

# Food Mato Apps in the Restaurant Industry: A New Way to Use Technology in the Food Industry

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**ABSTRACT** Our proposed system a service-based food ordering web application which is embedded with some latest technology that enables the ease and provide the best experience to the customer and user. It overcomes the conventional method of ordering food from any restaurants, like: waiting in queue or by approaching the restaurants which takes significant amount of time. Our proposed system is a medium to order food online and make it hassle free for both customers and restaurants. This system provides the liberty to the customers to order any kind of food from their favorite restaurants with the help of Food menu and list of restaurants available on the application. It also provides the feedback system where the customer can rate the dishes, food items and its concerning restaurants /hotels as per their experience. which will certainly help the customers for further better experience and the restaurants and hotels to improve their products and services. This system can also recommend the best rated food and restaurants based on its ratings given by the users. The payment can be done in both ways: Online mode and COD mode. For the purpose of better security and Data privacy this system will provide the Authenticity to every Users by generating a unique user ID and Password. The basic requirements to use this system are: Smart Phone, Tablets, Computer/Laptops and Internet Connectivity via mobile internet or Wi-Fi. This proposed system will provide the opportunities to small hotels, restaurants to compete against the big names in the same market which are already well-established and will also give exposure and help them to grow their business without paying the big amount for advertisement. In the era advance technology this system will be easy to use and will provide the best experience to its users.

**Keywords:**(customer, Wi-fi, ordering, payment, Authenticity, business)

**Abbreviation :**(COD- Cash on delivery)

## INTRODUCTION

This online food delivery system is proposed to provide the best user experience and best services to its users. And it is designed to solve the basic problem of consumers and restaurants. In today's era the technology has become an integral part of our day-to-day life and even people living in rural areas are also well acquainted with some of the latest technology via their mobile phones and computer systems. So, when the world is going with technology and making most benefit out of it then it sets an environment for the young entrepreneurs to use the latest technology to provide the solution of the modern problem. Online food delivery application is one of the innovations that provides the solution to the problems related to online food ordering /delivery system.

The main objective of our project is to manage the multiple orders with multiple restaurants and provide the best services to the consumers. And it is designed to reduce and manage the manual workload of ordering food, choosing food items, and making payment at cash counter. Along with this it will also collect the personal details of consumers regarding health status and will store it in its database. It will also collect all the information related to food items and will manage it flawlessly. It will function in such a way that when any user will log in to order some food then based on its database it will recommend the food items that will not damage the health of the consumers. To maintain the authenticity in the application, all the credentials of the users will get verified from the admin end only then the user will get access to order any food and make any transaction.

## II. Benefits of Food Apps in Today's World

Food With increasing emphasis of technology and it becoming an integral part of people's lives, finding solutions to problems that exists in modern age or we can say in 21st Century has become a hotpot in IT industry. Mostly, in Urban areas there are a certainly many problems and one such problem which also a point of research of this paper is food delivery.

Food delivery although there are not many companies which are doing it on a large scale but has becomes an area of interest for already present companies and for entrepreneurs who want to enter in this space. ZOMATO and SWIGGY are some big names in this industry.

The benefits which are been offered by the application are substantial as they solve the biggest problem for the bachelors living in urban areas.

With food delivery being an option bachelors living alone or students living in hostels and PG's can order food at odd hours or have the chance to save their time as they do not have to go to the restaurant.

Some benefits given by the "food applications" are:

1. **Reachability convenience:** As ordering food from one touch as most of these apps are mobile based is a huge convenience. Also, we do not have to worry about the food getting wasted a sometimes the way to carry food also plays a crucial role. For example: Carrying cakes while commute is a difficult task as the decoration may get ruined, Pizzas as they are large so the toppings may get spoiled.

So, the delivery personnel are trained for this work and, they have special vehicles for food delivery.

2. **Customization of food:** It is easier to customize the food. Like some food joint like Subway allows their customers to fully customize their sandwiches according to their taste.

3. **Competitive Market:** As today's market is all about competition and the ability to serve better to their customers this makes the food ordering market full of offers where food joints and the apps offer ravishing offers to their customers in order to expand their customer base. This makes food affordable and the main advantage of this comes out when there is joint family outing. At attractive pricing and without affecting the overall budget the restaurant food becomes so affordable that in Urban areas there been seen a hike in food orders over these applications.

4. **Health-conscious space:** With these applications becoming more and more in demand the need for heathy food has also opened a new market. Many health applications were already there who offers exercises and recipes. But, in particular a need for new food joints and also existing food joints have started including healthy food option in their menus by acknowledging the growing demand for healthy food.

### III. Concept Generation forFood Apps

**Healthy Eating App:** A food app that provides healthy recipes, meal plans, and nutritional information to users. It could also have a feature that tracks the user's calorie intake and suggests healthy alternatives for meals that may be high in calories.

**Meal Delivery App:** A food app that delivers pre-made meals to users. The app could have options for different dietary requirements such as vegetarian, vegan, or gluten-free.

**Grocery Delivery App:** A food app that allows users to order groceries online and have them delivered to their doorstep. It could also have features such as recipe suggestions based on the items in the user's cart. **Recipe Sharing App:** A food app that allows users to share their favorite recipes with others. Users canalso rate and review recipes and follow other users for new recipe ideas.

**Food Donation App:** A food app that allows users to donate excess food from restaurants, events, or their homes to local food banks or homeless shelters. The app could also provide information on food waste reduction and sustainability. **Food Diary App:** A food app that allows users to track what they eat and drink throughout the day. The app could also provide nutritional information and suggest healthier options for meals.

**Meal Planning App:** A food app that helps users plan their meals for the week. The app could also generate a shopping list based on the user's meal plan. **Restaurant Review App:** A food app that allows users to rate and review restaurants in their area. Users can also search for restaurants based on cuisine, location, or price range. **Food Allergy App:** A food app that provides information on food allergies and allows users to filter restaurants and recipes based on their specific allergies. **Social Eating App:** A food app that connects people with similar food preferences

### IV. Research and Hypothesis/Findings:

#### A. Research Question:

What are the motivations and behaviors of consumers who usefood apps to order meals?

**Hypothesis:** Consumers who use food apps to order meals are motivated by several factors, including convenience, speed, and a desire for variety in their meals. These motivations can be influenced by a range of demographic and psychographic factors, such as age, income, lifestyle, and cultural background. One of the key motivations for using food apps toorder meals is convenience. These apps offer a quick and easy way to order food from a range of restaurants and cuisines without leaving the comfort of one's

home or office. This is particularly appealing to consumers who are time-pressed, have busy schedules, or simply prefer to avoid the hassle of going out to eat.

Speed is another factor that motivates consumers to use food apps. Many food apps offer fast and efficient delivery services, allowing consumers to get their meals quickly and easily. This is especially important for consumers who are hungry and want their food as soon as possible. Variety is also a significant motivator for consumers who use food apps. These apps typically offer a wide range of food options from different cuisines, allowing consumers to explore new flavors and cuisines that they might not have otherwise tried. This is particularly appealing to consumers who are foodies and enjoy trying new things.

In terms of behaviors, consumers who use food apps tend to be digitally-savvy and comfortable with using technology to make purchases. They are also more likely to be younger, urban, and have higher incomes. They may also be more health-conscious and interested in options such as vegetarian, vegan, or gluten-free meals.

How do food apps contribute to changes in food consumption habits and dietary choices among users?

**Hypothesis: Increased convenience:** Food apps make it easier for consumers to access a wider range of food options, including healthier choices. This convenience can encourage users to make healthier choices, as they may be more likely to choose a healthier option if it is readily available and convenient to order.

**Greater transparency:** Many food apps provide detailed information about the nutritional content of menu items, including calorie counts and ingredient lists. This information can help users make more informed choices about what they eat, and encourage them to select healthier options.

**Customization options:** Many food apps allow users to customize their orders, allowing them to make healthier choices by, for example, choosing to substitute a side of fries for a salad. This level of customization can encourage users to make healthier choices that better align with their dietary preferences and needs.

**Social influence:** Food apps often incorporate social features, such as user reviews and recommendations. These social influences can encourage users to try new restaurants and dishes, including healthier options that they may not have otherwise considered.

**Increased awareness:** Food apps can help raise awareness about food-related issues, such as sustainable sourcing, food waste reduction, and healthy eating. This increased awareness can encourage users to make more conscious choices about what they eat and where their food comes from.

Overall, food apps can play a positive role in shaping food consumption habits and dietary choices among users by providing convenient, transparent, and customizable options that promote healthier eating.

**B. Findings:**

The study found that the consumer’s concern regarding healthy food has increased in last 2-to 4 years of time. Along with this affordable price and healthy food recommendation is also a major concern these days. To meet the requirement of the consumers, we need to Implement few features (Food Recommendation, Calories chart, and Health analysis) in the existing system.

Determinant Issues	Key Attributes	Constraints Factors Affecting Determinant Issues	Critical Constituent Elements
Supplier (Restaurants)	Inventory	Shortage of Supply	Hiked Price
	Competition	Customer Switch	High Customer Retention Cost
	Health & Hygiene	Increased Food Price	High Maintenance Cost
Food Delivery Partner	Responsiveness	High Operational Cost	Price Hiking
	Assurance	Less Quantity	Increased Economy
	Marketing	Non-Availability in Rural Areas	Low Standard of Living
Customer	Reliability	Wrong Delivery	Brand Switch
	Convenience	High Traffic	Late Delivery
	Safety	Lack of Trustworthiness of Deliverer	More Dine Out
Food Delivery Technology	Usage	Low Access to the Internet	Lack of Information
	Privacy	Fear Of Personal Data Theft	More Tele-Orders
	Payment	Third-Party Theft	More Cash Transactions

**Design Constraint- Regulations:**

As these applications are used in public domain so there must be some constraints and regulations to comply with. The need for this is important because as we live in technological age so there are a lot of vulnerabilities, risks, and threats with which these companies must deal with.

So, these food apps comply with privacy policies defined by the General Data Protection (GDPR) in European Union and the California Consumer Privacy Act (CCPA) in the United States.

The main objective of the above-mentioned regulations is that before collecting any type of data from the user in the name of minimum requirement, the information which is to be gathered must be known to the user on the prior basis. And a consent of the user must be taken and the ability to revoke from these permissions must be given to the user.

Some regulations which are to be taken care of are as follows:

1. Safety regarding food: As, the major dealing of these apps is with food, so they must comply with the food safety regulations defined by the authorities. These regulations take care of the food quality and the chemicals which are added into the food in the name of preserving. The very first step starts with enlisting the restaurants with a check list that whether the it is licensed and whether they are following all the norms related to food safety. Is the food transported safely in accordance to food safety guidelines.

2. Safety regarding online payment or cod payment method: As there has been an increase in online frauds, so these apps must have the latest technologies and best practices used to safeguard the consumers from these types of frauds.

And once the payment is done to a specific food merchant the food must be delivered from that merchant only. And the restaurant must not backoff from providing the order as the payment has been done for that order.

Also, it is the duty of the application provider that once the food is delivered the restaurant must not be subjected to a fraud in the name of refund for rotten or bad food. As, recently Zomato and Swiggy both have suggested that there is some percentage of consumers who get their money back from the restaurants, by complaining about the delivered food and stating that the perfectly given order was having rotten or spoiled food.

3. Regulations based on Advertisements: The food apps must not do false advertisement that may affect the offline customers response of a particular restaurant by showing false negative reviews on their platform and writing bad reviews for the food. Also, the must also safeguards the restaurants form getting targeted by the people. At the same time, if a restaurant is giving a larger share of their business to the app the food applications must not false advertisement for that restaurant even if the food quality standards are not met. In the end, these regulations are something that provides security and reliability to both the consumers and the restaurants. Food apps must comply with accessibility regulations, such as the Web Content Accessibility Guidelines (WCAG), to ensure that the app can be used by people with disabilities and with the intellectual property regulations, such as copyright and trademark laws, to ensure that they do not infringe on the rights of others.

#### IV. Analysis and Feature finalization subject to constraints:

Some potential constraints to consider when developing food apps include:

1. User constraints: Understanding the needs and preferences of the target audience is critical for designing an app that is user-friendly and engaging. This can involve conducting user research to determine their demographics, behaviors, and expectations.

2. Technical constraints: Food apps often require complex technical infrastructure, such as real-time tracking, payment processing, and order management systems. Ensuring that the app can handle high volumes of traffic and transactions is essential.

3. Regulatory constraints: Food apps may be subject to various regulatory requirements, such as food safety and hygiene regulations, data privacy laws, and consumer protection laws. Compliance with these regulations should be built into the app's design and development process.

4. Resource constraints: Developing and maintaining a food app can be expensive, and it may be necessary to work within budgetary constraints. This can involve prioritizing certain features over others and finding ways to optimize resource utilization.

Once these constraints have been identified, the analysis and feature finalization process can begin. Some key steps in this process may include:

1. Defining app requirements: Based on the constraints and user research, defining the app's functional and non-functional requirements is critical. This can involve creating user stories, use cases, and wireframes.

2. Prioritizing features: Given the resource constraints, it may not be possible to include all desired features in the initial release. Prioritizing the most important features can help ensure that the app delivers maximum value to users.

3. Prototyping and testing: Developing prototypes and conducting

user testing can help refine the app's design and ensure that it meets user needs and expectations. Iterative development: Developing the app in an iterative manner, with frequent releases and user feedback, can help ensure that it remains up-to-date and relevant.

4. Continuous improvement: Once the app has been released, ongoing monitoring and improvement can help ensure that it continues to meet user needs and expectations. This can involve gathering user feedback, monitoring app performance, and making updates as needed.

### *Design Flow (at least 2 alternative designs to make the project)*

There are many ways to design a food app, and the best approach will depend on the specific goals and requirements of the project. Here are two alternative designs that could be used to create a food app:

#### Design 1: Order and Delivery App

- I. Home Screen: A simple and clean home screen with options to search for restaurants, view popular dishes, and browse by category.
- II. Restaurant Selection: A list of restaurants with options to filter by cuisine, price, distance, and ratings. Each restaurant should have a short description, ratings, and reviews.
- III. Menu Selection: Once a user selects a restaurant, they can view the restaurant's menu with options to filter by categories, view details about each dish, and add items to the cart.
- IV. Checkout and Payment: Once the user has added items to their cart, they can review the order and proceed to checkout. This screen should include payment options, delivery address, and estimated delivery time.
- V. Order Tracking: After placing the order, users can track the status of their order and receive notifications when it is out for delivery.

#### Design 2: Recipe and Meal Planning App

- I. Home Screen: A simple and clean home screen with options to search for recipes, view popular dishes, and browse by category.
- II. Recipe Selection: A list of recipes with options to filter by cuisine, ingredients, preparation time, and ratings. Each recipe should have a short description, ingredients list, and preparation instructions.
- III. Meal Planning: Users can create a meal plan for the week by selecting recipes and adding them to the calendar. The app can also generate a shopping list based on the selected recipes.
- IV. Grocery List: Users can view and edit their grocery list, with options to mark items as purchased or add new items.

**Cooking Mode:** When it's time to cook, users can switch to cooking mode, which will display the recipe in a step-by-step format and allow them to check off each step as they complete it.

**Social Sharing:** Users can share their favorite recipes and meal plans with friends and family via social media or email.

Both the designs offer unique features and experiences to users. Ultimately, the design that is chosen will depend on the specific goals of the project, the target audience, and the resources available for development.

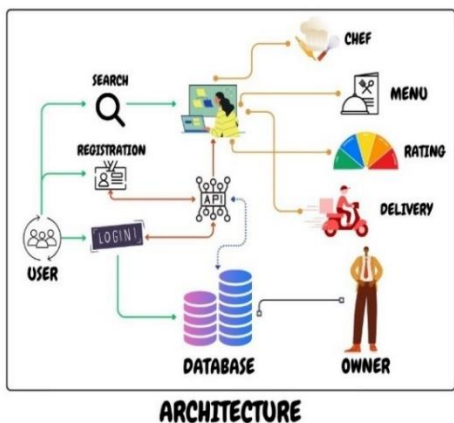
#### V. Order and Delivery App:

##### Pros:

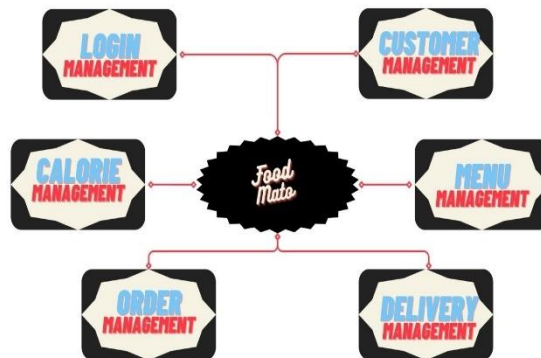
1. Convenience: Order and delivery apps are designed to be quick and convenient for users who want to order food without having to leave their home or office.
2. Revenue Stream: The app can generate revenue by charging a delivery fee or taking a commission on orders from restaurants.
3. Wide Target Audience: This type of app can appeal to a broad target audience, including busy professionals, families, and people who are unable to leave their homes.

##### Cons:

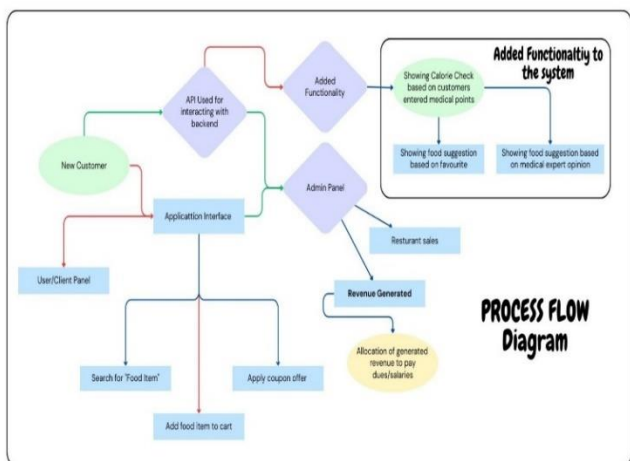
1. High Competition: The market for order and delivery apps is highly competitive, with many established players already operating in the space.
2. Need for Real-time Tracking: These apps need to provide real-time tracking of orders and delivery, which requires a significant investment in technical infrastructure.



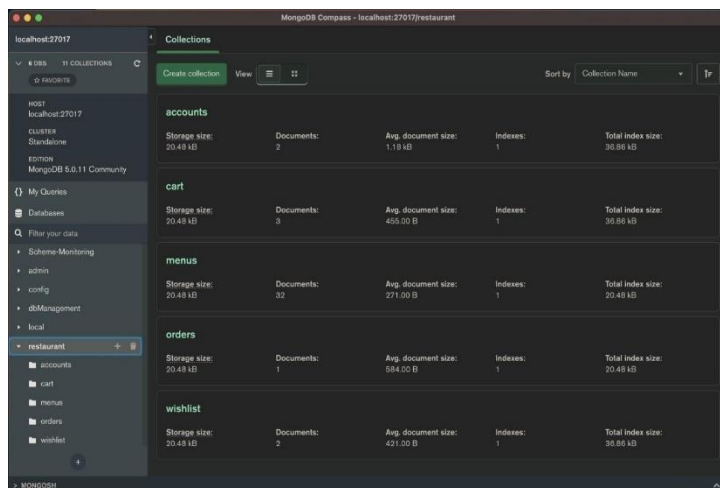
VI. Architecture of this System:



VII. Data Flow Diagram



VIII. Process Flow Diagram:



IX. Application Database:

X. CONCLUSION:

Therefore, conclusion of the proposed system is based on user’s need and is user centered. The system is developed in considering all issues related to all user which are included in this system. Wide range of people can use this if they know how to operate android smart phone. Various issues related to food Service in restaurants will be solved by providing them a fully functional online Ordering system. That is why we designed it a way to help and solve one of the important problems of people and to provide them the best quality service with ease and convenience.

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