GLAZE – Mobile App Development

IN-LAB INTERNSHIP REPORT

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BONAFIDE CERTIFICATE

Certified that this In-Lab Internship report GLAZE - Mobile App

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Submitted for Evaluation held at Thiagarajar College of Engineering on

EXAMINER 1

EXAMINER 2

(Name with Signature)

(Name with Signature)

Abstract

This ongoing project focuses on the development of a mobile application designed to offer an innovative solution for help promoting the growth of home bakers. The project is currently in the advanced stages of development, incorporating expert insights to ensure that the app meets high standards in functionality, usability, and security.

The development process has involved in research to identify the most suitable technologies, frameworks, and design principles. Although the app is not yet fully operational, significant progress has been made in key areas, including user interface (UI) design, frontend development and feature development.

Current milestones achieved include prototype development, UI/UX design completion, key feature implementation. Ongoing work is focused on backend integration, with expert guidance shaping the refinement of these aspects.

The user feedback is used to ensure the app's readiness for market release. While the project is not yet complete, the foundations laid so far provide a strong basis for delivering a high-quality mobile application that will meet and exceed user expectations.

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Introduction

In today's fast-paced world, the demand for personalized, high-quality bakery products is growing rapidly. However, many consumers struggle to find options that offer both customization and affordability, especially from small-scale home bakers who prioritize quality over quantity.

This is where "GLAZE" comes in—a mobile app specifically designed to connect customers in Madurai with talented home bakers who create delicious cakes and bakery items, customized to each order, and offered at reasonable prices.

"GLAZE" aims to bridge the gap between discerning customers and home bakers, ensuring that every occasion is complemented by beautifully crafted, high-quality baked goods. The app provides a platform for small-scale bakers to showcase their talents, while giving customers the convenience of browsing, ordering, and customizing their cakes and other bakery items from the comfort of their homes.

The development of "GLAZE" has been driven by insights from experts in both the tech and culinary fields, ensuring that the app not only functions smoothly but also caters to the specific needs of the Madurai market. With an easy-to-use interface, the app allows users to explore various bakers, view their portfolios, and customize orders to fit their preferences—whether it's a birthday cake with a unique design or a batch of cookies made with specific ingredients.

Although "GLAZE" is still in the development phase, significant progress has been made in creating a seamless user experience and integrating features that allow for effortless customization and ordering. The next steps involve backend integration and development, incorporating feedback from both bakers and users, and fine-tuning the app to ensure it meets the highest standards of quality and reliability.

As the project approaches completion, "GLAZE" is poised to become the go-to app for those in Madurai seeking exceptional bakery items from local home bakers, combining the personal touch of homemade goods with the convenience of modern technology. The app will empower small-scale bakers by giving them a broader platform to reach customers, while offering users a reliable, easy way to access and enjoy the best that Madurai's home baking community has to offer.

2. Background

The rise of digital technology has revolutionized numerous industries, particularly in the food and beverage sector. However, the bakery segment, especially small-scale and home-based baking businesses, has not fully harnessed the power of digital platforms to reach their potential market. In Madurai, a city with a rich tradition of artisanal food production, many home bakers possess exceptional talent and a deep passion for their craft. These bakers create a variety of baked goods, from traditional sweets to modern cakes, often with a high degree of customization. Despite their skills, these bakers face significant challenges in scaling their businesses due to limited resources and access to marketing tools.

In recent years, consumer preferences have shifted toward more personalized and unique products, especially in the food sector. This trend is evident in the increasing demand for custom cakes and bakery items tailored to specific events and individual tastes. However, the current marketplace in Madurai does not effectively cater to this demand, particularly when it comes to small-scale bakers. Customers seeking customized baked goods often have to rely on word-of-mouth recommendations or manually searching through social media, both of which are inefficient and inconsistent methods for finding high-quality products.

The "GLAZE" app is designed to address these gaps in the market by providing a centralized platform that connects small-scale home bakers in Madurai with customers who value quality, customization, and reasonable prices. This platform not only aims to make it easier for customers to find and order from local bakers but also empowers the bakers themselves by giving them access to a wider audience and more efficient order management tools. By bridging the gap between demand and supply, "GLAZE" seeks to modernize the home baking industry in Madurai, supporting local entrepreneurs and enhancing the customer experience.

The background of this project also includes an analysis of similar platforms in other regions and industries. While there are successful models of food delivery and custom product apps, few cater specifically to the niche market of home-baked goods, particularly with a focus on customization and quality. This lack of direct competition in the region provides a unique opportunity for "GLAZE" to establish itself as a leader in this space.

Moreover, the cultural significance of food in Madurai, where traditional

and contemporary culinary practices are highly valued, offers a solid foundation for the app's growth and acceptance in the local market.

In summary, the background of the "GLAZE" project is rooted in the unique challenges and opportunities presented by the small-scale baking industry in Madurai. The app is positioned to leverage the growing trend of digital consumption and the demand for personalized products, providing a much-needed solution that benefits both bakers and customers alike.

3. Objectives

The "GLAZE" project is driven by several key objectives, each aimed at fulfilling the needs of small-scale home bakers and customers in Madurai. These objectives serve as the foundation for the app's development and strategic direction.

1. **Empower Small-Scale Bakers**: One of the primary objectives of "GLAZE" is to provide small-scale home bakers with a robust platform that enhances their business capabilities. This includes creating a space where bakers can showcase their products, reach a wider audience, and manage their orders more effectively. By offering features such as detailed baker profiles, photo galleries of their work, and customer reviews, "GLAZE" aims to elevate the visibility of these bakers, allowing them to compete more effectively with larger commercial bakeries. The app will also provide tools that simplify the order management process, helping bakers to track orders, communicate with customers, and manage their inventory. This

objective is crucial in supporting the growth and sustainability of small-scale baking businesses, many of which lack the resources to invest in extensive marketing or sophisticated order management systems.

2. **Facilitate Customization**: Customization is at the heart of what makes "GLAZE" unique. The app is designed to offer customers a wide range of options to personalize their orders, ensuring that each product meets their specific needs and preferences. This includes selecting from various flavors, ingredients, design themes, and even packaging options. By providing a user-friendly interface that allows for detailed customization, "GLAZE" aims to make the process of ordering a customized cake or bakery item as seamless as possible.

Additionally, the app will offer real-time previews and suggestions based on customer inputs, helping users to visualize their orders and make informed decisions. This focus on customization not only enhances the customer experience but also allows bakers to showcase their creativity and versatility, further distinguishing their offerings in a competitive market.

3. **Promote High-Quality Products**: Quality is a central pillar of the "GLAZE" platform. The app is committed to promoting bakers who use fresh, high-quality ingredients and follow meticulous baking practices. This objective is critical in building the app's reputation as a trusted source for premium bakery items in Madurai.

To achieve this, "GLAZE" will implement a rigorous onboarding process for bakers, ensuring that only those who meet certain quality

standards are featured on the platform. Additionally, the app will include a rating and review system, allowing customers to share their experiences and helping to maintain high standards across the platform. By focusing on quality, "GLAZE" aims to differentiate itself from other food delivery apps and establish a strong brand identity.

4. **Ensure Affordability**: While "GLAZE" prioritizes quality and customization, it is also committed to ensuring that these products remain affordable for the average consumer. The app will feature a range of pricing options, catering to different budgets without compromising on the quality or customization of the products.

This objective is particularly important in a market like Madurai, where price sensitivity can be a significant factor in purchasing decisions. By offering reasonably priced products, "GLAZE" aims to make high-quality, customized bakery items accessible to a broader audience, thereby expanding its customer base and supporting the growth of small-scale bakers.

5. **Simplify the Ordering Process**: A key objective of "GLAZE" is to create a seamless and intuitive ordering process that enhances the overall user experience. The app will feature a clean and user-friendly interface, allowing customers to easily browse products, customize their orders, and complete transactions with minimal effort.

The app will also include features such as order tracking, secure payment gateways, and customer support, ensuring that the entire process, from browsing to delivery, is smooth and hassle-free. By simplifying the ordering process, "GLAZE" aims to attract and retain

customers, making it the go-to platform for ordering bakery items in Madurai.

4. Purpose of the Work

The primary purpose of the "GLAZE" project is to create a digital platform that bridges the gap between small-scale home bakers and customers in Madurai. By leveraging technology, "GLAZE" seeks to modernize the way people access and enjoy baked goods, offering a solution that meets the evolving needs of both bakers and consumers.

At its core, "GLAZE" is about empowerment. For bakers, the app provides a platform that amplifies their visibility and business potential. Many small-scale bakers lack the resources or expertise to market their products effectively, often relying on word-of-mouth or small social media followings. This limited reach can hinder their growth, even if they produce high-quality products. "GLAZE" addresses this challenge by offering a space where bakers can showcase their talents to a wider audience, manage orders more efficiently, and build a reputation based on customer feedback. The app's features are designed to simplify the complexities of running a small baking business, allowing bakers to focus on what they do best—creating delicious, customized baked goods.

For customers, the purpose of "GLAZE" is to provide a convenient and reliable way to access high-quality, customized bakery products. The app simplifies the process of finding and ordering from small-scale bakers, who often produce superior products compared to commercial bakeries but are harder to find. By offering detailed customization options and a seamless ordering process, "GLAZE" ensures that customers can easily obtain bakery

items that are tailored to their specific needs and preferences. This focus on personalization not only enhances the customer experience but also supports the growing trend toward more individualized, unique products in the food industry.

Another important purpose of "GLAZE" is to contribute to the local economy by supporting small-scale entrepreneurs. Home bakers often operate on tight margins, with limited access to the resources and tools needed to grow their businesses. By providing a platform that increases their visibility and streamlines their operations, "GLAZE" helps these bakers achieve greater financial stability and business growth. This, in turn, contributes to the economic vibrancy of the community, as successful small businesses play a crucial role in sustaining local economies.

Moreover, "GLAZE" aims to preserve and promote the artistry of home baking in Madurai. The city has a rich culinary heritage, with a deep appreciation for traditional methods and flavors. However, this heritage is at risk of being overshadowed by the rise of commercialized, mass-produced bakery products. By highlighting the work of small-scale home bakers who often blend traditional techniques with modern creativity, "GLAZE" seeks to preserve this cultural legacy while also encouraging innovation in the culinary arts.

In summary, the purpose of "GLAZE" is multifaceted: to empower small-scale home bakers, provide customers with a superior bakery ordering experience, support the local economy, and preserve the culinary heritage of Madurai. Through these efforts, "GLAZE" aims to create a sustainable and thriving ecosystem that benefits all stakeholders involved.

5. Problem Formulation

The "GLAZE" project is driven by the need to address specific challenges faced by small-scale home bakers and customers in Madurai. These challenges form the basis of the problem formulation for the project, which is focused on creating a solution that effectively meets these needs.

One of the primary problems faced by small-scale home bakers is limited visibility and reach. Despite producing high-quality and often superior products, these bakers struggle to compete with larger commercial bakeries due to their lack of marketing resources and digital presence. Many rely on word-of-mouth or social media, which, while effective to some extent, do not provide the consistent or wide-reaching exposure needed to grow their businesses. This limited visibility restricts their ability to attract new customers and scale their operations, leading to financial instability and, in some cases, the eventual closure of their businesses.

Another significant problem is the lack of a centralized platform for customers to easily find and order from small-scale bakers. Customers seeking customized bakery products often have to navigate a fragmented marketplace, relying on personal recommendations or searching through various social media platforms. This process can be time-consuming and frustrating, as there is no guarantee that the products found will meet the desired quality or customization requirements. Additionally, the absence of a streamlined ordering system often leads to miscommunication, errors in orders, and delays in delivery, all of which contribute to a poor customer experience.

The issue of customization is another critical problem that "GLAZE" seeks to address. While there is a growing demand for personalized bakery products, the process of customizing an order is often cumbersome and unclear, particularly when dealing with small-scale bakers who may not have the tools or systems in place to manage detailed custom orders efficiently. This can result in customer dissatisfaction, as the final product may not match their expectations or needs.

Furthermore, the problem of affordability is also significant. While customers are willing to pay for high-quality, customized products, they are often price-sensitive, particularly in a market like Madurai. Many small-scale bakers struggle to find the right balance between pricing their products competitively and covering their costs, especially when factoring in the cost of quality ingredients and the time-intensive nature of customized baking. This can limit their ability to attract a broader customer base and sustain their business in the long term.

Finally, the overall customer experience in the current marketplace is fragmented and inconsistent. From discovering a baker to placing an order and receiving the final product, the process is often disjointed, with multiple pain points that can lead to frustration and dissatisfaction. This not only impacts the customer's likelihood of returning but also affects the baker's ability to build a loyal customer base.

The problem formulation for "GLAZE" is, therefore, centered around these core challenges: enhancing the visibility and reach of small-scale home bakers, creating a centralized platform for customers to easily find and order customized bakery products, simplifying the customization process, ensuring affordability, and improving the overall customer experience. By addressing

these problems, "GLAZE" aims to create a solution that benefits both bakers and customers, ultimately leading to a more vibrant and sustainable home baking industry in Madurai.

6. Conceptual Design

The conceptual design of the "GLAZE" app is focused on creating a user-friendly platform that meets the needs of both small-scale home bakers and customers in Madurai. The design is guided by the core objectives of the project, ensuring that the app is intuitive, efficient, and effective in addressing the identified problems.

1. User Interface (UI) and User Experience (UX) Design: The UI and UX design of "GLAZE" are critical components that determine the app's usability and overall user satisfaction. The app will feature a clean, modern interface that is easy to navigate, with a focus on simplicity and functionality. The home screen will provide quick access to key features, such as browsing bakery items, customizing orders, and managing profiles for bakers. The design will prioritize ease of use, ensuring that both tech-savvy and less experienced users can navigate the app with ease.

The UX design will focus on creating a seamless experience for users, from the moment they open the app to the final delivery of their order. This includes intuitive navigation, clear calls to action, and streamlined processes for browsing, customizing, and ordering bakery products. Additionally, the app will incorporate responsive design

principles, ensuring that it works smoothly across different devices, including smartphones and tablets.

2. **Baker Profiles and Product Display**: A key feature of "GLAZE" is the detailed baker profiles, which allow home bakers to showcase their products, skills, and specialties. Each profile will include a photo gallery of the baker's work, customer reviews, and detailed descriptions of their offerings. Bakers will have the ability to update their profiles regularly, adding new products, seasonal specials, and any other relevant information.

The product display will be visually appealing and easy to browse, with high-quality images and detailed descriptions of each item.

Customers will be able to filter products based on various criteria, such as price, type of baked good, flavor, and customization options.

This feature will help customers quickly find the products that best meet their needs, while also highlighting the unique offerings of each baker.

3. **Customization Tools**: Customization is a central feature of "GLAZE," and the app will include a robust set of tools that allow customers to personalize their orders with ease. These tools will enable users to select specific flavors, ingredients, design themes, and other customization options. The app will offer real-time previews of the customizations, helping customers visualize their orders before finalizing them.

Additionally, the customization process will be guided by prompts and suggestions based on the customer's inputs, ensuring that they can

create the perfect product for their needs. The app will also allow customers to save their favorite customizations for future orders, streamlining the process for repeat purchases.

4. **Order Management System**: The order management system is designed to help bakers efficiently manage incoming orders, track inventory, and communicate with customers. The system will include features such as order tracking, notifications, and automated reminders, ensuring that bakers can stay on top of their orders and meet delivery deadlines.

Bakers will also have access to analytics and reporting tools, allowing them to track their sales, monitor customer feedback, and identify trends in customer preferences. This information will be valuable in helping bakers refine their offerings and improve their business operations.

5. **Payment Gateway and Security**: "GLAZE" will integrate with secure and trusted payment gateways, ensuring that transactions are safe and hassle-free. The app will support multiple payment methods, including credit/debit cards, digital wallets, and bank transfers.

Security will be a top priority, with encryption and other measures in place to protect user data and ensure the integrity of transactions.

The app will also include features such as order confirmation and receipt generation, providing customers with clear records of their purchases. These features will contribute to a smooth and trustworthy purchasing experience, enhancing customer satisfaction.

6. **Notification and Communication System**: The notification and communication system is designed to keep both bakers and customers informed and engaged throughout the ordering process. Customers will receive notifications at key stages of their order, such as order confirmation, customization updates, and delivery status. Bakers will also receive alerts for new orders, special requests, and other important updates.

The app will include a messaging system that allows direct communication between bakers and customers, facilitating any clarifications or special requests. This feature will help ensure that orders are fulfilled accurately and to the customer's satisfaction.

Andrio Studio:

Android Studio is the official integrated development environment (IDE) for Google's Android operating system. It is built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. Android Studio provides tools for building, testing, and debugging Android applications.

We used this platform to create our app

In android studio:

- Use Dart language
- Use Dart and Flutter plugins

7. Results and Discussion

The "GLAZE" app is still under development, but initial testing and feedback have provided valuable insights into its potential impact and areas for improvement. This section discusses the key results from prototype testing, as well as the ongoing development process.

1. **User Feedback and Testing**: Initial testing of the "GLAZE" prototype involved a select group of bakers and customers in Madurai. The feedback was generally positive, with users praising the app's ease of use, customization features, and overall design. Bakers appreciated the ability to showcase their products and manage orders more efficiently, while customers found the app intuitive and helpful in finding and ordering customized bakery items.

However, testing also revealed some areas for improvement. For instance, some users reported that the customization interface could be more streamlined, with clearer options and faster load times. Others suggested additional features, such as more detailed product filtering options and enhanced communication tools between bakers and customers. These insights have been invaluable in guiding the ongoing development of the app, ensuring that it meets the needs and expectations of its target users.

2. **Challenges and Solutions**: The development of "GLAZE" has encountered several challenges, particularly in terms of balancing customization options with simplicity and ease of use. Ensuring that the app offers a wide range of customization possibilities without

overwhelming users has been a key focus. The development team has worked to create a user-friendly interface that guides customers through the customization process with prompts and suggestions, helping them make informed decisions without feeling lost.

Another challenge has been optimizing the app for performance across different devices and network conditions. Given the varied technological landscape in Madurai, it is essential that "GLAZE" performs well on both high-end and more basic smartphones. The team has focused on optimizing the app's code and reducing load times to ensure a smooth experience for all users.

3. Market Positioning and Future Prospects: "GLAZE" is positioned to fill a significant gap in the market, offering a unique combination of customization, quality, and affordability. The app's focus on small-scale home bakers sets it apart from other food delivery platforms, which often prioritize speed and convenience over personalization and artisanal quality. By targeting a niche market that values these qualities, "GLAZE" has the potential to build a loyal customer base and become a leading platform for customized bakery products in Madurai.

Looking ahead, the app's future prospects are promising, with plans to expand its features and reach. Potential enhancements include the integration of AI-driven customization suggestions, expanded delivery options, and partnerships with local businesses for cross-promotion. The team is also exploring the possibility of expanding the platform to other cities, where similar market conditions exist.

8. Conclusion and Future Enhancements

The "GLAZE" project represents a significant step forward in the digital transformation of the home baking industry in Madurai. By providing a platform that empowers small-scale bakers and enhances the customer experience, "GLAZE" has the potential to make a lasting impact on the local economy and culinary culture.

Conclusion: The development and testing of "GLAZE" have demonstrated the app's potential to address key challenges faced by both bakers and customers. The app's focus on customization, quality, and affordability aligns with the evolving demands of the market, positioning it as a valuable tool for small-scale bakers looking to grow their businesses. The positive feedback from initial testing underscores the app's usability and effectiveness, while also highlighting areas for further refinement.

"GLAZE" is not just a business tool; it is a platform that celebrates the artistry and passion of home baking, offering customers a way to enjoy high-quality, personalized products that reflect the unique talents of Madurai's bakers. By bridging the gap between traditional baking practices and modern technology, "GLAZE" aims to create a sustainable ecosystem that benefits all stakeholders involved.

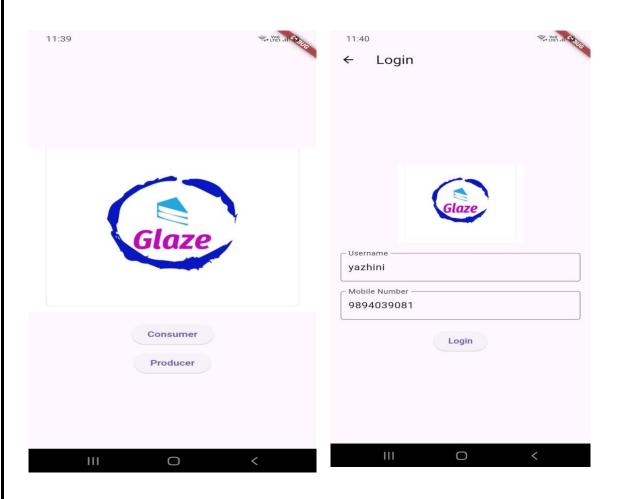
Future Enhancements: The future development of "GLAZE" will focus on several key areas:

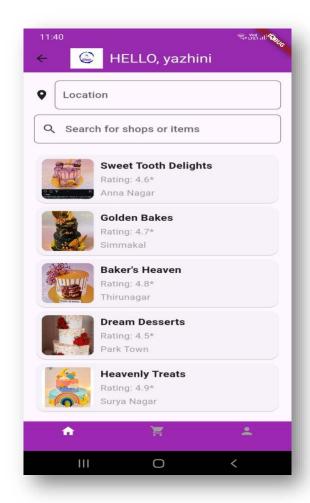
1. **AI-Driven Customization**: Integrating artificial intelligence to provide customers with intelligent suggestions based on their

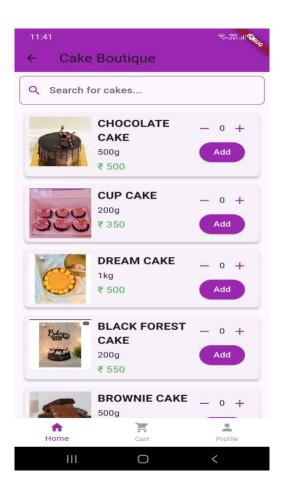
- preferences and past orders. This feature will enhance the customization process, making it even more intuitive and personalized.
- 2. **Expanded Delivery Options**: Partnering with local logistics providers to offer a wider range of delivery options, including sameday delivery and scheduled deliveries. This will improve the convenience and flexibility of the ordering process.
- 3. **Enhanced Communication Tools**: Developing more sophisticated communication tools within the app, allowing for real-time chat between bakers and customers, as well as the ability to send images and files for more detailed customization requests.
- 4. **Loyalty Programs and Promotions**: Introducing loyalty programs and promotional offers to reward repeat customers and encourage new users to try the platform. These programs could include discounts, referral bonuses, and exclusive offers from toprated bakers.
- 5. **Expansion to Other Cities**: Exploring opportunities to expand "GLAZE" to other cities where there is a demand for customized bakery products and a strong community of small-scale bakers. This expansion will be guided by market research and pilot testing in selected locations.
- 6. **Integration with Social Media**: Enhancing the app's social media integration, allowing users to share their orders and experiences on platforms like Instagram and Facebook. This will help to build a community around "GLAZE" and attract new users through word-of-mouth and social sharing.

In conclusion, "GLAZE" has the potential to revolutionize the home baking industry in Madurai, offering a platform that meets the needs of both bakers and customers in a way that is innovative, user-friendly, and impactful. The ongoing development and future enhancements will ensure that the app continues to evolve and adapt to the changing needs of the market, solidifying its position as a leader in the niche of customized bakery products.

Consumer's pages:







Appendix:

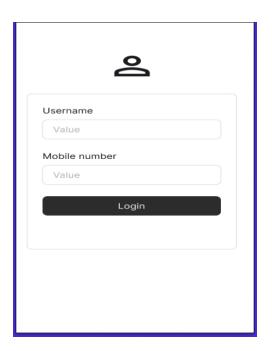
UI-Design: Wireframes and UI Designs

- **Screenshots or Wireframes**: Visual representations of the app's user interface, showing the layout of key screens like the home page, menu, checkout, and user profile.
- **Design Guidelines**: Information about the design principles followed, such as color schemes, fonts, and spacing.

OPENING:

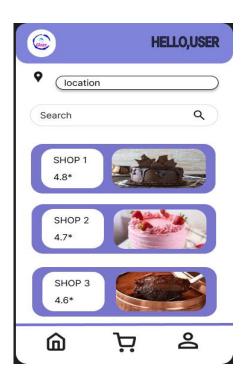
LOGIN/SIGNIN OF CONSUMER:





HOME OF CONSUMER:

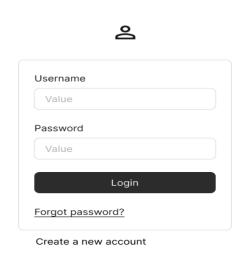
ORDERING OF CONSUMER:



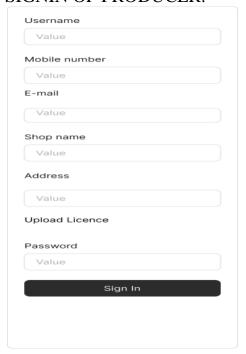


Producer's page:

LOGIN OF PRODUCER:



SIGNIN OF PRODUCER:

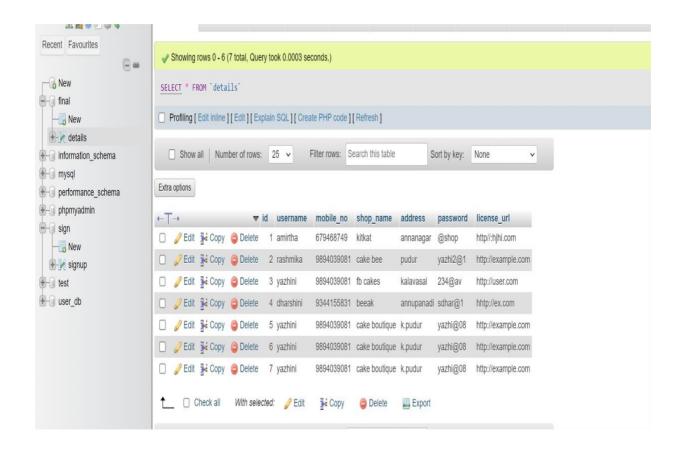


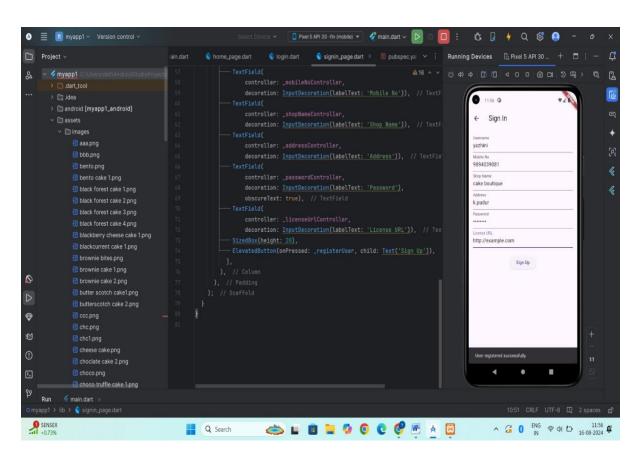
Database:

We store datas of producer's sigin-page using Xampp(database)

Xampp:

- Once produer sigin in their datas into this app it will store in Xampp(database)
- After sigin their datas they will login and use.
- In login page it will check the producer's data it will in database then it will show "Login Sucessfully".





References:

We refer some E-commerce apps and home bakers's pages

- https://www.zomato.com/
- https://www.swiggy.com/
- https://play.google.com/store/apps/details?id=com.baking
 o&hl=en_IN
- https://www.youtube.com/watch?v=D4nhaszNW4o&pp=
- https://www.youtube.com/watch?v=QGqMJzywasg&list =PL4cUxeGkcC9iVGY3ppchN9kIauln8IiEh
- https://www.youtube.com/watch?v=kMI2jy-WIGM&pp=ygUXYW5kcm9pZCBzdHVkaW8gdHV0b3 JpYWw%3D