



Train food delivery application

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abstract :

— The popularity of food delivery increasing day by day. This work focuses on how to food delivery of the easiest way in the train journey. In the modern-day, almost everyone trying this online food. Otherwise, in this pandemic, the demand for online food delivery is sky scraping. So, how it see when everyone is going to travel in long-distance by train, then if they can be trying healthy and delicious food from a restaurant? In train journeys, travelers cannot get good quality food or the food price is high. By using this android application, travelers can fulfill their food demand. This thesis focuses on the best way to supply food during the trip by rail. Almost all of us try this internet food today. In this research work, there have three types of modules like one application for traveler means customer, one application for riders' means deliveryman and another one is for restaurant authority. In this system customer can get good food, deliveryman gets a job and restaurant can increase their profit. The application needs to be responsive as the application can be accessed through

any device with different sizes of screens. In this work, the firebase database and native android framework are used. Android studio application is used for writing code for the main body of this application. The food delivery apps have simple and easy features. So, it is easy to use for everyone. The new take-way system can make it easier and ensure that maintaining.

to enhance the hotel's guest experience, build trust between managers and guests, and set new standards for business excellence.

Introduction:

This system is basically concerned with the reservation and cancellation of railway tickets to the passengers. The need of this system arose because as is the known fact that India has the largest railway network in the whole of the world and to handle it manually is quite a tough job. We will be able to overcome many of its limitations and will be able to make it more efficient. The handling of data and records for such a vast system is a very complex task if done manually but it can be made much easier if the system is computerized. To be more specific, our system is limited in such a way that a train starting from a particular source will have a single destination. The basic functions being performed by our system are:

1. RESERVATION
2. FARE
3. CANCELATION

These functions will be handled with the help of following sub functions: -
 It reserves and cancels seats for the passenger. It contains information about the trains. It contains information about the passenger. It contains the details of reservation fees, any concessions etc.

Problem Identification:

We identified major points after studies and conclusion are as follow: The problem faced by almost all of us while traveling in the Indian Railways is the poor quality of food served.

- **Limited Menu Variety:** Many train food delivery systems offer a limited selection of menu items, often comprising basic and repetitive options. This lack of variety can lead to monotony and dissatisfaction among passengers, especially those with dietary restrictions or specific culinary preferences.
- **Inconsistent Quality:** Maintaining consistent quality standards poses a significant challenge for train food delivery services. Factors such as varying cooking conditions, transportation logistics, and storage limitations can contribute to fluctuations in the taste, freshness, and overall quality of delivered meals.
- **Timeliness and Reliability:** Delays in food delivery or inconsistent adherence to scheduled delivery times can disrupt passengers' dining experiences and lead to frustration. Ensuring timely and reliable delivery is crucial for meeting customer expectations and optimizing service efficiency.
- **Limited Accessibility:** Accessibility issues, such as the availability of food delivery services across different train routes or the ability to place orders easily, can hinder passengers' access to onboard dining options. Improving accessibility is essential for catering to diverse passenger demographics and maximizing revenue opportunities.
- **Customer Feedback and Communication:** Establishing robust mechanisms for collecting customer feedback and addressing concerns in real-time is crucial for enhancing service quality and customer satisfaction. Effective communication channels can help train food delivery systems promptly

address issues and adapt to evolving passenger preferences.

personnel, and onboard staff will be optimized to ensure timely and efficient service delivery.

Proposal work

Overview of the Train Food Delivery System:

The Train Food Delivery System will leverage modern technology to offer passengers a diverse array of freshly prepared meals delivered directly to their seats during their journey. Through a user-friendly mobile application, passengers can browse through a menu of appetizing options, place orders, and make payments seamlessly. The system will integrate with the existing infrastructure of the railway network, ensuring smooth coordination between the kitchen facilities and onboard staff.

Key Features:

1. **Mobile Application:** A user-friendly mobile app will serve as the primary interface for passengers to access the food delivery service. The app will allow passengers to browse menus, customize orders based on dietary preferences, and track the status of their deliveries in real-time.

2. **Menu Variety:** The system will offer a diverse range of culinary options to cater to the preferences of different passengers, including vegetarian, vegan, gluten-free, and halal choices. The menu will be curated to feature both regional specialties and international cuisines, providing passengers with an enriching dining experience.

3. **Efficient Delivery Mechanism:** Utilizing designated delivery personnel onboard each train, meals will be promptly delivered to passengers' seats at designated intervals. Real-time tracking of orders will ensure accurate delivery times and minimize disruptions to the travel schedule.

4. **Seamless Integration:** The Train Food Delivery System will seamlessly integrate with existing onboard facilities, including kitchen facilities and staff resources. Coordination between the kitchen, delivery

Conclusion:

The implementation of a Train Food Delivery System represents a significant step forward in enhancing the overall travel experience for passengers while maximizing operational efficiency for railway operators. Through innovative technology and a focus on customer-centric solutions, the proposed system aims to revolutionize onboard dining services and set new standards for excellence in rail travel.

Application of the Project:-

1. The "Train Food Delivery Application" offers passengers the convenience of ordering food directly to their seats during train journeys.

2. With this application, travelers can browse through a variety of meal options and place orders seamlessly using their smartphones.

3. The application enhances the onboard dining experience by providing a hassle-free way to enjoy delicious meals without having to leave the comfort of one's seat.

4. Passengers can specify dietary preferences and any special requests, ensuring a personalized dining experience tailored to their needs.

5. Through the "Train Food Delivery Application," railway passengers can enjoy quality meals while saving time and avoiding the inconvenience of standing in long queues at onboard food counters.

Methodology:

Application Methodology for Train Food Delivery Application using Flutter:

1. Conceptualization and Planning:

- Define the scope, objectives, and target audience of the train food delivery application.
- Conduct market research to understand

user preferences, competitors, and market trends.

- Create user personas and user stories to guide the development process.

2. Design Phase:

- Develop wireframes and mockups for the application interface using tools like Adobe XD or Sketch.
- Design a user-friendly interface with intuitive navigation and visually appealing graphics.
- Ensure responsiveness for various screen sizes and devices commonly used by train passengers.

3. Frontend Development:

- Utilize Flutter framework for frontend development to ensure cross-platform compatibility.
- Implement UI elements, including buttons, forms, lists, and navigation components.
- Integrate custom animations and transitions to enhance user experience.

4. Backend Development:

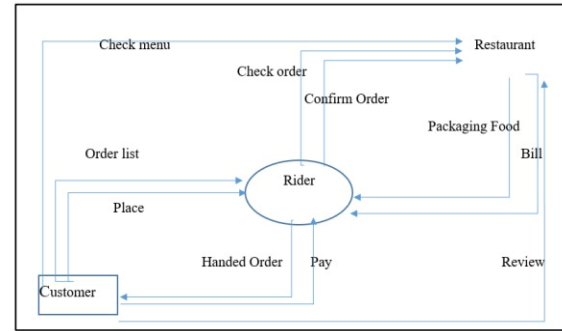
- Choose a backend technology stack, such as Node.js, Django, or Firebase, for server-side development.
- Develop APIs for user authentication, order management, menu retrieval, and payment processing.
- Implement database schema design for storing user profiles, orders, menu items, and transaction records.

5. Integration of Features:

- Implement features like user registration, login, profile management, and order tracking.
- Integrate third-party APIs for location-based services, payment gateways, and push notifications.
- Ensure seamless integration with train scheduling systems for accurate delivery timing.

Result:-

The "train food delivery system" has revolutionized the dining experience for train passengers, offering convenience and variety. Introduced to address the limitations of onboard catering, this system allows passengers to order meals from a diverse menu and have them delivered directly to their seats during the journey.



The results of implementing such a system have been overwhelmingly positive. Passengers appreciate the option to choose from a range of cuisines and dietary preferences, enhancing their overall travel experience. The convenience factor has significantly improved customer satisfaction and comfort during long journeys. Additionally, the system has boosted revenue for train operators, as passengers are more inclined to purchase meals when they have a wider selection available.

Overall, the "train food delivery system" has been a game-changer in the realm of train travel, catering to the evolving needs and preferences of modern passengers while simultaneously benefiting both customers and operators alike.

SOFTWARE, FRAMEWORK & TOOLS:-

Dart is an open-source general-purpose programming language. It is originally developed by Google. Dart is an object-oriented language with C-style syntax. It supports programming concepts like interfaces, classes, unlike other programming languages Dart doesn't support arrays. Dart collections can be used to replicate data structures such as arrays, generics, and optional typing. In this scenario, Flutter – a simple and high performance framework based on Dart language, provides high performance by rendering the UI directly in the operating system's canvas rather than through native framework. Flutter also offers many ready to use widgets (UI) to create a modern application. These widgets are optimized for mobile environment and designing the application using widgets is as simple as designing HTML.

This project includes following users and details about them are as follows:

Student:

Student accesses the FYPS: (Final Year Project Services) The services include uploading Documents via Internet, views the files and can

upload for reviewing and marking on a specified date and time window

Supervisor:

Supervisor accesses the FYPS: Announcements/Reviews and comments via Internet, views the announcements/ reviews and comments and can create, update and delete announcements, reviews and comments. Supervisor can also access the FYPS: Grading, and can grade on a specified date.

Project Coordinator:

Project Coordinator accesses the FYPS: Announcements/Reviews and comments via Internet, views the announcements/ reviews and comments and can create, update and delete announcements/reviews and comments on a specified date. Project Coordinator can also access the FYPS: Grading and can grade on a specified date.

Examination Committee:

Examination Committee accesses the FYPS: Announcements/ Reviews and comments from the Internet, views the announcements/ reviews and comments and can create, update and delete announcements/ reviews and comments on a specified date and time window. Examination Committee can also access the FYPS: Grading and can grade on a specified date and time window.

Future Road map:-

1. Personalized Ordering Experience:

- Develop mobile applications or onboard kiosks that allow passengers to customize their meal orders based on preferences and nutritional requirements.
- Offer recommendations tailored to individual tastes and dietary needs.

2. Real-time Menu Updates:

- Enable real-time menu updates to reflect availability, seasonal offerings, and special promotions.
- Integrate with inventory management systems to ensure accurate and up-to-date menu options.

3. Seamless Payment Solutions:

- Implement cashless payment options such as mobile wallets, contactless cards, and QR code payments for faster and more secure transactions.
- Explore partnerships with fintech companies to offer innovative payment solutions tailored to the railway environment.

4. Enhanced Delivery Logistics:

- Optimize delivery routes and schedules using GPS tracking and real-time traffic data to minimize delays and ensure timely service.
- Explore partnerships with logistics companies to streamline delivery processes and improve efficiency.

5. Continuous Improvement:

- Gather feedback from passengers through surveys, reviews, and social media channels to identify areas for improvement.
- Use data analytics to monitor performance metrics and identify opportunities for optimization and innovation.

6. Expansion of Services:

- Explore opportunities to expand food delivery services beyond onboard dining, such as pre-ordering for pickup at stations or delivery to destination hotels.
- Collaborate with local restaurants and food vendors to offer a diverse range of culinary options to passengers.

Conclusion:

The "train food delivery system" offers a promising solution to enhance passenger experience and efficiency within the realm of railway transportation. The implementation of a train food delivery system facilitates convenience and accessibility for passengers. By enabling them to order meals directly from their seats, it eliminates the need to navigate through crowded train cars or wait in long queues at onboard dining facilities.

The train food delivery system presents a promising opportunity to enhance the overall passenger experience and operational efficiency within railway transportation. By leveraging technology, diversifying menu options, and addressing logistical challenges, railway companies can effectively implement and optimize this innovative service, ultimately contributing to greater customer satisfaction and loyalty in the evolving landscape of rail travel.

Comparison :-

In comparison to previous technologies and papers represents a significant advancement in real-time train food delivery system, offering improved accuracy, comprehensive data

integration, usercentric design.

(OFD) services. *Journal of Retailing and Consumer Services*, 35, 150-162.

The advent of train food delivery systems has revolutionized the onboard dining experience for passengers worldwide. These systems offer a convenient way for travelers to enjoy freshly prepared meals during their journey, eliminating the need to rely solely on onboard dining cars or station vendors. In this comparison, we'll explore the features, benefits, and drawbacks of two prominent train food delivery systems: the Indian Railways e-catering service and Amtrak's onboard dining service in the United States.

References

- [1] Leong, W. H. (2016). *Food Ordering System Using Mobile Phone* (Doctoral dissertation, UTAR).
- [2] Rahman, M. M. "Implementation of Responsive Online Food Ordering Application with Social Media Integration" January 2018 DOI: 10.13140/RG.2.2.32716.36486
- [3] Ricky, M. Y. (2014). Mobile food ordering application using android os platform. In *EPJ Web of Conferences* (Vol. 68, p. 00041). EDP Sciences.
- [4] Yang, F. (2014). Mobile food ordering application.
- [5] Bhargave, A., Jadhav, N., Joshi, A., Oke, P., & Lahane, S. R. (2013). Digital ordering system for restaurant using Android. *International journal of scientific and research publications*, 3(4), 1-7.
- [6] Cai, R., & Leung, X. Y. (2020). Mindset matters in purchasing online food deliveries during the pandemic: The application of construal level and regulatory focus theories. *International Journal of Hospitality Management*, 91, 102677.
- [7] Zhao, Y., & Bacao, F. (2020). What factors determining customer continuingly using food delivery apps during 2019 novel coronavirus pandemic period?. *International journal of hospitality management*, 91, 102683.
- [8] Al Amin, M., Arefin, M. S., Alam, R., Ahammad, T., & Hoque, M. R. (2021). Using Mobile Food Delivery Applications during COVID-19 Pandemic: An Extended Model of Planned Behavior. *Journal of Food Products Marketing*, 1-22.
- [9] Suhartanto, D. (2019). Predicting behavioural intention toward Islamic bank: a multi-group analysis approach. *Journal of Islamic Marketing*.
- [10] Yeo, V. C. S., Goh, S. K., & Rezaei, S. (2017). Consumer experiences, attitude and behavioral intention toward online food delivery

