(Online Bakery System)

Software Design Document

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Date: 27/09/2021

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1. INTRODUCTION

1.1 Purpose

This software design document is a description of software created to facilitate analysis, planning, implementation, and decision-making activities related to an Online Bakery System.

1)Flexible interface to provide customized orders.

2)Analysing and suggesting items based on rating or feedback.

3)Filter based on categories and varieties.

4)Auto Generating the detailed order report.

The expected audience are the people who wish to order food items(bakery items) which can be either new users or users who have already registered, the administrators who maintain and handle the information visible to the user in the system, the developers of the system.

1.2 Scope

The user will have access to his/her personal account created during their first order. They will be able to view the available items and their short description with price also which category they belong to.

The administrator will help maintain the system such that it contains content that is up-to-date. They will have full access to make changes, as he/she deems necessary. The changes could include, but not limited to, adding and removing items, altering availability and including new bakery item advertisements.

1.3 Overview

An overview of the remaining sections is listed below

Section 2 provides a general description of the functionality, context and design of our project. It also provides any background information associated with our project.

Section 3 we have the architectural design that specifies the design entities that collaborate to perform all the functions included in the system. Each of these entities has an abstract description concerning the services that it provides to the rest of the system. In turn, each design entity is expanded into a set of lower-level design operations that collaborate to perform its services. It also provides a decomposition of the subsystems in the architectural design. Information on the rationale for selecting the architecture described earlier including critical issues and trade-offs are considered.

Section 4 explains how the information domain of your system is transformed into data structures and how the major data or system entities are stored, processed and organized. A list of databases or data storage items are also included. An alphabetical list of the system entities or major data along with their types and descriptions are listed in this section.

Section 5 gives us a closer look at what each component does in a more systematic way.

Section 6 describes the functionality of the system from the user's perspective and explains how the user will use our system to complete all the expected features and the feedback information that will be displayed for the user. Description on screen objects and actions associated with those objects are mentioned.

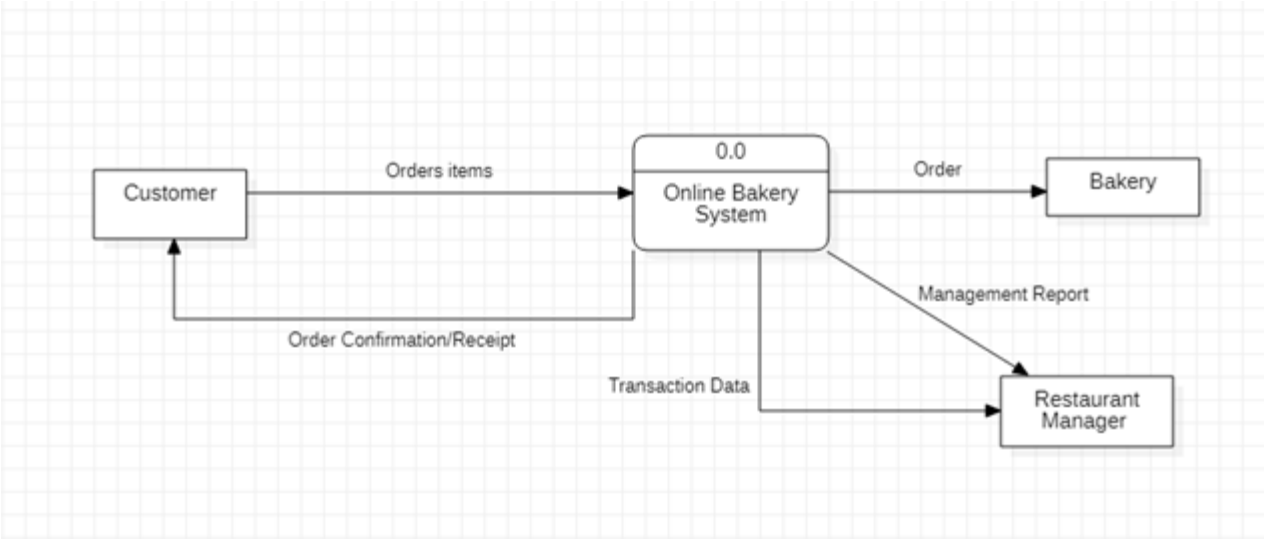
Section 7 provides a cross-reference that traces components and data structures to the requirements in our SRS document.

2. SYSTEM OVERVIEW

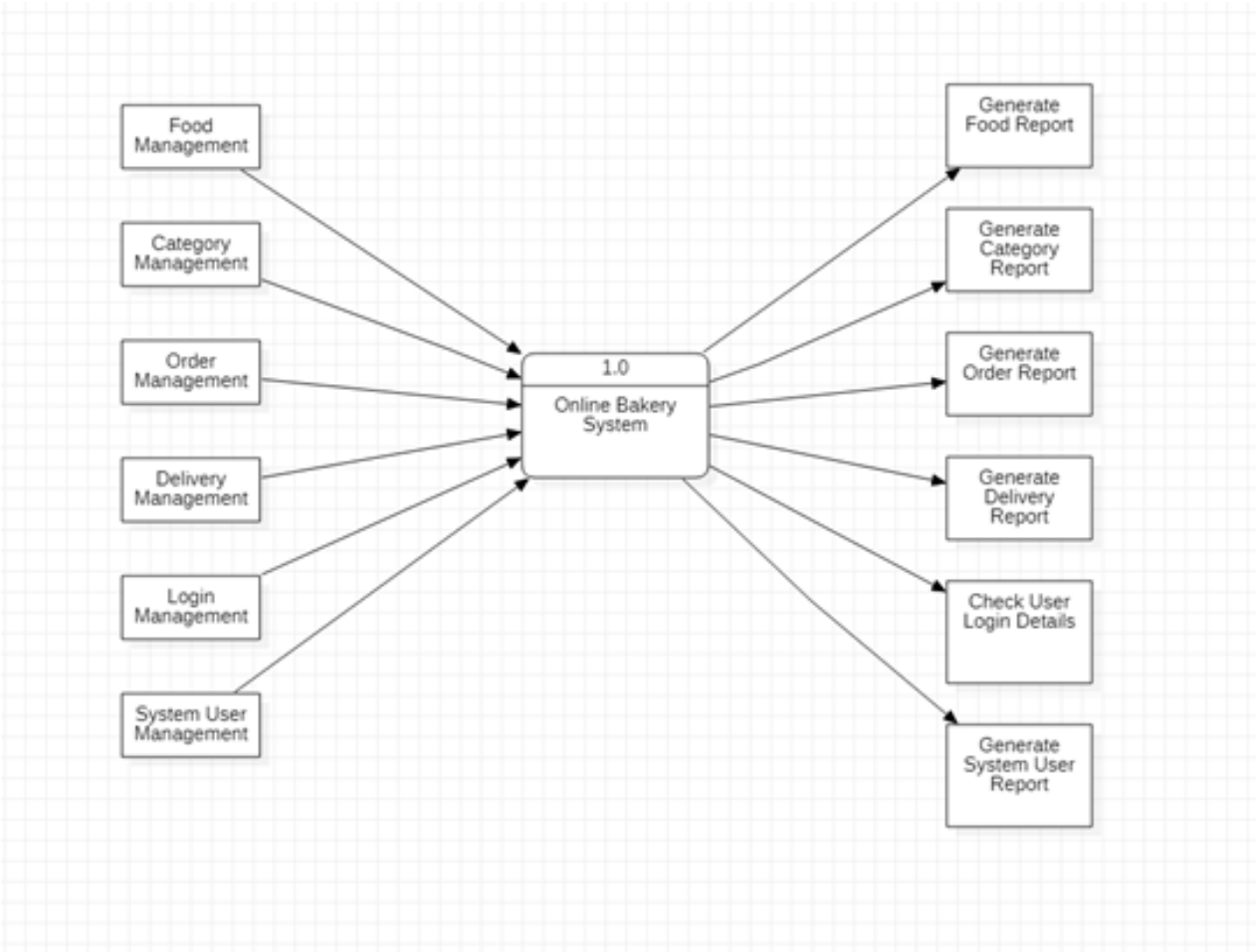
The Online Bakery System is a web-based software which allows users to order baked goods and get it delivered seamlessly. The system involves a Bakery and users registered to a centralized system which manages users, inventory and payment gateway. Users can provide highly customized orders with subject to availability, for which the Bakery receives it from the users and process it.

Data Flow Diagram:

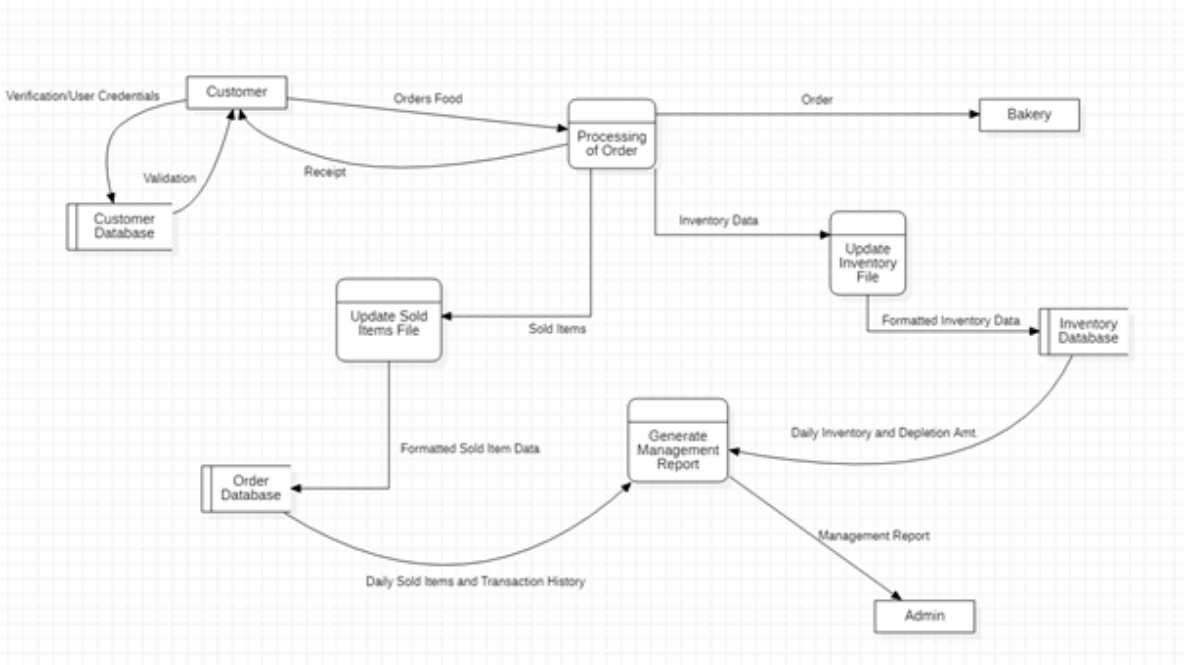
L0:



L1:


Food Management
Category Management
Order Management
Delivery Management
Login Management
System User Management
1.0
Online Bakery System
Generate Food Report
Generate Category Report
Generate Order Report
Generate Delivery Report
Check User Login Details
Generate System User Report

L2:



3. SYSTEM ARCHITECTURE

3.1 Architectural Design

Online Bakery System is divided into 3 modules:

- Login Module
- Customer Module
- Admin Module
- Logout Module

The modules are divided in such a way that each type of user has their usability to the application clearly defined. They work together to achieve the complete functionality of the system.

1)Login Module.

Login module can be accessed by both the customers and the administrator.

SUB Modules corresponding to Login are:

1. User Registration
2. User Login
3. Admin Login

Databases associated with Login Module are:

1. User Database
2. Admin Database

2)Customer Module

When the customer logs in to the online bakery system, he/she can filter bakery food items based on their preferences, select a bakery item, can add it to their wishlist, place order and can make online payment.

SUB Modules associated with Customer Module are:

1. Filter items
2. Select items
3. Add to wishlist
4. Place order
5. Make online Payment

Databases associated with Customer Module:

1. Order Database

3)Admin Module

When the admin logs in to the system, he/she can add an item, view the bakery items added and can also view the order details of the customers.

SUB Modules associated with Admin Module are:

1. Add an item
2. View the items

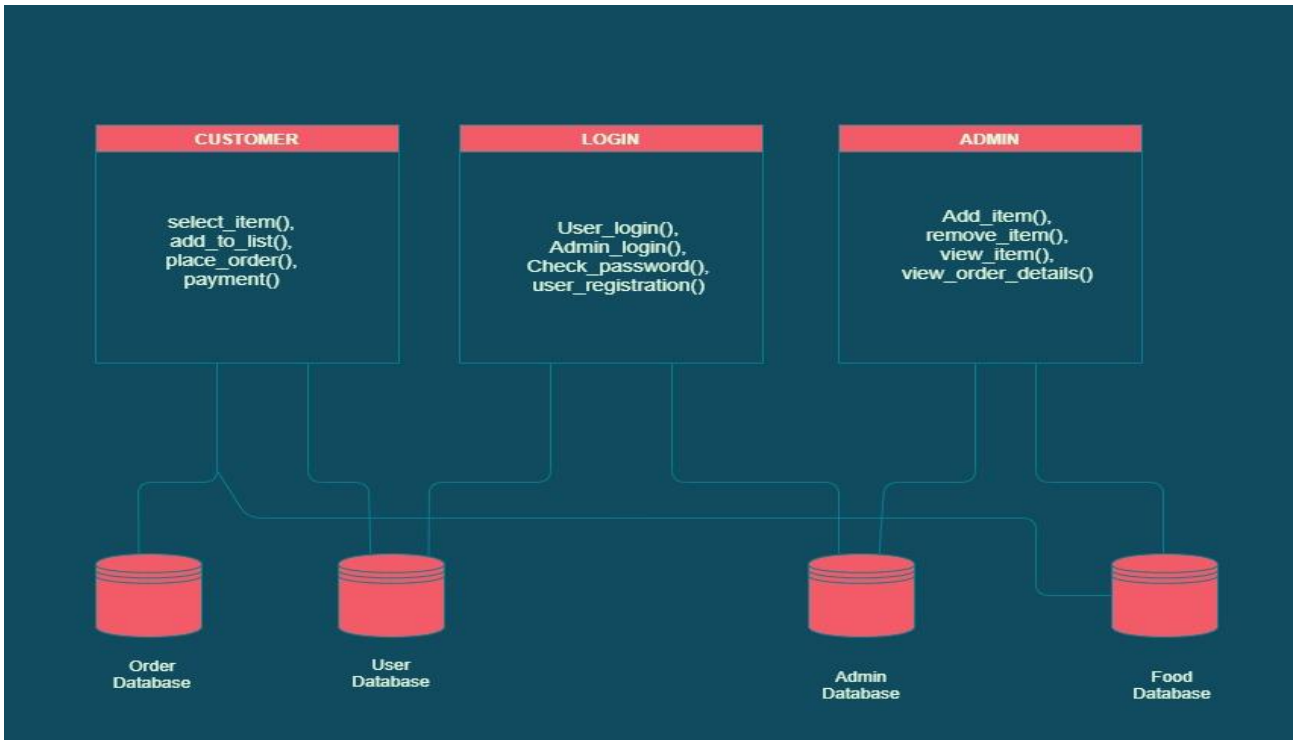
3. View user's order details

Databases associated with Admin Module:

1. Food Database

4)Logout Module

When the customer/Administrator finishes their work, they can log out of the system.



3.2 Decomposition Description

1) Login Module

(i) User registration:

The first step for a user is to register themselves as a customer to place orders and make payments for the same. To register as a customer, the user's Email ID, date of birth, gender, mobile number and password are asked. Once the user registers, all

these details of the user are updated in the customer database.

(ii) User login:

Every time the user wants to login first if he/she wants to view and order bakery items. Once the email and password entered by the user matches with the one in the customer database, it redirects them to the page where name,quantity and ratings of each food item's times are available for them to proceed ordering of foods.

(iii) Admin login:

Before an administrator performs any action on the website, he/she must login first. Once the email and password entered by the user matches with the one in the admin database, they can continue their website access

2) Customer Module:

Once the customer logs in to the website, they can filter the foods based on the options available,select food,add them to their wishlist,place order and make online payment. Each of these operations is performed by separate sub-modules.

(i) Filter items:

The customer can filter the food items based on their wish and the filter options available on the website,so that he/she can select foods at ease.

(ii)Select items:

The customer needs to select the food based on their wish to proceed further,

(iii)Add to wishlist:

The customer should add the food items to the wishlist/cart to proceed for the payment.

(iv)Place the order

Select the quantity of the food and give the details of your order like delivery address and mobile number.

(v)Make Online Payment

The customer makes the payment for the order using his/her credit/debit card or through net-banking. Successful payment will auto generate a confirmation mail.

The customer can also cancel payments.The customer can also give their valuable feedback.

3) Admin Module:

The various functions performed by admins are taken care of by their respective sub-modules –

(i)Add item:

The administrator can add a new food item to the website and provide details for the food and the rating. The food item gets added to the food database.

(ii)Viewing the items:

The administrator can view the list of food items as a whole.The administrator can delete a food item as well and permanently delete it from the database too.

(iii)View user's order details:

Once the administrator selects the order number, they can view the orders placed by the customers from the order database.

4)Logout Module

(i)Log out

Once the administrator or customer has finished what they are ought to do,they can log out from their accounts

3.3 Design Rationale

We use call and return architecture for the online Bakery system as it supports system modifiability, scalability and performance. Under this we are working with the

sub-style –

Main program or Subprogram architectures.

The main program structure decomposes into a number of subprograms or functions into a control hierarchy. Main program contains a number of subprograms that can invoke other components.

Some critical issues that we faced are –

1. Difficulty in parallel processing

2. Difficulty to distribute across traditional machines.

3. Exceptions to normal operation are awkward to handle.

Use Case Diagram:

Activity Diagram:

https://drive.google.com/file/d/1L82kjLSz4yUNgNBzu-5Qg103pgpJPUQT/view?usp=sharing

4. DATA DESIGN

4.1 Data Description

The data used in the online bakery system is stored in a database. The data are stored in the form of tables in relational databases and in the form of documents in non relational databases. The database of this application is stored in mongoDB.

4.2 Data Dictionary

Table name: User

-Contains the user's information

Column name	Data type	Description
user_id	int	primary key
email_id	varchar	stores user's email_id
password	varchar	used to verify the user
date_of_birth	date	stores user's date of birth
gender	varchar	stores user's gender
mobile_no	varchar	stores user's mobile no.

Table name: Admin

-Contains the admin's information

Column name	Data type	Description
admin_id	int	primary key
email_id	varchar	stores admin's email_id
password	varchar	used to verify the admin
date_of_birth	date	stores admin's date of birth
gender	varchar	stores admin's gender
mobile_no	varchar	stores admin's mobile no.

Table name: Bakery Items

- Contains the bakery items information

Column name	Data type	Description
item_id	int	primary key
item_name	varchar	stores bakery item name
description	varchar	a short description of the bakery item

Table name : Placing order

Column name	Data type	Description
order_id	int	primary key
item_id	int	stores the id of the bakery item
quantity	int	stores the number of ordered items
time	time	specifies the ordered time
date	date	specifies the ordered date
cost	number(4,2)	stores the cost of ordered items
address	varchar	stores the address of place where order has been placed

5. COMPONENT DESIGN

1) Login Module

(i) User login():

Get the Username

Get the Password

IF the entered Username is in the User_database THEN
Username TRUE
IF the entered Password is in the User_database for that Username THEN
Password TRUE
END IF
END IF
IF Username = TRUE AND Password = TRUE
DISPLAY(“You have logged in successfully”)
CALL apply_filter() method
ELSE
DISPLAY(“TRY AGAIN”)
CALL User_login() method
END IF

(ii) Admin login():

Get the Username
Get the Password
IF the entered Username is in the Admin_database THEN
Username TRUE
IF the entered Password is in the Admin_database for that Username THEN
PasswordTRUE
END IF
END IF
IF Username = TRUE AND Password = TRUE
DISPLAY(“You have logged in successfully”)
ELSE
DISPLAY(“TRY AGAIN”)
CALL admin_login() method
END IF

(iii) User registration():

Get the name

Get the user's mobile number
Get the user's Email id
Get the user's address
Get the new Pincode
If(valid)
    IF the entered Email id already exists in the User_database THEN
        DISPLAY("Email id already exists")
        CALL User_registration()
    ELSE
        Create a new account
        Save the new record to the User_database
    END IF
END IF

2. Customer Module:

(i)apply_filter():

IF the user_login is successful THEN
    Get the filter
    IF the filter is chosen THEN
        CALL choose_cake()
    ELSE
        DISPLAY("Choose the filter")
    END IF
END IF

(ii)Choose_Cake():

Get the cake type and cake flavor
Get the Occasion
Get the delivery date and time
IF the details are valid THEN
    CALL payment( )

```
ELSE
    DISPLAY(“ Choose the valid details”)
END IF
```

(iii)Payment():

```
Get bank name
Get card holder name and card number
Get expiry date and CVV
IF the payment details are valid THEN
   CALL Get_OTP()
ELSE
   DISPLAY(“ Choose the valid details”)
END IF
```

(iv)Get_OTP():

```
Get the OTP
If the OTP is valid THEN
    DISPLAY(“Payment successful, Order placed Successfully ”)
ELSE
    DISPLAY(“TRY AGAIN”)
    CALL Payment( )
END IF
```

3) Admin Module:

(i)Add_CakeType():

```
Get the Cake type
IF cake type is already exists THEN
     DISPLAY(“Cake type already exists”)
     CALL Add_CakeType()
ELSE
        DISPLAY(“Cake type added successfully”)
```

END IF

(ii) Add_CakeFlavor():

Get the Cake flavor
IF cake flavor is already exists THEN
    DISPLAY("Cake flavor already exists")
    CALL Add_CakeFlavor()
ELSE
    DISPLAY("Cake flavor added successfully")
END IF

(iii) Delete_CakeType():

Get the Cake type
IF cake type is found THEN
    Delete the cake type from the database
    DISPLAY("Cake type is deleted")
ELSE
    DISPLAY("Cake type not found")
    CALL Delete_CakeType()
END IF

(iv) Delete_CakeFlavor():

Get the Cake flavor
IF cake flavor is found THEN
    Delete the cake flavor from the database
    DISPLAY("Cake flavor is deleted")
ELSE
    DISPLAY("Cake flavor not found")
    CALL Delete_CakeFlavor()
END IF

(v) Update_CakeType():

Get the Cake type
IF cake type is found THEN
    Update the details
    Save the updated record to the database
    DISPLAY("Cake type updated successfully")
ELSE
    DISPLAY("Cake type not found")
    Ask whether to add it as new cake type
    IF yes THEN
      CALL Add_CakeType()
    ELSE
       CALL Update_CakeType()
    END IF
END IF

(vi)Update_CakeFlavor():

Get the Cake flavor
IF cake flavor is found THEN
    Update the details
    Save the updated record to the database
    DISPLAY("Cake flavor updated successfully")
ELSE
    DISPLAY("Cake flavor not found")
    Ask whether to add it as new cake flavor
    IF yes THEN
      CALL Add_CakeFlavor()
    ELSE
       CALL Update_CakeFlavor()
    END IF
END IF

(vii)Add_Occasion():

Get the Occasion

IF Occasion is already exists THEN

DISPLAY(“Occasion already exists”)

CALL Add_Occasion()

ELSE

DISPLAY(“Occasion added successfully”)

END IF

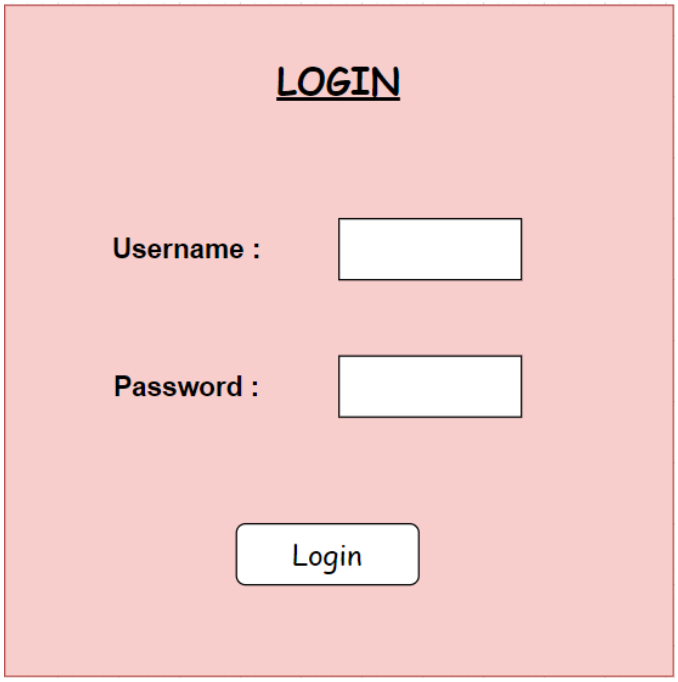
6. HUMAN INTERFACE DESIGN

6.1 Overview of User Interface

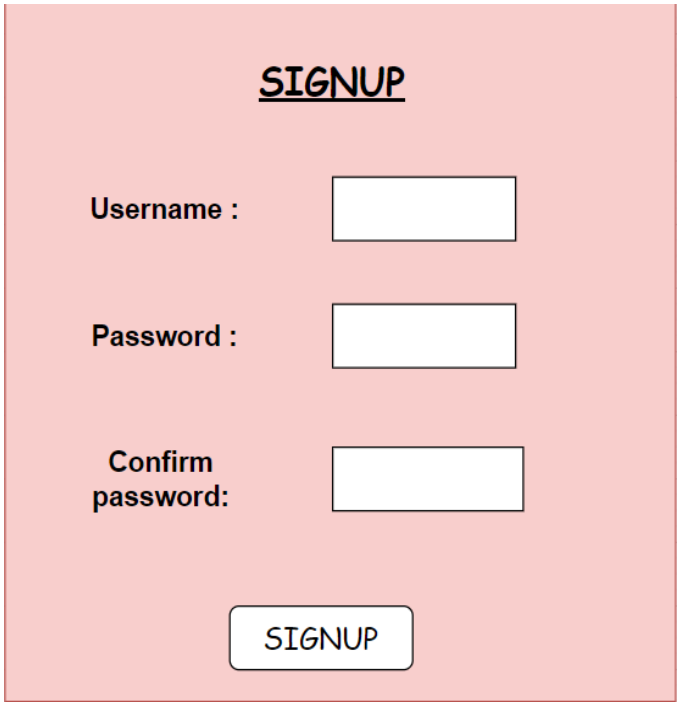
This application is to book bakery items in Online mode, it saves staff time.At first the user has to sign-up with all the required information that is asked in the sign-up page and create their own account. And login using mobile number or mail-id as username and enter the password. To place the order, select cake type, flavor, delivery date etc..and give buy now to proceed with the payment. After the payment the users orders will be placed.

6.2 Screen Images

USER LOGIN


LOGIN
Username :
Password :
Login

SIGNUP


SIGNUP
Username :
Password :
Confirm password:
SIGNUP

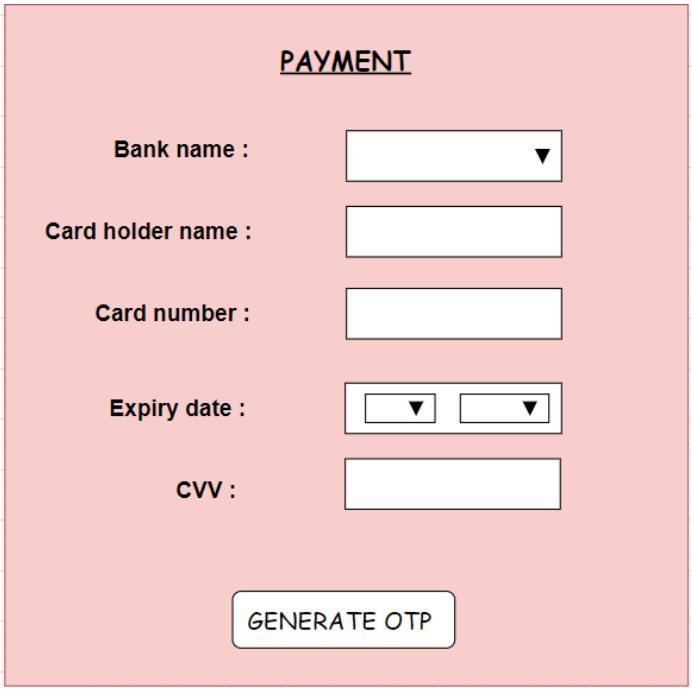
CREATE ACCOUNT

FILTER

CHOOSE CAKE

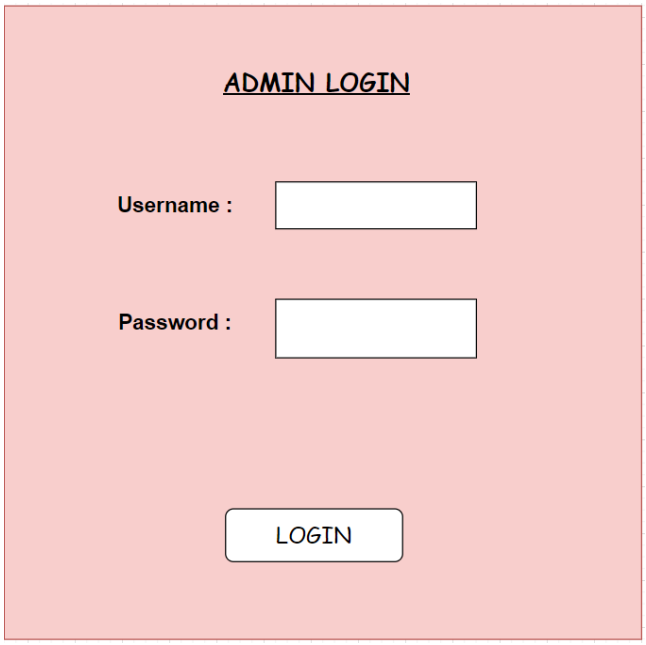

CHOOSE CAKE
Cake type :
Cake flavor :
Occasion :
Delivery Date :
Choose your time:
ADD TO CART
BUY NOW

PROCEED TO PAY

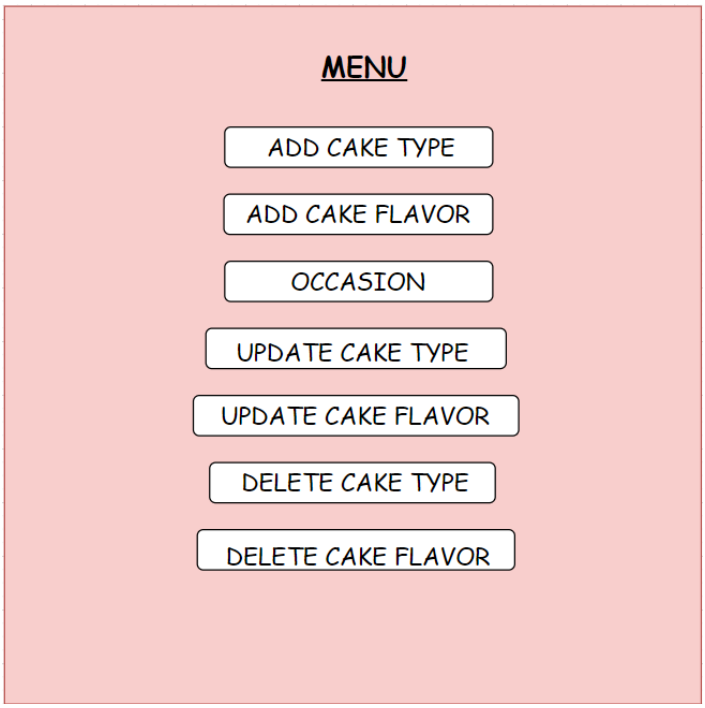


GENERATE OTP

ADMIN
ADMIN LOGIN



MENU



6.3 Screen Objects and Actions

A discussion of screen objects and actions associated with those objects.

6.3.1. SIGNUP Screen:

Username - Username can be users mobile number or mail-id
Password- Password should be at least 8 characters(it should be a combination of uppercase letter, lowercase letter, numbers and special characters). It should be unique for every user.
Confirm Password - Give the same password again to confirm it.
SIGNUP- If the user enters the username and unique password, it will take the user to the create account screen.

6.3.2. CREATE ACCOUNT Screen:

Name - Users should give their name.
Mobile number - Users valid mobile number should be entered, it will help to contact the user when the order is ready to dispatch.
E-mail- Users valid mail-id should be given.
Address - Users valid address should be given so that the order can be dispatched correctly.
Pincode - Users valid pin code should be given.
CREATE ACCOUNT - If the user enters the valid details it will take the user to the login screen.

6.3.3. LOGIN Screen

Username - Enter username as email or mobile number which is used to sign up.
Password - Enter the unique password.
LOGIN - If the username and password are valid it will take the user to the choose cake screen.

6.3.4. CHOOSE CAKE Screen:

Cake type - Users should choose the type of the cake(like biscuit cake, butter cake, sponge cake etc..)
Cake flavor - Users should choose their flavor like chocolate, vennila, cheesecake etc..
Occasion- Users should choose their special occasion(birthdays, weddings etc..)
Delivery Date- User should choose the delivery date.
Choose your time - User should choose the time to deliver the cake.
ADD TO CART - The details will be added to carT and users can place the order later.
BUY NOW - It will take the user to the payment screen.

6.3.5. PAYMENT Screen:

Bank name - Users should give the bank name where they have their savings.
Card holder name - User should give the cardholder name which is their account name.
Card number - Users should enter the card number(16 digit number)on the front of your debit card.
Expiry date - Users should enter the expiry date on the front of your debit card.
CVV - Users should enter the CVV(3 digit number) on the back side of your debit card.
GENERATE OTP - It will send the 6 digit number to users mobile number and directs to the OTP screen.

6.3.6. OTP Screen:

Enter the OTP which is sent to your mobile number.
Proceed to Pay - If the OTP is valid, it will take users to the login screen.

6.3.7.ADMIN LOGIN Screen:

Username - Admin has to enter username
Password - Enter the password.
LOGIN - If the username and password are valid it will take admin to the menu screen.

6.3.8.MENU Screen:

ADD CAKE TYPE- Admin can add what cake type they have.
ADD CAKE FLAVOR - Admin can list what all the cake flavors are.

OCCASION - Admin can list the occasions.
UPDATE CAKE TYPE - Admin can update the list of cake types.
UPDATE CAKE FLAVOR - Admin can update the list of cake flavors.
DELETE CAKE TYPE - Admin can delete the list of cake types.
DELETE CAKE FLAVORS - Admin can delete the list of cake flavors.

7. REQUIREMENTS MATRIX

S.No	Function Name	Design Reference	Applicable Roles	Description
1	User_Registration()	4.1	Customer	Allows to register and create an account for a new user.
2	User_Login()	4.2	Customer	Allows to Login
3	Add_item()	4.3.3 REQ 1	Admin	Adds a new item to the list
4	Delete_item()	4.3.3 REQ 2	Admin	Removes an item from the list.
5	View_user_orders()	4.3.3 REQ 3	Admin	Shows all the customer's order details.
6	Place_Order()	4.4	Customer	Order the items.

7	Filter_the_items()	4.4.3 REQ 2	Customer	Filter function so that the customer can view items category-wise and select items.
8	Add_to_wishlist()	4.4.3 REQ 3	Customer	Selected items can be added them to their wishlist
9	Customize_orders()	4.4.3 REQ 4	Customer	customize the items based on their preferences. They can modify the item design according to their needs
10	Payment()	4.5	Customer	Make payment and confirms the order
11	Give_feedback()	4.6	Customer	Allows customers to give their feedback about a particular product.
12	Logout()	4.7	Admin,Customer	Allows customers to log out of his/her account.