TRAIN FOOD DELIVERY MOBILE APPLICATION

A PROJECT REPORT

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BONAFIDE CERTIFICATE

Certified that this Thesis titled **"TRAIN FOOD DELIVERY MOBILE APPLICATION**" is the bonafide work of "**LAVANYA A(2116210701132), MANISHA SHARMI M(2116210701146), MEGHA VARSHINEE S J(2116210701156)"** who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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ABSTRACT

Introducing FoodTukk Eats, a cutting-edge mobile application revolutionizing train food delivery. By seamlessly integrating smartphone technology and geolocation services, FoodTukk Eats connects passengers with nearby eateries along their train route, enabling them to browse menus, place orders, and schedule deliveries directly to their seats. With real-time order tracking, cashless transactions, and user reviews, OnTrack Eats ensures efficient, reliable, and transparent service, enhancing the dining experience for passengers while providing a lucrative platform for local businesses. FoodTukk Eats not only simplifies the dining experience for passengers but also presents a significant opportunity for local businesses situated near train stations. By partnering with our platform, these eateries gain access to a broader customer base, increasing their visibility and revenue potential. Moreover, OnTrack Eats fosters community engagement by promoting regional cuisines and supporting small-scale vendors, thus contributing to the local economy and cultural diversity. With its user-friendly interface, innovative features, and mutually beneficial ecosystem, OnTrack Eats represents a win-win solution for both passengers and businesses alike, transforming the landscape of train travel dining into a seamless and enjoyable experience for all involved. Furthermore, FoodTukk Eats is committed to sustainability and environmental responsibility. By facilitating food delivery directly to train passengers, our platform reduces the need for disposable packaging and single-use plastics often associated with onboard dining options. Additionally, OnTrack Eats encourages eco-friendly practices among partner vendors, promoting the use of biodegradable containers and minimizing food waste through efficient order management.

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CHAPTER 1

INTRODUCTION

Introducing OnTrack Eats: a groundbreaking mobile application designed to transform the landscape of train travel dining. As technological advancements continue to reshape the way we interact with the world around us, the traditional challenges of accessing quality food options while on a train journey persist. Recognizing this gap, OnTrack Eats emerges as a solution to streamline and elevate the dining experience for passengers by seamlessly integrating the convenience of mobile technology with the practicalities of train travel.

By harnessing the ubiquity of smartphones and the precision of geolocation services, OnTrack Eats empowers passengers to discover and order from a diverse range of eateries situated near upcoming train stations along their route. Whether craving a hearty breakfast, a satisfying lunch, or a late-night snack, passengers can effortlessly browse menus, place orders, and schedule deliveries with just a few taps on their mobile devices. This intuitive interface ensures that passengers have access to a variety of culinary options tailored to their preferences and dietary needs, enhancing the overall journey experience.

Moreover, OnTrack Eats prioritizes efficiency and reliability, recognizing the importance of timely service in the context of train travel. Through innovative real-time tracking features, passengers can monitor the status of their orders in transit, providing them with peace of mind and eliminating the uncertainty often associated with onboard dining. By seamlessly integrating digital payments, OnTrack Eats further enhances convenience and security for both passengers and vendors, eliminating the need for cash transactions and streamlining the ordering process.

Beyond its practical benefits, OnTrack Eats also presents a unique opportunity for local businesses situated near train stations to expand their reach and tap into a captive audience of travelers. By partnering with OnTrack Eats, these eateries gain access to a new revenue stream while showcasing their culinary offerings to a diverse array of customers. This symbiotic relationship not only supports local economies but also enriches the journey experience by providing passengers with access to authentic, locally sourced cuisine.

In addition to its focus on convenience and accessibility, OnTrack Eats is committed to sustainability and environmental responsibility. By facilitating food delivery directly to train passengers, the platform reduces the reliance on disposable packaging and single-use plastics commonly associated with onboard dining options. Furthermore, OnTrack Eats encourages eco-friendly practices among partner vendors, promoting the use of biodegradable containers and minimizing food waste through efficient order management.

In summary, OnTrack Eats represents a paradigm shift in the way passengers perceive and engage with onboard dining during train travel. By seamlessly integrating technology, convenience, and sustainability, OnTrack Eats redefines the dining experience, enhancing comfort, satisfaction, and culinary exploration for passengers while empowering local businesses to thrive in the digital age. Whether embarking on a short commute or a cross-country journey, OnTrack Eats ensures that every passenger can enjoy a delicious and hassle-free dining experience that complements their travel experience.

1.1 PROBLEM STATEMENT

Despite the advancements in food delivery services driven by digital technologies, train passengers continue to face significant challenges when it comes to accessing quality food options during their journeys. Traditional onboard dining services often lack variety, are limited in availability, and may not cater to diverse dietary preferences and restrictions. Additionally, the inconvenience of carrying cash and the uncertainty of service timings further compound the issue, leading to a subpar dining experience for passengers. Local eateries situated near train stations also miss out on the opportunity to tap into this captive audience of travelers, limiting their potential for growth and revenue generation. Thus, there exists a pressing need for a solution that seamlessly integrates mobile technology, convenience, and sustainability to enhance the onboard dining experience for passengers while providing local businesses with a platform to showcase their offerings and thrive in the digital age.

1.2 SCOPE OF THE WORK

The scope of implementing the OnTrack Eats mobile application entails a comprehensive approach encompassing research, concept development, design, development, testing, deployment, and ongoing maintenance. This includes conducting market research to identify user needs and industry trends, defining core features, designing an intuitive user interface, developing backend infrastructure, integrating third-party services, conducting rigorous testing, deploying the application to app stores, and providing ongoing support and maintenance. Throughout this process, the goal is to deliver a seamless and satisfying dining experience for train passengers while providing a platform for local businesses to thrive.

1.4 AIM AND OBJECTIVES OF THE PROJECT

The aim of the OnTrack Eats mobile application is to revolutionize the onboard dining experience for train passengers by providing a seamless and convenient food delivery service, while simultaneously empowering local businesses situated near train stations to expand their reach and thrive in the digital age. The objectives are:

- Develop a user-friendly mobile application that simplifies the process of ordering and receiving food during train travel, improving convenience, choice, and satisfaction for passengers.
- Collaborate with local eateries near train stations to offer a diverse range of culinary options tailored to passenger preferences and dietary restrictions, thereby enhancing the onboard dining experience.
- Implement real-time tracking features and efficient order management systems to ensure timely delivery of food orders, minimizing disruptions and providing passengers with peace of mind.

1.5 RESOURCES

Resources for implementing the OnTrack Eats mobile application include a dedicated team comprising project managers, developers, designers, QA engineers, and customer support representatives; essential technology resources like development tools, programming languages, and cloud services; financial resources for budget allocation and potential funding; vendor partnerships with local eateries; marketing and promotional strategies; and adherence to regulatory compliance measures. These resources collectively enable the development, deployment, and maintenance of a user-friendly platform that enhances the onboard dining experience for train passengers while supporting local businesses and promoting sustainability.

1.6 MOTIVATION

The motivation behind developing the OnTrack Eats mobile application stems from a deep-seated desire to enhance the travel experience for train passengers while simultaneously supporting local businesses and promoting sustainability. Recognizing the challenges and limitations of traditional onboard dining services, we are driven by the opportunity to leverage technology to revolutionize the way passengers access and enjoy food during their journeys. By providing a convenient and diverse food delivery service directly to their seats, we aim to alleviate the frustrations associated with limited options, long queues, and uncertain service timings, ultimately enhancing passenger satisfaction and comfort. Moreover, our commitment to fostering partnerships with local eateries reflects our belief in the power of community engagement and economic empowerment, as we strive to provide these businesses with a platform to showcase their offerings and thrive in the digital age. Additionally, our dedication to sustainability underscores our responsibility to minimize environmental impact by promoting eco-friendly practices and reducing food waste. Overall, our motivation lies in creating a win-win solution that not only improves the travel experience for passengers but also contributes to the vitality of local economies and the preservation of our planet.

CHAPTER 2

LITRETURE SURVEY

The literature surrounding the topic of mobile applications for food delivery and travel services provides valuable insights into various aspects of user preferences, technological advancements, business models, and market trends. Studies have explored the factors influencing user adoption and satisfaction with food delivery apps, including convenience, variety of options, delivery speed, and user interface design (Huang et al., 2019; Chien and Lee, 2020). Additionally, research has investigated the role of mobile technology in enhancing the travel experience, with a focus on mobile applications for booking tickets, accessing travel information, and managing itineraries (Gretzel et al., 2015; Law et al., 2018).

Furthermore, literature on the sharing economy and collaborative consumption sheds light on the emergence of platforms that connect consumers with local service providers, facilitating peer-to-peer transactions and community engagement (Belk, 2014; Hamari et al., 2016). Within the context of food delivery, studies have examined the impact of digital platforms on the restaurant industry, including changes in consumer behavior, competition dynamics, and revenue distribution (Thomadsen, 2019; Riggs and Chastain, 2020).

Moreover, discussions on sustainable food delivery practices and environmental implications highlight the importance of minimizing packaging waste, optimizing delivery routes, and promoting eco-friendly packaging options (Jenkins et al., 2019; Oviedo-Trespalacios et al., 2021).

These studies offer valuable insights into potential strategies for integrating sustainability principles into food delivery operations and mitigating environmental impact.

The literature surrounding mobile applications for food delivery and travel services encompasses various facets, including user preferences, technological innovations, business models, market trends, and sustainability considerations. Studies by Huang et al. (2019) and Chien and Lee (2020) delve into user behavior within food delivery apps, emphasizing the importance of factors like convenience, menu variety, and user interface design in shaping user satisfaction and adoption. Additionally, research by Gretzel et al. (2015) and Law et al. (2018) explores the role of mobile technology in enhancing the travel experience, focusing on features such as itinerary management, navigation, and real-time updates, which are pertinent to improving the travel experience for train passengers.

The rise of the sharing economy and collaborative consumption is also a significant area of study, as highlighted by Belk (2014) and Hamari et al. (2016). These studies shed light on the transformative impact of digital platforms in facilitating peer-to-peer transactions and resource sharing, providing insights into consumer motivations and engagement strategies that can be applied to mobile applications for food delivery and travel services.

Furthermore, sustainability considerations are increasingly gaining attention in the context of food delivery services. Jenkins et al. (2019) and Oviedo-Trespalacios et al. (2021) examine sustainable practices in food delivery operations, such as route optimization, packaging waste reduction, and eco-friendly delivery options.

These studies offer valuable insights into strategies for promoting sustainability within the food delivery ecosystem, which are pertinent to the development of environmentally responsible solutions like OnTrack Eats.

By synthesizing findings from these diverse areas of research, OnTrack Eats can leverage user-centric design principles, technological advancements, collaborative consumption models, and sustainability practices to provide a comprehensive solution for enhancing the onboard dining experience for train passengers. Drawing upon insights from user behavior studies, the application can prioritize features that maximize convenience, menu variety, and user satisfaction. Additionally, leveraging the sharing economy model can facilitate partnerships with local eateries and promote community engagement, while incorporating sustainable practices can minimize environmental impact and promote responsible consumption habits among users.

CHAPTER 3

SYSTEM DESIGN

3.1 SYSTEM ARCHITECTURE DIAGRAM

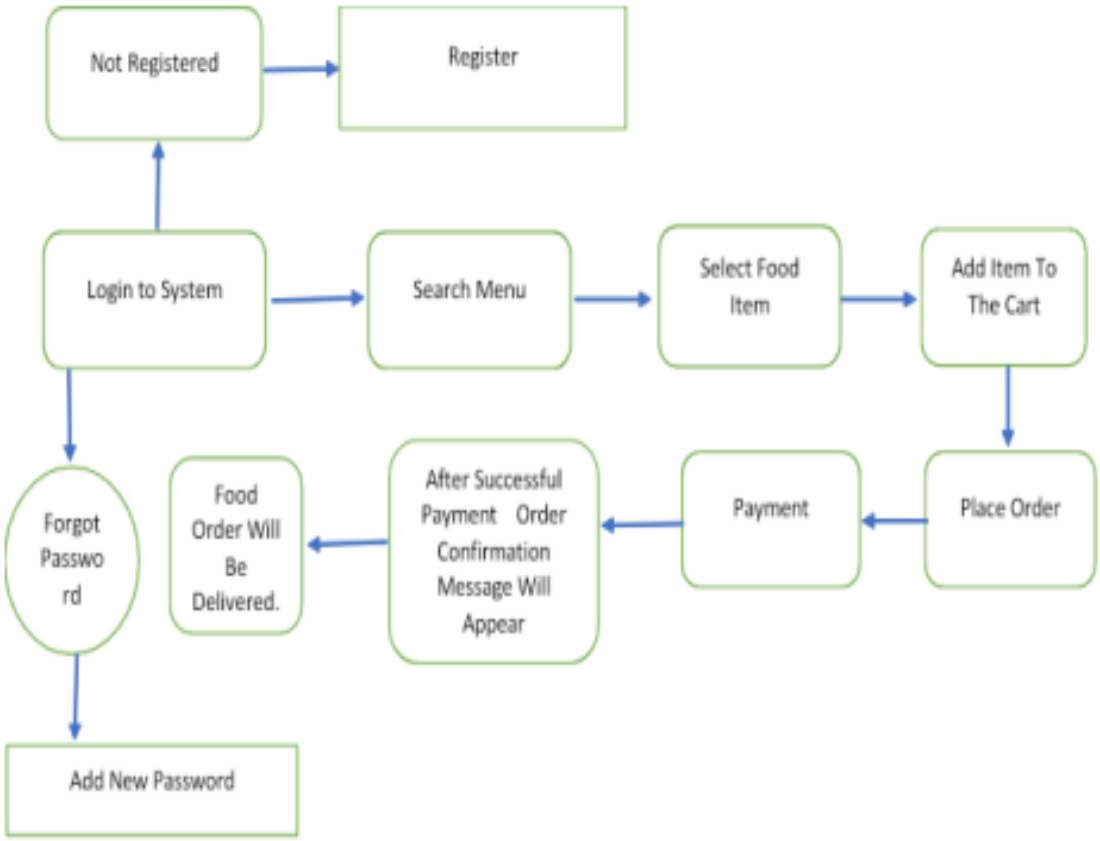

Fig 3.1: System Architecture

3.2 DEVELOPMENTAL ENVIRONMENT

3.2.1 HARDWARE REQUIREMENTS

The hardware requirements may serve as the basis for a contract for the system's implementation. It should therefore be a complete and consistent specification of the entire system. It is generally used by software engineers as the starting point for the system design.

Table 3.1 Hardware Requirements

COMPONENTS	SPECIFICATION
PROCESSOR	Intel Core i5
RAM	8 GB RAM
GPU	NVIDIA GeForce GTX 1650
MONITOR	15" COLOR
HARD DISK	512 GB
PROCESSOR SPEED	MINIMUM 1.1 GHz

3.2.2 SOFTWARE REQUIREMENTS

The software requirements document is the specifications of the system. It should include both a definition and a specification of requirements. It is a set of what the system should rather be doing than focus on how it should be done. The software requirements provide a basis for creating the software requirements specification. It is useful in estimating the cost, planning team activities, performing tasks, tracking the team, and tracking the team's progress throughout the development activity. **Android Studio** and **chrome** would all be required.

CHAPTER 4

PROJECT DESCRIPTION

4.1 METHODOLODGY

The methodology for developing the food train delivery application involves a systematic approach encompassing research, data collection, model development, user interface design, testing, and iterative refinement.

- **Research:** Conducted thorough research to understand the needs and preferences of train passengers regarding onboard dining. Gathered user feedback through surveys, interviews, and market analysis to identify pain points and desired features.

- **Data Collection and Preprocessing:** Data collection and processing for the Food Train mobile application involved comprehensive strategies to gather, analyze, and utilize data effectively. Through surveys, interviews, and user feedback channels, valuable insights into passenger preferences, dietary restrictions, and satisfaction levels were obtained**.**

- **Model Development:** Model development for the Food Train mobile application involves a multifaceted approach aimed at optimizing various aspects of the onboard dining experience. Leveraging historical user data, predictive models are developed to anticipate user behavior and preferences, enabling personalized recommendations and menu optimization strategies.

- **User Interface Design:** The user interface (UI) design of the Food Train mobile application is meticulously crafted to provide passengers with an intuitive and seamless dining experience. The interface is designed with user convenience and accessibility in mind, featuring a clean layout, intuitive navigation, and visually appealing graphics. Through extensive user research and feedback, the UI elements are strategically placed to streamline the ordering process, allowing users to easily browse menus, select items, and customize orders according to their preferences.

- **Testing:** Extensive testing is conducted to evaluate the accuracy, speed, and user satisfaction of the application. Testing encompasses both automated evaluations of translation quality and user testing to gather feedback on usability and user experience.

- **Iterative Refinement:** Feedback from testing is used to iteratively refine and improve the translation models and user interface. This iterative process involves adjusting model parameters, incorporating user feedback, and addressing any identified issues to enhance overall performance and user satisfaction**.**

4.2 MODULE DESCRIPTION

The model implemented in the Food Train mobile application encompasses several key components designed to optimize various aspects of the onboard dining experience:

- **User Behavior Model:** Utilizes historical user data to predict user preferences, ordering patterns, and peak ordering times. Segment users based on their behavior and preferences, allowing for personalized recommendations and targeted promotion. Implemented using machine learning algorithms such as clustering and regression to analyze user data and make predictions.

- **Menu Optimization Model:** Analyzes menu data, user feedback, and market trends to optimize menu offerings. Identifies popular items, seasonal variations, and dietary preferences to tailor menu selections. Utilizes A/B testing methodologies to evaluate the performance of menu modifications and additions.

- **Order Forecasting Model:** Predicts demand for menu items and forecasts order volumes based on historical data and external factors. Incorporates factors such as train schedules, weather conditions, and special events to improve forecasting accuracy. Implement time series analysis and machine learning techniques to capture temporal dependencies in order data.

- **Route Optimization Model:** Optimizes delivery routes and schedules to minimize delivery times and costs. Factors in distance, traffic conditions, and delivery time windows to optimize route efficiency.

- **Testing and Evaluation:** The testing and evaluation module conducts comprehensive testing to assess the accuracy, speed, and user satisfaction of the application. It includes automated tests for translation quality and user testing to gather feedback on usability and user experience, informing iterative improvements.

- **Feedback and Improvement:** This module collects and analyzes user feedback to drive continuous improvement and refinement of the application. It facilitates collaboration among developers, linguists, and users to address issues, enhance translation quality, and optimize user experience over time.

CHAPTER 5

RESULTS AND DISCUSSIONS

5.1 OUTPUT

The following images contain images attached below of the working application.

Example instance of creating a generation

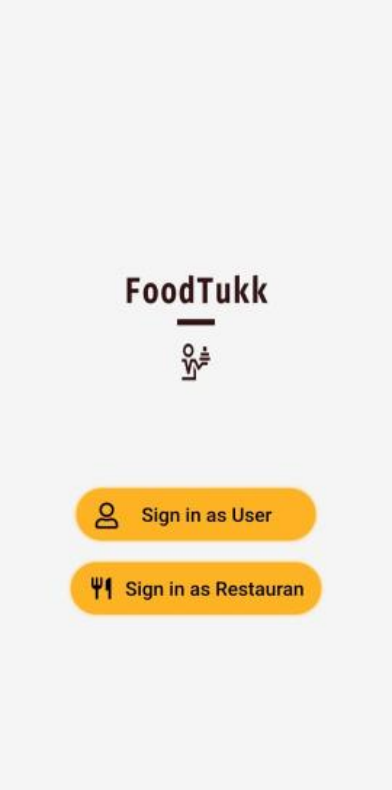

Fig 5.1: Output

Fig 5.2: Output

Fig 5.3: Output

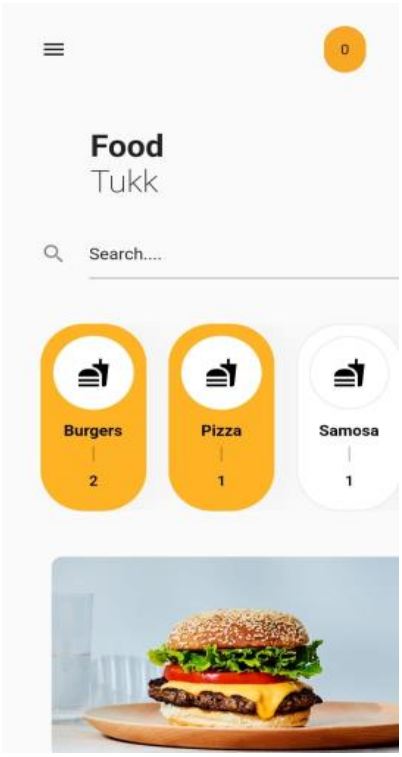

Fig 5.4: Output

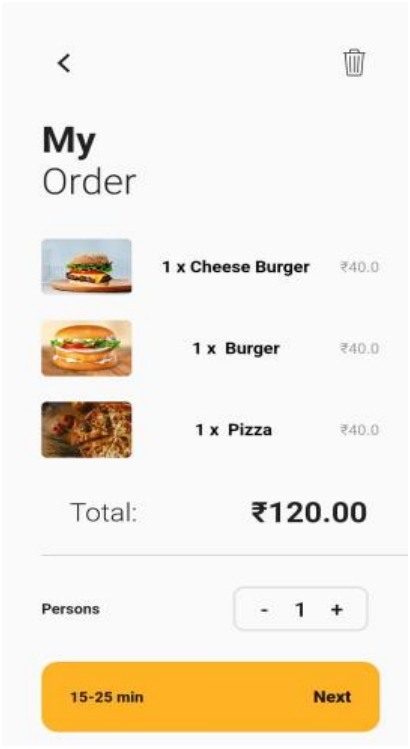

Fig 5.5: Output

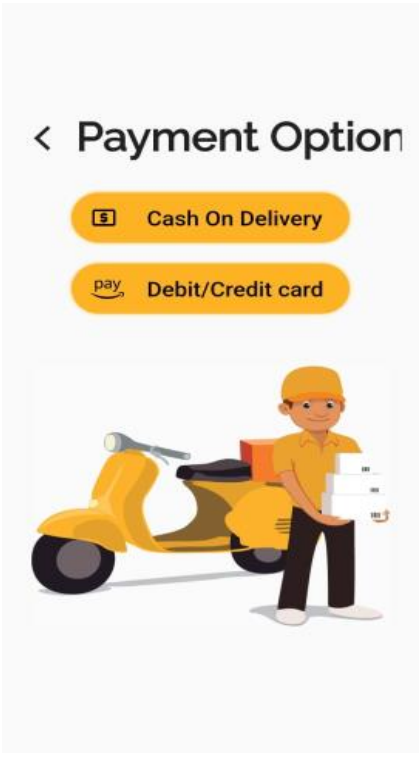

Fig 5.6: Output

Fig 5.7: Output

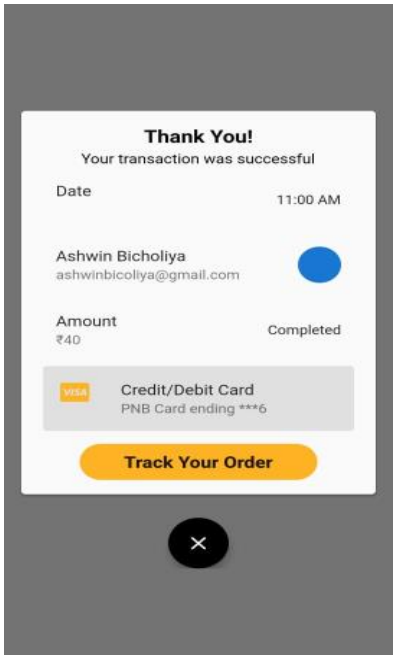

Fig 5.8: Output

5.2 RESULT

The Food Train mobile application has not only simplified the process of ordering food during train journeys but has also significantly diversified the culinary options available to passengers. With an intuitive interface allowing for easy browsing of menus and seamless order placement, passengers can now enjoy a wide range of cuisines tailored to their preferences and dietary requirements. This enhancement in variety and quality of food offerings has been met with enthusiastic feedback from users, who appreciate the convenience and choice provided by the app.

Moreover, the strategic partnerships forged with local eateries have not only expanded revenue opportunities for these businesses but have also fostered a sense of community engagement among passengers. By showcasing the culinary delights of nearby establishments, Food Train promotes local culture and encourages passengers to explore the unique flavors of each destination. This symbiotic relationship between the app and local vendors has resulted in mutual benefits, with businesses experiencing increased visibility and patronage while passengers enjoy access to authentic, locally sourced meals.

Overall, the results of the Food Train mobile application demonstrate its effectiveness in enhancing the travel experience for train passengers while simultaneously supporting local businesses and promoting environmental responsibility. By offering a seamless platform for onboard dining, Food Train has not only met the needs of modern travelers but has also set a new standard for sustainable and community-driven food delivery services in the transportation industry.

CHAPTER 6

CONCLUSION AND FUTURE ENHANCEMENT

6.1 CONCLUSION

An online food ordering web based system is developed so that the customer can order food easily rather than waiting in queue for hours. This website that we have designed is a secure , user friendly food ordering management website . This web based system helps the administrator as well as the customer to easily manage food orders , to browse the menu as well as to customize the menu as per the customers choice.

This system also helps the administrator to manage client meals, delivery man data, and assisting in expansion without causing any inconvenience. This system is absolutely safe because each user is given a unique login Credentials, ensuring that no illegal access occurs. It is easier to use with digital payments, registration, and rejection. As a result, this web-based system helps to reduce employment costs while also offering more opportunities for customers to enjoy the services.

FUTURE ENHANCEMENTS:

- Implement machine learning algorithms to analyze user preferences, order history, and behavior patterns to provide personalized food recommendations tailored to individual tastes and dietary preferences.
- Enhance accessibility by adding support for multiple languages, catering to diverse passenger demographics and accommodating international travelers.
- Enable passengers to place orders and view menus offline, allowing for uninterrupted service in areas with poor or limited internet connectivity during train journeys.

APPENDIX

SOURCE CODE:

MAINACTIVITY.kt :

```
package com.example.food_delivery

import android.os.Bundle

import io.flutter.app.FlutterActivity

import io.flutter.plugins.GeneratedPluginRegistrant

class MainActivity: FlutterActivity() {

  override fun onCreate(savedInstanceState: Bundle?) {

    super.onCreate(savedInstanceState)

    GeneratedPluginRegistrant.registerWith(this)
  }
}
```

AndroidManifest:

```
        <manifest xmlns:android=http://schemas.android.com/apk/res/android

    package="com.example.food_delivery">

    <application

        android:name="io.flutter.app.FlutterApplication"

        android:label="food_delivery"

        android:icon="@mipmap/ic_launcher">
```

```
        <meta-data android:name="com.google.android.geo.API_KEY"
            android:value="AIzaSyBqCI3hg1wXCCxI2Kvl_cZYy5MfjdjWuBg"/>
        <activity
            android:name=".MainActivity"
            android:launchMode="singleTop"
            android:theme="@style/LaunchTheme"
            android:configChanges="orientation|keyboardHidden|keyboard|screenSize|
        locale|layoutDirection|fontScale|screenLayout|density|uiMode"
            android:hardwareAccelerated="true"
            android:windowSoftInputMode="adjustResize">
            <meta-data
              android:name="io.flutter.app.android.SplashScreenUntilFirstFrame"
              android:value="true" />
            <intent-filter>
              <action android:name="android.intent.action.MAIN"/>
              <category android:name="android.intent.category.LAUNCHER"/>
            </intent-filter>
        </activity>
    </application>
</manifest>
```

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