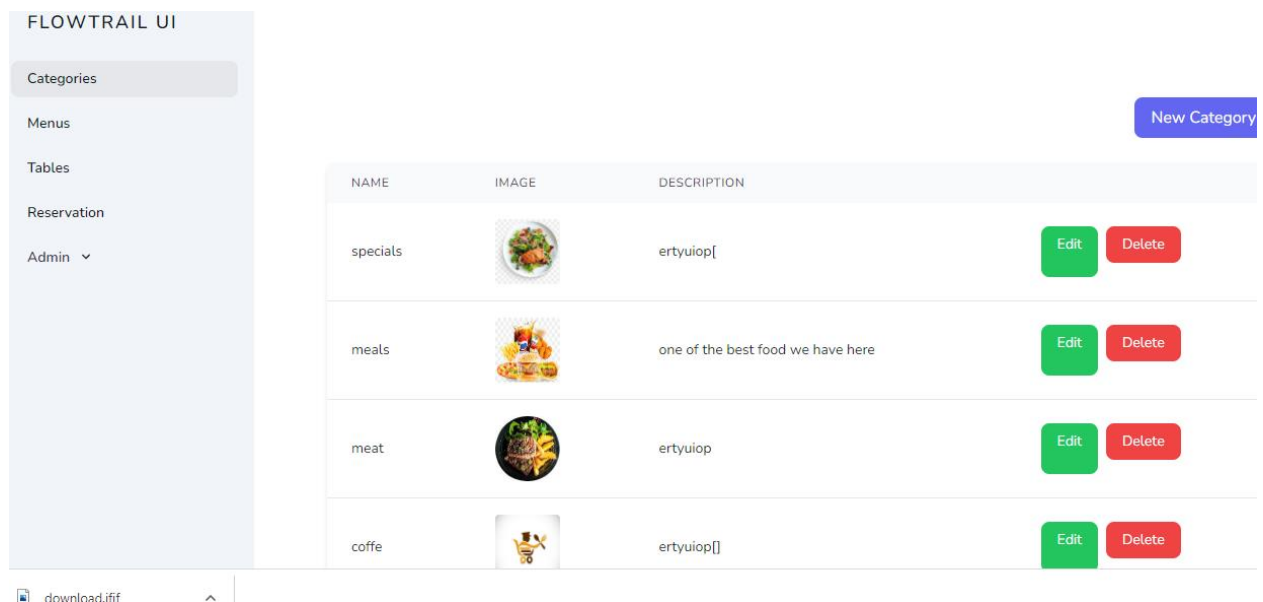
[Already registered?](#) **REGISTER**

**Categories**





The admin login panel, he enters username and password and enters into the system



**Admin is able to perform various CRUD operations on users and category, food menu and manage orders from the database by changing password, update Admin and delete admin.**

Categories





Menus

Tables

Reservation

Admin ▾

New Menu

NAME	IMAGE	PRICE		
soft drink		15.00	Edit	Delete
Burger		14.00	Edit	Delete
beaf		1.00	Edit	Delete
beans		3.00	Edit	Delete

Categories

Menus

Tables

Reservation

Admin ▾

New Table

NAME	GUEST	STAU	LOCATION		
rice	2	Pending	Outside	Edit	Delete
test	5	Available	Front	Edit	Delete
table4	4	Available	Outside	Edit	Delete

Categories

Menus

Tables

Reservation

Admin ▾

New Reservation

NAME	EMAIL	DATE	TABLE	GUESTS		
Tresor Mbonyimfura	mbonyimfuratresor@gmail.com	2022-11-11 21:50:00	test	4	Edit	Delete
Lavi Xerox	admin@gmail.com	2022-11-13 15:41:00	test	2	Edit	Delete
shooter xerox	nambajeedwin220003634@gmail.com	2022-11-16 20:52:00	test	5	Edit	Delete

Categories

Menus

Tables

Reservation

Admin ▾

Category Index

Name

Image

Choose File

No file chosen

Description

Store

Menus

Tables

Reservation

Admin ▾

Menu Index

Name

Image

Choose File

No file chosen

Price

Description

Categories

specials  
meals  
meat  
coffe

Categories

Menus

Tables

Reservation

Admin ▾

Table Index

Name

Guest Number

Status

Pending ▾

Location

Front ▾

Store

Categories

Menus

Tables

Reservation

Admin ▾

New Reservation

NAME	EMAIL	DATE	TABLE	GUESTS		
Tresor Mbonyimfura	mbonyimfuratresor@gmail.com	2022-11-11 21:50:00	test	4	Edit	Delete
Lavi Xerox	admin@gmail.com	2022-11-13 15:41:00	test	2	Edit	Delete
shooter xerox	nambajeedwin220003634@gmail.com	2022-11-16 20:52:00	test	5	Edit	Delete

Menus

Tables

Reservation

Admin ▾

Table Index

First Name

Tresor

Last Name

Mbonyimfura

Email

mbonyimfuratresor@gmail.com

Phone number

4567890

Reservation Date

11/11/2022 09:50 PM



Guest Number

4

Table

test (5 Guests)



## Reservation Index


First Name

Last Name

Email

Phone number

Reservation Date

Guest Number

Table

Table Index

Name

test

Guest Number

5

Status

Available



Location

Front




Store

Category Index

Name

specials

Image



Choose File

No file chosen

Description

ertyuiop[

Update

## Chapter 4. Conclusion and Recommendation

### 4.1 Conclusion:

The project has concluded that if a customer is willing to visit any restaurant and finds no table is available for the meal then the customer has to wait long for the table availability. With the help of this application the customer can choose the desired table according to the location.

E.g. Table can be reserved as according to number of members. Moreover, the customer can easily see pictures of interior from the Application. Keeping in view the demand of proposed project that gives a series of services and provides the customer to book a table and menu without waiting for a long time



through an android application. This application will get its importance as day by day people are getting into android and fast life.

Due to time constraints and limited resources I have managed to develop 75% of the system.

- . Below I have highlighted future work to be added to system. Payment options: Add different payment options such as PayPal, credit card, MTN mobile money, Airtel money...

- . Enhance User interface by adding more user interactive features e.g. provide Deals and Promotion offer to home page, provide the recipe of the week/day to homepage.

- . Cancel the reservation

- . Calculate total revenue and present the graph

#### **4.2 Recommendation:**

I recommend the lecturer to analyses the system to see if they are no other features I can add, or the other technology that can be used to make it more advanced. I have used the following technology html, Tailwind CSS, Laravel framework, Blade and **MySQL**

- . Takeaway food, particularly online services, is growing massively in Rwanda, especially in this Covid-19. Partnering with an online restaurant reservation service will mean more customers, and more revenue. It opens up a whole new base of people previously restricted by location or because they didn't know about your restaurant so it will be a good choice to use online food delivery system. User training will be provided with user procedure manuals, preparations of user training materials, conducting training programs and testing procedures. Customer/client are advised to use online food delivery to save their time, cost and should be aware of how to use the system what information there should provide. This system is going to make their life simpler by just using their mobile phones and other device that access internet.

## **Appendix.**

GitHub Link: <https://github.com/Mbonyimfura/restaurant-app>

## **Reference:**

1. <http://ww.laravel.com/>
2. <https://github.com/laravel/laravel>
3. <https://laracasts.com>
4. <https://www.phptutorial.net/>