

ONLINE BAKERY SHOP

MINOR PROJECT REPORT

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THE AWARD OF THE DEGREE OF

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Submitted By:

Bhavya Garg (1805502)

Manmeet Kaur (1805525)

Priyanshi Singla(1805541)

Submitted To:

Prof. Ranjodh Kaur

Assistant Professor

Major Project Coordinator

Department of Information Technology

Guru Nanak Dev Engineering College,

Ludhiana- 141006

Abstract

My website is made for ordering from our cakehouse through online mode. The website has an All-product's page to display the available products for retail which by now were handled via virtual database with pen & paper. Now, looking forward to the computerized database which will keep track of the customers who are interested in purchasing any kind of Bakery products from the catalogue. This website will ask for a login for validating any purchase from the website. The login credentials will be stored in the database as a record.

ACKNOWLEDGEMENT

A small web-site as this one has required help from many quarters. I realized this when I ventured into the area of web development. From the beginning everyone co-operated, supported us for which I express my sincere acknowledgement.

Training is the first step in the practical field from where one learns how to apply theory principles for this the practical purposes. To develop a successful website, one needs understanding and co-ordination from all those who are directly and indirectly involved in this.

I, a student of Guru Nanak Dev Engineering College, find myself to be privileged to have golden opportunity to develop website under the guidance of Prof. Kiran Jyoti. I am thankful to her.

A person can be successful only when the team and organization for which they are working have unlimited goal of his perseverance. I hereby, like to show my deep gratitude towards my instructor and project in charge all faculty of college helped me very much.

I am obliged to them for successful completion of my Project.

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1 Introduction

1.1 Introduction to Project Page

Have a bakery? Usually have too many customers to entertain single-handedly? Want a modern day technology for assistance in your bakery business? How about having a website of your own? it would be so good to manage customers online as well as having a much broader reach for your bakery. Not only it would provide better customer management, but also expand your business.

The main motto of computerized bakery system is to make the workflow flexible and to improve the services provided to the customers. The bakery shop is part of a large food service chain that provides desired food items to the customers. The manager of this bakery shop is concerned about delivering on time for customer satisfaction. The first and foremost module is receiving order by the customer.

For every new customer a unique id is given. All the details of the customers along with their unique id are maintained in a database .so the customer need not specify all his address details each time he places an order. All details of the customer and his order is received and saved. Price varies according to the orders placed by the customer.

The implementation of this system has completely changed the existing norm of people moving into bakeries to get their orders because of their busy routines. So this system is more comfortable in the present busy life. and also the timeliness and punctuality keeps the customers satisfied.

1.2 Project Category (Internet based, Application or System Development, Research based, Industry Automation, Network or System Administration)

This is a web based project, more discreetly classified as a website development project. It focuses on the development of a website for a bakery.

With almost each and every thing being available on the Internet, it has become even more essential for small businesses to be able to render their products online, which helps them in many ways. These days time saving has become a main objective for people. So considering the view of a very reputed bakery in the town which has products to offer but has space constraints. Customers can place orders either by walking in or by phone. But the latter option is still available to only those clients who have the bakery's contact with them.

In such a situation, a website that accepts orders for the bakery seems to be the perfect solution. This does not only ease the way order placing for clients but also increases the bakery's reach as well as customer handling easier.

1.3 Objectives

- AUTOMATING BAKERY ORDERING : This project helps in automating the process of ordering items from a bakery, thus assisting both customers and managers.
- CART TO SAVE ORDERS : It provides a cart functionality for customers to save all their wanted orders, which can be viewed at any time.
- ADDING AND REMOVING ORDERS : The customers can add products of their choice which they want to buy to the cart and also remove them, if they wish to.
- TOTAL AMOUNT OF ORDERS : As soon as the customers add products to the cart, it simultaneously shows the total amount for the order, which increases or decreases relatively as the items are added or removed from the cart.
- SAVING CUSTOMER DATA : It helps in saving customer information such as mobile number etc. so that the user does have to enter it each time they want to place an order.

1.4 Problem Formulation

To start with, an ordering system makes placing orders super convenient and time-saving for your customers.

Put yourself in their shoes: would you like calling or emailing a supplier in the midst of a busy lunch service just to try to get your orders in before the cut-off? Or would you rather order in a few taps on your mobile phone while you're on the go? That's what an ordering system can do. It allows your customers to place their orders online - at any time of the day, even outside your bakery hours.

Online ordering is essential in any business these days. Based on a past study by Nielsen, customers now expect retail businesses to be available 24/7 in multiple formats. These businesses need to tap into the so-called "omnichannel" that expands from in-store to online to keep their customers engaged. Several bakeries worldwide also believe in the importance of being able to accept orders online.

While these are retail studies rather than wholesale, the important thing to remember is that it is the same people ordering from you, even if it is in a business capacity. The same people that are now used to buying most things in their lives online - from dialling up an Uber, to grocery delivery to clothing and appliances.

1.5 Identification/Reorganization of Need

Small businesses around the world are going through some truly tough times. In light of the current pandemic, many will increasingly rely on online solutions to make sales.

As mentioned in the previous chapter, all the products ordering are also being done manually whereas customers have to call or walk in to the cake house and do the ordering. This will waste the customer's time

if they have to walk in to the cake house and only the customers with the cake house phone number are able to make phone call for cakes delivery. These problems is minimize the sales performance and the business opportunities because only regular customers and customers near location will come to the cake house, but with this website all those problems can be solved. Bakeries can advertise their product into the internet so that the information will widely spread to the community and also customer can just click at the pictures and fill up a form, the ordering is done. People will prefer things that can make them feel easy to get and also save their precious time. Therefore this system can really help not only to the customer's side but also to the management itself.

1.6 Existing System

Basically it can be defined that the CREATIVE CONFECTIONS has the similarity with the other bakery houses' web based application system that also use the online products ordering and managing the sales information by using the capabilities of a system, which means all the processes have been computerized. This can be very helpful for a big bakery house to manage their daily operation as well. Big bakery houses may have many customers, employees and products to be managed; therefore with the help of such system it will minimize the man power in order to run the business. Furthermore all the activities and transaction can be run smoothly without an error.

1.7 Proposed System

On the other hand, CREATIVE CONFECTIONS is a small system compared to existing system in the market nowadays. It just applies a part of function or activities that are always available in common online ordering applications. This is because it is just a simple online ordering application without having any money or credit card transaction. It only takes the customer's order and confirmation will be done via the customer's email and phone number. Regarding to the terms of payment it still being done manually whereby the customers have to come to the cake house and pay for the purchasing or make the payment, and then get the delivery from the cake house.

2 Requirement Analysis and System Specification

2.1 Feasibility Study (Technical, Economical, Operational)

The project is executed within a one semester frame. The time frame allocated for this project is limited but adequate through proper time management and planning. The aim of this project is to design a website for a bakery that wishes to receive customer's orders online for better management and service. The project can be accomplished with minimum software technologies, making it feasible from an economic, technical, and operational standpoint.

- **ECONOMIC FEASIBILITY** - This project uses minimum software and does not have any special software or hardware needs for its usage.
- **TECHNICAL FEASIBILITY** - It makes use of some of the latest front-end and back-end technologies for its development and is capable of being adjustable to different screen sizes.
- **OPERATIONAL FEASIBILITY** - An online ordering platform eliminates the data entry as customers are placing orders themselves, selecting from a menu of product options. Since all orders go straight to the system, you no longer have to manually enter any data into an excel sheet. When you reduce your manual data entry, you also reduce your ordering and delivery errors.

2.2 Software Requirement Specification Document which must include the following: (Data Requirement, Functional Requirement, Performance Requirement, Dependability Requirement, Maintainability requirement, Security Requirement, Look and feel requirement)

- **Data Requirement** - The website requires product data to be displayed on the site, which it takes from Firebase (used for back-end services). It also requires to store and retrieve user data for authentication.
- **Functional Requirement** - The functionalities that a developer must incorporate into software to accomplish use cases are referred to as functional requirements. If a customer wants to buy the product then he/she must be registered, unregistered user can't go to the shopping cart. Customer logs in to the system by entering valid email and password for the shopping. Changes to cart means the customer after login or registration can make order or cancel order of the product from the shopping cart.
- **Performance Requirement** - The site should not take too much time to load. Usually the response time should be 2 seconds or lesser. The site should be easy to use. There should be no unnecessary steps

included. The ease of use of site must be focused upon. Maintenance Requirement - The site needs to be maintained at constant intervals of time to reflect the changes in products, prices and various services.

- Security Requirement - Because the application is meant to run on a network like the internet, there are security concerns connected with utilising it. There must be secure access to user's confidential data as well the business information contained on the site.
- Look and Feel Requirement - Such type of applications require very attractive user interfaces to appeal to the customers. Same has been tried to be incorporated in the development of the site.

2.3 Validation

The validation is performed through dummy users. Firstly, registration is done and it is made sure that the user details are being stored in the database. Then the login module is checked. That whether the users are able to login successfully. Next, the cart functionality is checked for addition and removal of products and the sum of the total amount. And importantly, all the different user viewable parts of the sites are tested for proper view and intact links.

2.4 Expected hurdles

EXTERNAL HURDLES

- Frauds - When a visitor goes to the website and signs up, you need to somehow be sure that this is a legit person who wants to buy. But on the internet you can never be 100 percent sure of the user's identity – which could result in revenue losses when it comes to Cash-On-Delivery (COD) purchases (when an invalid or fake phone number or address has been used, for example).
- Multichannel Customer Service - In today's interconnected world, customers can reach out to a business through any number of touchpoints. They may visit your website, contact your support agents, leave a message on your social media page, shop from your store or use a live chat or a messaging platform. This may increase the reach of the business, but it leads to management conflicts.
- Building trust with the user - Every website should give users a sense of security. This is especially true for e-commerce websites, which typically ask users to provide their home address and credit card information in order to complete their purchase.

INTERNAL HURDLES

- Software - Our project's development will be restricted to Angular framework and Firebase.

2.5 SDLC Model to be used

My project has been developed in accordance with the Incremental Model. During the start of the project, the requirements were divided into various groups based on their functionality. For each group, the SDLC model is followed to develop software. The SDLC process is repeated, with each release adding more functionality until all requirements are met. In this method, each cycle act as the maintenance phase for the previous software release. Modification to the incremental model allows development cycles to overlap. After that subsequent cycle may begin before the previous cycle is complete.

3 System Design

3.1 Design Approach (Function oriented or Object oriented)

My project has an object-oriented system design. In object-oriented programming, or OOP for short, the data throughout the app takes the form of objects. So instead of thinking of single pieces of data on their own — “This is the name of a course.” — we think of objects as self-contained entities — “This is a course object, which has a name and a description.” My application has objects like user in which the user can register or login himself, and also we have the products section in which products list is displayed and items can be pushed to the cart.

3.2 Detail Design

My project includes various modules and components:

- The user module
- Login component
- Register component
- Products-List component
- Home component
- Testimonials component

**3.3 System Design using various structured analysis and design tools such as:
DFD's, Data Dictionary, Structured charts, Flowcharts or UML**

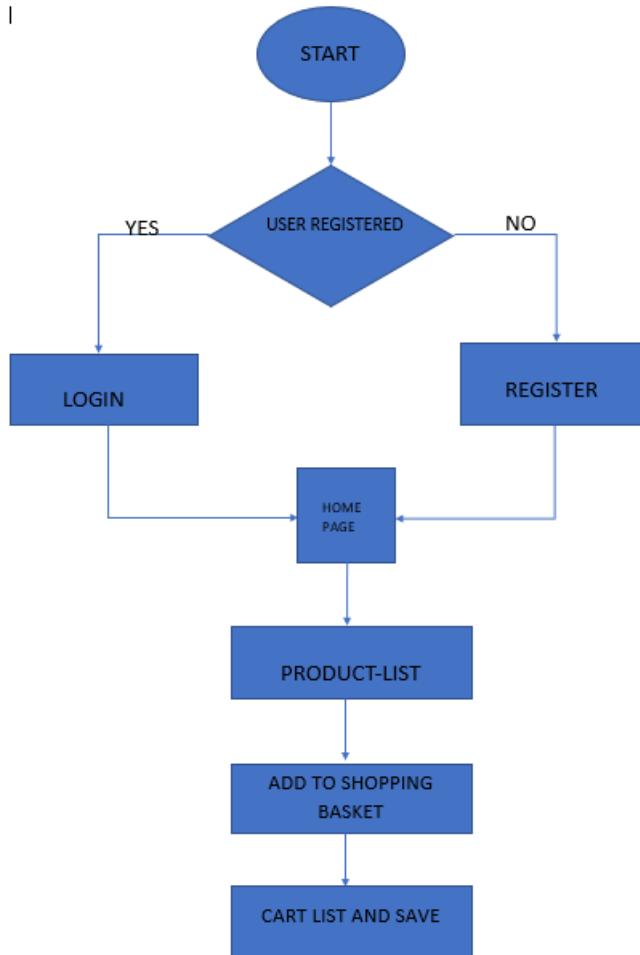


Figure 1: Flowchart

3.4 User Interface Design

- Home page:It contains brief information about our bakery shop.
- User module:It contains the login and register component in which the user can login or register to the website.
- Product-list component:It contains the list of products available and the add to basket functionality.
- Testimonials:On this page,we can view the clients' reviews.

3.5 Database Design

Build powerful apps. Spin up your backend without managing servers. Effortlessly scale to support millions of users with Firebase databases, machine learning infrastructure, hosting and storage solutions, and Cloud Functions.

3.6 Methodology

The simulation first starts with the customer entering his/her credentials (name, ID and password). Once that has been verified from the database, the customer is redirected to home page. Then, he/she can place an order by adding the products into the shopping basket according to the quantity of food required. Now we get a window that displays the product name, price and quantity, and the total price and number of items pushed. Customer can also delete the product which is not required from the shopping basket.

4 Implementation, Testing, and Maintenance

4.1 Introduction to Languages, IDE's, Tools and Technologies used for Implementation

Technology Used:

- Angular 10:A component-based framework for building scalable web applications.A collection of well-integrated libraries that cover a wide variety of features, including routing, forms management, client-server communication, and more.A suite of developer tools to help you develop, build, test, and update your code.
- Firebase:Build powerful apps. Spin up your backend without managing servers. Effortlessly scale to support millions of users with Firebase databases, machine learning infrastructure, hosting and storage solutions, and Cloud Functions.

Languages Used:

- HTML:HTML stands for Hyper Text Markup Language.It is the standard markup language for creating Web pages,describes the structure of a Web page,consists of a series of elements.It elements tell the browser how to display the content.
- CSS:CSS stands for Cascading Style Sheets.It describes how HTML elements are to be displayed on screen, paper, or in other media and saves a lot of work. It can control the layout of multiple web pages all at once.
- Bootstrap:Bootstrap is a free front-end framework for faster and easier web development.Bootstrap includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many other, as well as optional JavaScript plugins.Bootstrap also gives you the ability to easily create responsive designs.

IDE used:

- VS Code:Visual Studio Code combines the simplicity of a source code editor with powerful developer tooling, like IntelliSense code completion and debugging.First and foremost, it is an editor that gets out of your way. The delightfully frictionless edit-build-debug cycle means less time fiddling with your environment, and more time executing on your ideas.

4.2 Coding standards of Language used

A coding standard gives a uniform appearance to the codes written by different engineers. It improves readability, and maintainability of the code and it reduces complexity also. It helps in code reuse and helps to detect error easily. It promotes sound programming practices and increases efficiency of the programmers.

I have followed various coding standards of Bootstrap, HTML and CSS that are:

- Being mindful of the structure from day one and taking care of the file structure so that it does not look messy and mixed up and given an idea of our project's modules and components.
- Using validators to check our code.
- Using meaningful names that can be understood by anyone, keeping them short.
- Using specific classes when necessary.
- Adding a class to the parent element if we want to give another style to the same block.
- To have a front-end that is as markup-based as possible.
- Using Bootstrap classes as much as possible.
- Using Bootstrap 4 classes and write less CSS.

4.3 Project Scheduling using various tools such as PERT, GANTT charts, Open PROJ etc.

I have used GANTT CHART for our project scheduling. It's helpful to be able to see everything that needs to be done, and know, at a glance, when each activity needs to be completed. Gantt charts convey this information visually. They outline all of the tasks involved in a project, and their order, shown against a timescale. This gives you an instant overview of a project, its associated tasks, and when these need to be finished. They also help you work out practical aspects of a project, such as the minimum time it will take to deliver, and which tasks need to be completed before others can start. Plus, you can use them to identify the critical path – the sequence of tasks that must individually be completed on time if the whole project is to deliver on time.

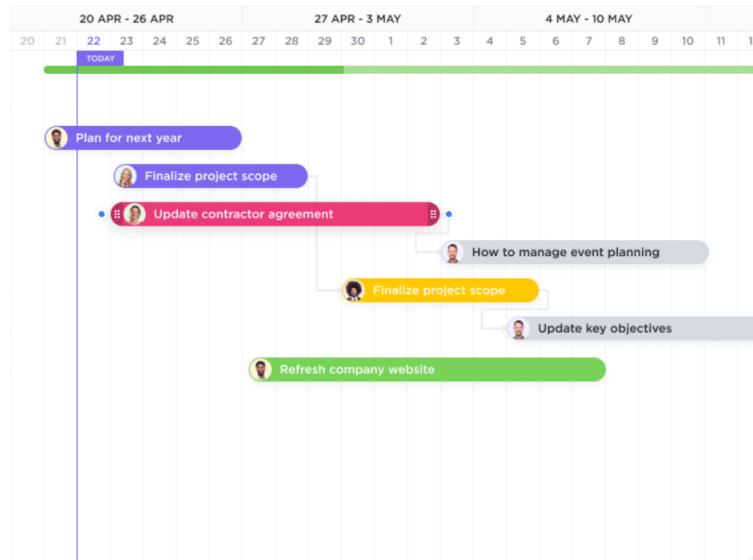


Figure 2: Gantt Chart

4.4 Testing Techniques and Test Plans

Testing Techniques: CREATIVE CONFECTIONS is a web application. So, it had to undergo all the typical test types:

- **UNIT TESTING:** Unit testing where individual program units or object classes are tested. Here by using this testing we have focused on testing the functionality of methods.
- **MODULE TESTING:** Where this is the combination of unit program is called module. Here we tested the unit program (5-6 programs) as where the module programs have dependency.
- **SUB-SYSTEM TESTING:** Then we combined some module for the Preliminary System Testing in our Project.
- **SYSTEM TESTING:** Where it is the combination of two or more sub-system and then it is tested. Here we tested the Entire system as per the requirements.
- **ACCEPTANCE TESTING:** Normally this type of testing is done to verify if system meets the customer specified requirements. After submitting this project to User then they tested it and to determine whether to accept application. It is the system testing performed by the customer(s) to determine whether they should accept the delivery of the system.

We also tested the working of all our modules and components along with their functionality and the database.

Test Plan:

A test plan is a detailed document which describes software testing areas and activities. It outlines the test strategy, objectives, test schedule, required resources (human resources, software, and hardware), test estimation and test deliverables.

Here's how we as testers technically got involved in testing our application. Our test plans included:

- Creating a order/Cart Modification/Add to cart:I checked if we were able to push the products to cart and increase or decrease their quantity and check if the prices and sum total changed accordingly and then view my cart-list.
- Routing of all my modules and components:I checked if all our web page components are routed in the right manner for an attractive responsive web application and smooth working.I ensured that the user is directed to required pages which serves the user's purpose for going on that page when he clicks the page link in the navigation bar.

5 Results and Discussions

5.1 User Interface Representation (of Respective Project)

The website promotes a small bakery. The home page presents the service, providing the links giving more information about the company and the items it offers. The designer was keen to activate different techniques of visual perception via headline, images and background so that users could get the basic information immediately and got the warm feeling of freshly baked products.

The next webpage to look is the user link on the navbar where the users can register themselves and login to the website.

The next webpage to look at is the catalog of the offered products: again, it supports the user with the prominent and high-quality photos of actual products. Users can also quickly review the rating of every item and its price and then Call-to-action button, via which the user can add the item to the basket, is designed with a different color comparing to all the other elements of the interface.

And the last one is testimonials webpage. The users here can see the reviews of some clients. It is designed with real high resolution background image at the back and their reviews on the top using the simple html and css.

5.1.1 Brief Description of Various Modules of the system

- Home Page:It contains brief information about our bakery shop.
- User module:It contains the login and register component in which the user can login or register to the website.
- Product-list component:It contains the list of products available and the add to basket functionality.
- Testimonials:On this page,we can view the clients' reviews.

5.2 Snapshots of system with brief detail of each

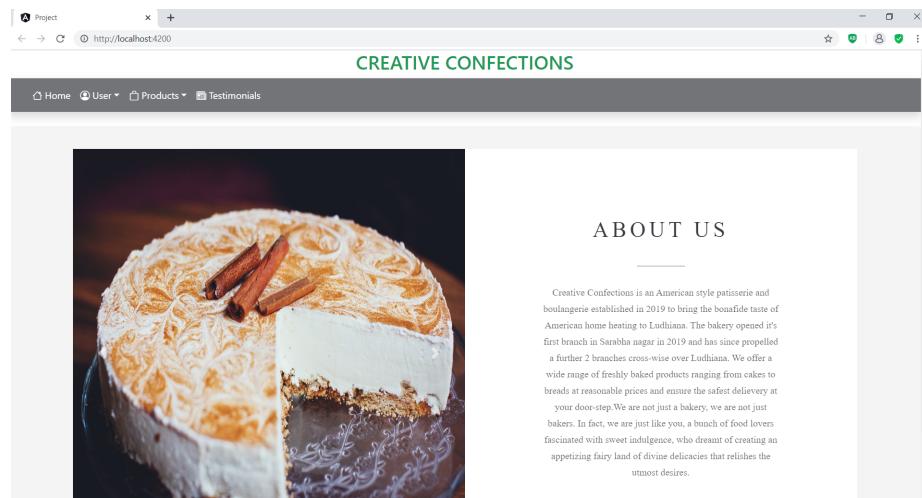


Figure 3: Home Page

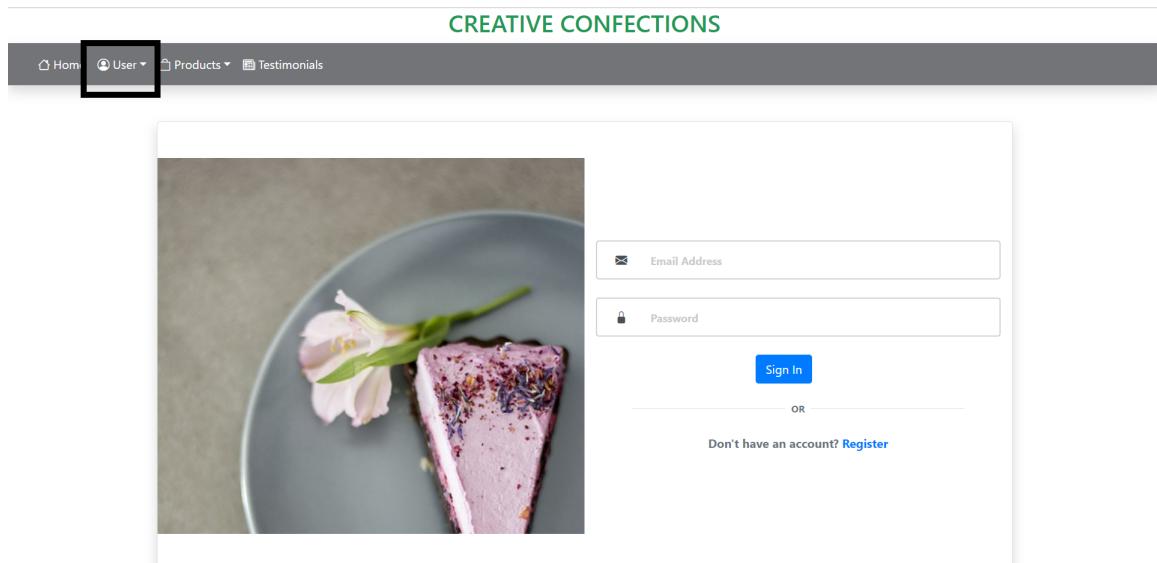


Figure 4: User Login Page

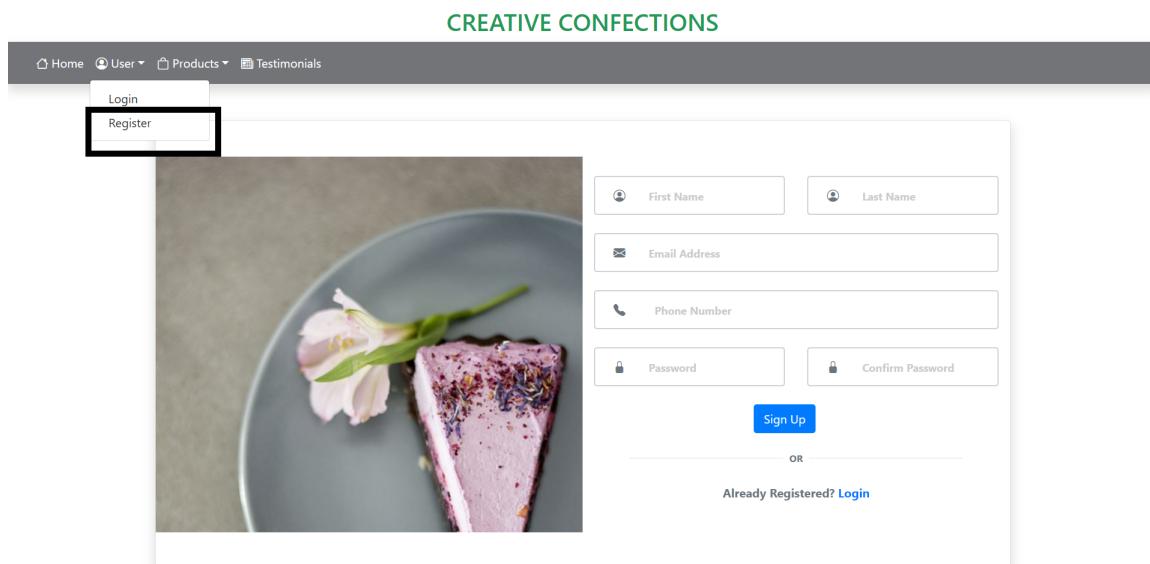


Figure 5: User Registration Page

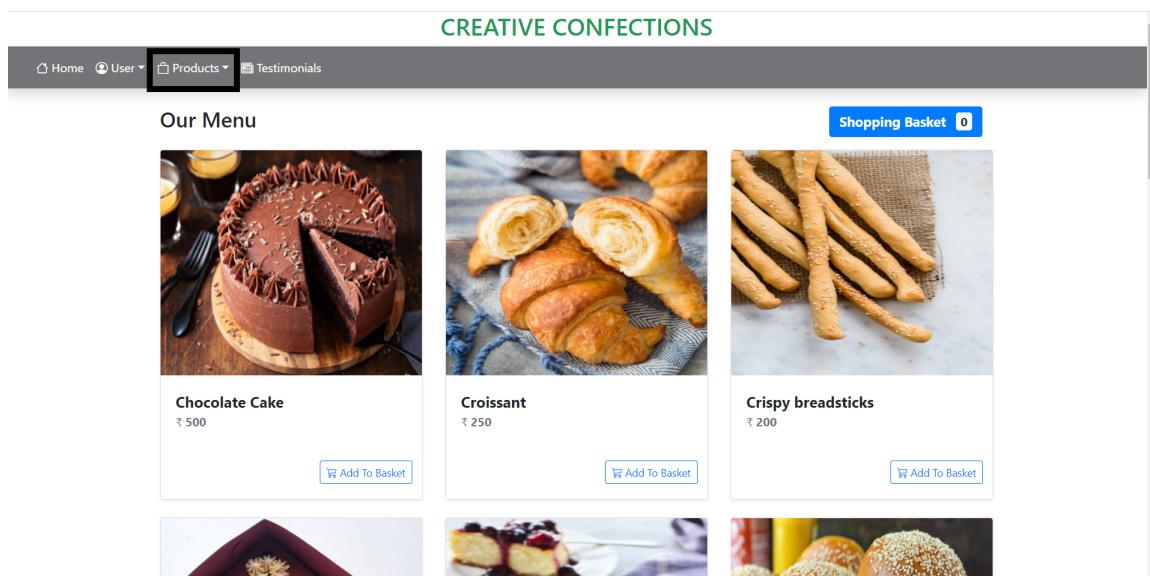


Figure 6: Products-List

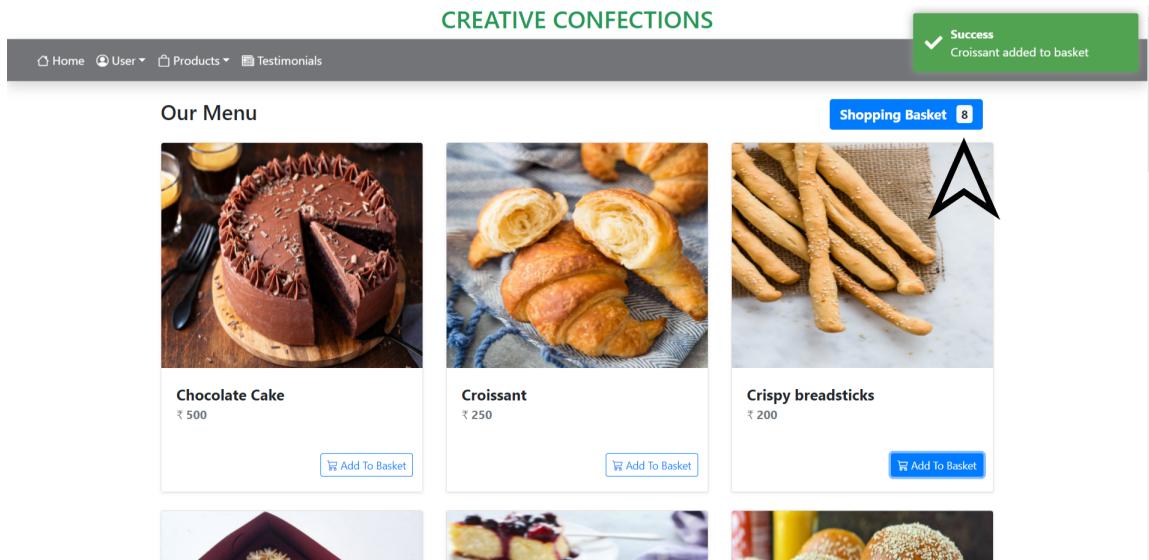


Figure 7: Shopping Basket

CREATIVE CONFECTIONS										
Shopping Basket										
Our Menu		Sr. No	Name	Rating	Quantity	Original Price	Total Price (in ₹)	Action		
		1	Cupcake Box	5	2	400	800			
		2	Blueberry Cheesecake	5	2	300	600			
		3	Burger Buns	4	1	200	200			
		4	Crispy breadsticks	3	2	200	400			
		5	Croissant	4	1	250	250			
Chocolate Cake ₹ 500		Total Items: 8 Total Price: ₹ 2250								
		Add To Basket								
		Add To Basket								
		Add To Basket								

Figure 8: View Cart-List

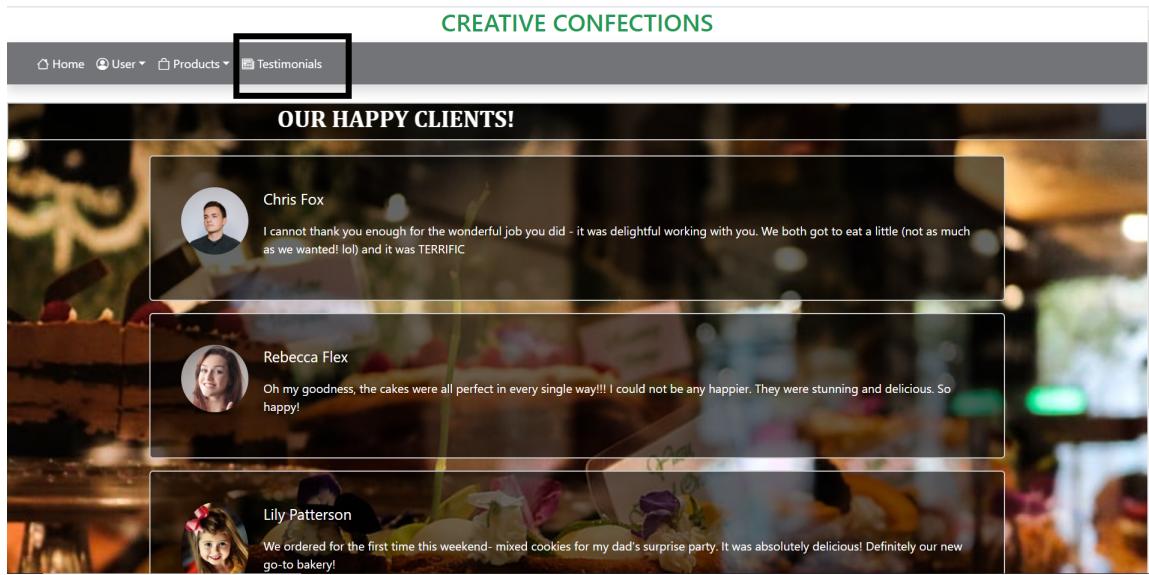


Figure 9: Testimonials

5.3 Back Ends Representation (Database to be used)

5.3.1 Snapshots of Database Tables with brief description

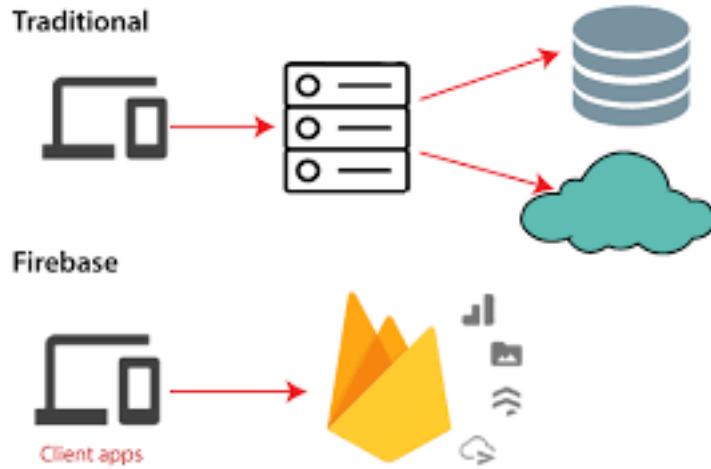


Figure 10: Firebase

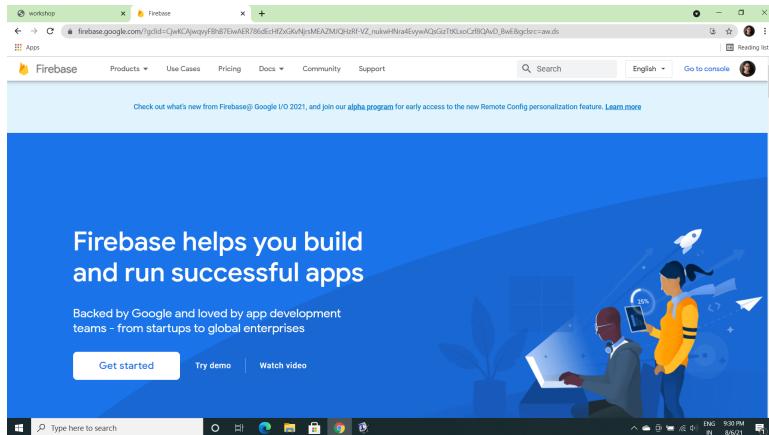


Figure 11: Firebase Homepage

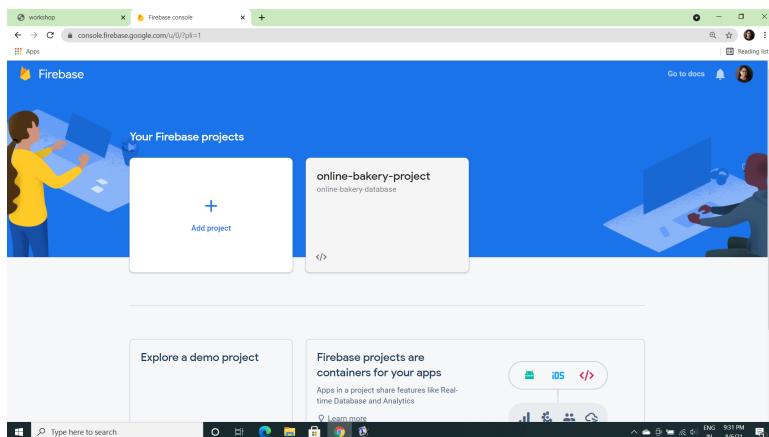


Figure 12: Our Project

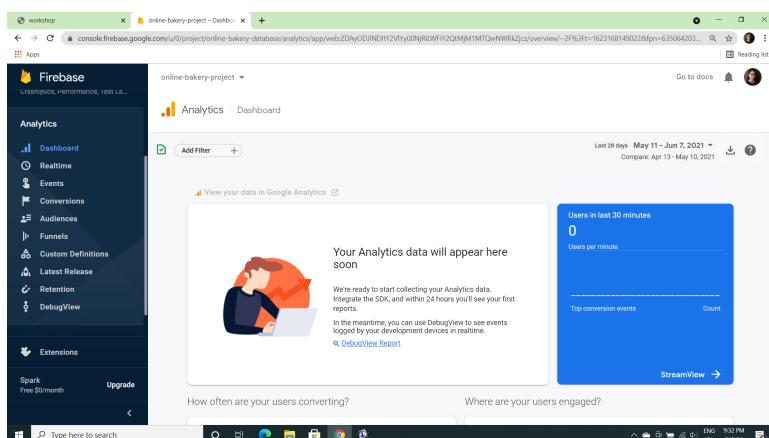


Figure 13: Dashboard

The screenshot shows the Firebase Authentication console for the 'online-bakery-project'. The left sidebar includes 'Project Overview', 'Build' (with 'Authentication' selected), 'Release & Monitor', and 'Extensions'. The main area is titled 'Authentication' with tabs for 'Users', 'Sign-in method', 'Templates', and 'Usage'. A search bar at the top says 'Search by email address, phone number, or user UID'. Below it is a table with columns: Identifier, Providers, Created, Signed in, and User UID. Two users are listed:

Identifier	Providers	Created	Signed in	User UID
mail@q.com	✉	May 31, 2021	May 31, 2021	8LK6dHyhbyAaQzobVdotUsT032
m@q.com	✉	May 31, 2021	May 31, 2021	eByyBR0TGDaIPX6fNqsdVE0FX...

At the bottom, there are buttons for 'Rows per page' (50), '1 – 2 of 2', and navigation arrows.

Figure 14: Authentication

The screenshot shows the Firebase Cloud Firestore console for the 'online-bakery-project'. The left sidebar includes 'Project Overview', 'Build' (with 'Cloud Firestore' selected), 'Release & Monitor', and 'Extensions'. The main area is titled 'Cloud Firestore' with tabs for 'items' (selected), '60CpCz3ZNDMy1Ff1T7', and '60CpCz3ZNDMy1Ff1T7'. It shows a list of documents under 'items':

- 60CpCz3ZNDMy1Ff1T7 (selected)
 - BGcokV1sOHDjM07LwZAU
 - Baqe3Z0hLyayKA2r0xq9
 - Dbe5Yy07h1gH1VLhIh
 - F841dd0JlsrbJbJPP06
 - G2t1dr0U0C2azbcxvucP0
 - IOM5dr4K0Hj1tgpmPI0
 - Myfc3X00THeg50dvdRQB
 - UG8kWJwJ0tD3on3H6PvC
 - WamL49uKCP2ZAEFaV
 - htvCqbdc1NM360Wjh6S1
 - jtrAVBHXx1K@M6ufBf5
 - pVnJ1glVTrnf38jJBDR
- 60CpCz3ZNDMy1Ff1T7

Figure 15: Products

6 Conclusion and Future Scope

My website is developed for online shopping of bakery products. This website can be accessed from any device and any browser. It has a simple UI and easy navigation which can be operated by anyone. We can add products using user login which we want to order. This website fits in well with the present-day pandemic situation and e-commerce market as people tend to make their purchase for the desired products. This project has helped us enhanced our skills for coding, programming, problem solving, teamwork, etc.

Shopping is a thing which cannot be outdated at least for a decade or more. We can also enhance User Experience of the website by adding search features in future. We aim to improve certain elements of the website as modifications and updates are required from time to time:

- Payment gateway for ease of transactions. The payment gateway will enable the user to make the transaction without cash.
- Faster process of making the purchase.
- Door to Door delivery

My Future plans for the website are firm the internet is growing day by day. With the ease our back-end tool we can grow our website and increase our reach digitally. In future I will add more payments like UPI, net banking, debit/Credit Card, etc. I will add live order tracking which can show the status of an order and can show the delivery parcel if it is ready and on its way. It is sure that these kinds of website have a lot of scope in the near future as online.

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