*A project report on*

**ONLINE FUEL DELIVERY SYSTEM**

#### Submitted in partial fulfillment for the award of the degree of

B.TECH

*by*

# PAKALA DISHITHA (21BCE7471) NENAVATH ANJI NAIK (21BCE9972)

# S DHANUSH BHARATH (21BCE9955)



**SCOPE**

April, 2024

**ONLINE FUEL DELIVERY SYSTEM**

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B.TECH CSE2003

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# PAKALA DISHITHA (21BCE7471 ) NENAVATH ANJI NAIK (21BCE9972)

# S DHANUSH BHARATH (21BCE9955)



**SCOPE**

April, 2024

**DECLARATION**

I hereby declare that the project entitled “ONLINE FUEL DELIVERY SYSTEM” submitted by me, for the award of the degree of B.Tech VIT is a record of bonafide work carried out by me under the supervision of Dr. Anurag De.

I further declare that the work reported in this project has not been submitted and will not be submitted, either in part or in full, for the award of any other degree or diploma in this institute or any other institute or university.



**Place:** Amaravati 

**Date:** 26 -04-2024 **Signature of all team members**

## CERTIFICATE

This is to certify that the (REQUIREMENTS ENGINEERING MANAGEMENT) Project titled “**ONLINE FUEL DELIVERY SYSTEM**”

that is being submitted by **P.DISHITHA (21BCE7471) , N. ANJI NAIK**

**(21BCE9972)** and **S DHANUSH BHARATH (21BCE9955)** is in partial

### fulfillment of the requirements for the award of Bachelor of Technology, is a record of bonafide work done under my guidance. The contents of this Project work, in full or in parts, have neither been taken from any other source nor have been submitted to any other Institute or University for award of any degree or diploma and the same is certified.

Dr. ANURAG DE

### Guide

**The report is satisfactory / unsatisfactory**

**ABSTRACT**

The Online Fuel Delivery System Web Application represents a transformative solution to the conventional methods of procuring fuel by introducing a technologically advanced and user-centric platform. With the ever-evolving landscape of digital services, this web application seeks to optimize the fuel delivery process, catering to the diverse needs of individual consumers and businesses alike.

The system offers a seamless user experience beginning with a comprehensive user registration and authentication process, ensuring secure and personalized access. Users can effortlessly navigate through an intuitive interface to select the desired type and quantity of fuel. The platform accommodates various fuels, considering the diverse requirements of both residential and commercial clients. The growing concern and importance of fuel assistance in the transportation sector have led to the development of an online platform called Fuel Delivery Application. This Android platform aims to provide a safe, reliable, and efficient delivery service for gasoline and diesel to users' vehicles, whether they are in urban or rural settings.

The application utilizes the GPS sensor of mobile devices to determine the user’s location and employs a machine-learning algorithm, to find the nearest petrol pump. When a user finds themselves stranded on the road due to a lack of fuel, the Fuel Delivery Application becomes a crucial service to rely on. Instead of worrying about finding a nearby petrol pump, users can simply use the application to request the desired fuel to be delivered to their location. The system ensures that the real cost of the fuel is charged, and additional fuel delivery fees are added accordingly. By combining the convenience of GPS technology with the efficiency of the KNN algorithm, the Fuel Delivery Application addresses the global issue of fuel transportation effectively. It provides a seamless solution

**ACKNOWLEDGEMENT**

### It is my pleasure to express with deep sense of gratitude to Dr.Anurag De

<Designation, Scope, VIT-AP>, for his constant guidance, continual encouragement, understanding; more than all, he taught me patience in my endeavor. My association with him / her is not confined to academics only, but it is a great opportunity on my part of work with an intellectual and expert in the field of <area>.

### I would like to express my gratitude to Chancellor, VPs, VC, and Madhusudan Rao, School Name, for providing with an environment to work in and for his inspiration during the tenure of the course.

In jubilant mood I express ingeniously my whole-hearted thanks to

### <Program char- name>. <Program Chair designation>, all teaching staff and members working as limbs of our university for their not-self-centered enthusiasm coupled with timely encouragements showered on me with zeal, which prompted the acquirement of the requisite knowledge to finalize my course study successfully. I would like to thank my parents for their support. It is indeed a pleasure to thank my friends who persuaded and encouraged me to take up and complete this task. At last but not least, I express my gratitude and appreciation to all those who have helped me directly or indirectly toward the successful completion of this project.

Place: Amaravati **P.Dishitha**

Date:26 -04 -2024 **Nenavanth Anji Naik**

# CONTENTS

[**CONTENTS**](#_gjdgxs) iii

[**CHAPTER 1**](#_1fob9te)

[**INTRODUCTION**](#_3znysh7)

* 1. INTRODUCTION 1
  2. [OVERVIEW OF ONLINE FUEL DELIVERY](#_2et92p0) 3
  3. [CHALLENGES PRESENT IN ONLINE FUEL DELIVERY](#_tyjcwt) 3
  4. [PROJECT STATEMENT](#_3dy6vkm) 5
  5. [OBJECTIVES](#_1t3h5sf) 6
  6. [SCOPE OF THE PROJECT](#_4d34og8) 7

[**CHAPTER 2**](#_2s8eyo1)

[**BACKGROUND**](#_17dp8vu)

* 1. [INTRODUCTION](#_3rdcrjn) 9
  2. [SURVEY ON ONLINE FUEL DELIVERY 9](#_26in1rg)

[**CHAPTER 3**](#_lnxbz9)

[**LIST OF FIGURES**](#_30j0zll)  IX

* 1. USE CASE DIAGRAM 11
  2. [SEQUENCE DIAGRAM](#_35nkun2) 12
  3. [ACTIVITY DIAGRAM](#_1ksv4uv) 13

3.4 OBJECT – CLASS DIAGRAM 14

3.5 DATA- FLOW DIAGRAM 15

3.6 ENTITY RELATION DIAGRAM 15

**CHAPTER 4**

**LIST OF ACRONYMS XII**

4.1 LIST OF ABBREVATIONS. 16

**CHAPTER 5**

## CHAPTERS OF THE REPORT

* 1. PURPOSE 17
  2. COMPARISON OF EXSISTING WORK 17

##### CHAPTER 6

6.1 CONCLUSION 19

6.2 FUTURE WORK 20

##### CHAPTER 7

7.1 REFERENCES 21

##### CHAPTER 8

8.1 APPENDI 1 23

8.2 APPENDIX 2 24

##### Chapter 1

# Introduction

## ONLINE FUEL DELIVERY

In a world driven by convenience and efficiency, online fuel delivery systems have emerged as a transformative solution to traditional refueling methods. By leveraging advanced technology, these platforms empower users to order fuel effortlessly through mobile apps or websites, eliminating the need for time-consuming trips to the gas station. Beyond convenience, online fuel delivery enhances sustainability by optimizing delivery routes and reducing carbon emissions. Businesses benefit from streamlined operations and improved productivity. In essence, online fuel delivery redefines the refueling experience, making it seamless, efficient, and environmentally conscious.

Welcome to the future of mobility, where the gas station comes to you.Fuel delivery startups can supply fuel to consumers safely and conveniently with the help of fuel delivery apps, which are on demand delivery solutions. Customers must first register on the gasoline delivery app in order to get fuel deliveries. After that, they must log in and provide their location and fuel needs. Following that, customers must select a payment option to finish their payment. We concentrate on offering emergency delivery services for gasoline or diesel because these fuels are essential to the operation of our vehicles. People frequently end up stuck on the side of the road because they run out of diesel or gasoline. Their activities and job are frequently delayed as a result of this circumstance. Our goal is to provide our clients with a location-based solution in order to address this problem. Through the use of this service, people can find nearby gas stations or diesel filling stations with ease. The distance between the customer and the gas pump will determine how long it takes to supply gasoline or diesel. Our goal in introducing this location-based solution is to reduce the disruption that shortages of fuel generate and guarantee that.

## ADVANTAGES OF ONLINE FUEL DELIVERY

* + - * **MINIMIZE COST** : Customers may now purchase and use fuel with significant financial savings. Because bulk storage doesn't require any additional infrastructure, consumers can save up to 50% on fuel prices. gasoline delivery services can reduce theft and guarantee gasoline purity with a one-time investment in specialty vehicles and cutting-edge software to track and evaluate fuel loading and delivery.
      * **QUALITY AND QUANTITY :** Consumers can expect trustworthy, high- quality, and quantity gasoline from the finest vendors listed on the app. Furthermore, technical mechanisms such as geo-fencing and digital billing ensure that no pilferage occurs and that the consumer only pays for what he receives.
      * **AVAILABILITY :** Delivery available 24 hours a day, 7 days a week. On- demand fuel delivery takes convenience to new heights. Consumers may now access services at any time and from any location, without the need to invest in storage facilities. Quick delivery times provide a simple and stress-free fuel purchase.
      * **REDUCED CARBON FOOTPRINTS** : This service reduces carbon emissions by reducing the number of journeys to local gas stations.
      * **SAFETY** : Using fuel delivery services has a number of advantages. Diesel is delivered in fire-resistant, safety-compliant bowsers. The staff in charge of gasoline distribution has also been thoroughly educated to deal with difficult scenarios.

## OVERVIEW OF ONLINE FUEL DELIVERY

Fueling vehicles for personal or commercial use is revolutionized by an online filling delivery system. Users can easily order fuel online or through mobile apps by simply selecting the kind, quantity, and delivery location. Time is saved and trips to the petrol station are avoided because to this convenience. Furthermore, through eliminating traffic, cutting emissions, and improving delivery routes, the system improves sustainability. Enhanced productivity and optimized operations are advantageous for businesses. All things considered, the refueling process is redefined by online fuel delivery, which makes it easy, effective, and ecologically friendly.

## CHALLENGES PRESENT IN ONLINE FUEL DELIVERY

* **MODERN INFRASTRUCTURE :** Modern Facilities Fuel Delivery App developers should spend a lot of money on maintenance, hire a staff of experts, and purchase a fleet of specialized vehicles. Bowsers must be constructed in accordance with PESO specifications.
* **ROBUST IT INFRASTRUCTURE:** Applications for online fuel delivery require a strong Technology foundation that can manage your fleet of vehicles, end-user inquiries, and a delivery process. Users need to be able to record significant and relevant data and interact with bug-free technology in an easy-to-use manner with a clear user interface.
* **REPORTING AND ANALYSIS:** Analysis and reporting are crucial components of delivery software. For daily operations, smart technologies that monitor fuel levels, allow geo-fenced delivery to reduce leaks and theft, and sound alarms when they are activated will provide valuable information.
* **UNAUTHORIZED FUEL DELIVERY SOURCES:** Fuel should only be acquired from authorized sources. In spite of the irreversible damage that tainted gasoline does to vehicles and machinery, con artists will be inclined to sell it for much less money. Delivery logistics are also put at risk when safety requirements are disregarded. Customers need to be careful to choose only reputable delivery service companies.
* **REGULATORY APPROVALS:** Adherence to government regulation and standards is crucial for app providers to guarantee a great experience for suppliers and users alike, as well as to steer clear of any legal complications.
* **CONSUMER TRUST :** Overcoming skepticism and building trust among consumers regarding the safety, reliability, and quality of fuel delivered through online platforms is crucial. Addressing concerns about vehicle compatibility and fuel quality assurance is essential.
* **OPERATIONAL LOGISTICS:** Optimizing delivery routes, managing fleet operations, and coordinating schedules to meet fluctuating demand while minimizing delivery times and costs pose logistical challenges. Balancing supply and demand dynamics is crucial for efficient operations.
* **MARKET COMPETITION:** Competing with traditional gas stations and other emerging fuel delivery services requires innovative marketing strategies, competitive pricing, and superior service quality to attract and retain customers.
* **TECHNOLOGICAL CHALLENGES:** Developing and maintaining robust, user-friendly online platforms, mobile apps, and backend systems

that ensure seamless ordering, payment processing, and real-time tracking of deliveries requires continuous investment in technology and expertise.

* **ENVIRONMENTAL IMPACT:** Minimizing the environmental footprint of fuel delivery operations, such as reducing emissions from delivery vehicles and optimizing fuel transportation routes, is essential for sustainability and regulatory compliance.

# PROJECT STATEMENT

In the current fuel procurement landscape, the traditional methods of obtaining fuel often lack efficiency, convenience, and real-time transparency. Consumers and businesses face challenges such as long wait times, limited options for fuel selection, and a lack of visibility into the delivery process. Additionally, fuel suppliers may encounter difficulties in optimizing delivery routes, managing inventory effectively, and providing a seamless customer experience.

# OBJECTIVES

"The main objective of the fuel delivery application is to provide a convenient and efficient platform for users to order and receive fuel at their specified locations." It consume less amount of time when compared to manual paper work through the automated system. The system will take care of all the servicing activity in a quick manner. Data storing is easier.

* **CONVENIENCE:** Enable users to order fuel seamlessly through a mobile app or website, eliminating the need or visits to traditional gas stations and saving

time.

* **EFFICIENCY:** Streamline the fuel procurement process by optimizing delivery routes, reducing waiting times, and offering flexible scheduling options to meet customer needs.
* **ACCESSIBILITY:** Provide access to fuel delivery services in areas with limited access to traditional gas stations or during emergencies, ensuring convenience and reliability for users.
* **SUSTAINABILITY:** Promote environmentally friendly practices by optimizing delivery routes, reducing vehicular congestion, and minimizing emissions associated with traditional fuel procurement methods.
* **SAFETY:** Ensure compliance with regulatory standards and implement measures to safeguard against fuel theft, fraud, and unauthorized access, prioritizing the security of both users and the fuel delivery infrastructure.
* **CUSTOMER SATISFACTION**:Enhance user experience through user- friendly interfaces, transparent pricing, reliable service, and responsive customer support, fostering trust and loyalty among customers.
* **BUSINESS GROWTH:**Expand market reach, increase customer base, and drive revenue growth by offering innovative solutions for evolving needs of individuals and businesses.

# SCOPE OF THE PROJECT

The scope of the Online Fuel Delivery System project encompasses a comprehensive solution that addresses the challenges faced by both consumers and fuel suppliers in the current fuel procurement landscape. The project aims to provide a user-friendly, efficient, and transparent platform, offering a wide range of features and functionalities. The key aspects of the project scope include:

* **USER REGISTRATION AND AUTHENTICATION:**Secure user registration and authentication processes to ensure a trusted user base.
* **FUEL SELECTION AND ORDER PLACEMENT:**User-friendly interfaces for consumers to browse and select different types and quantities of fuel.Streamlined order placement process with options for scheduling deliveries.
* **PAYMENT GATEWAY INTEGRATION:**Integration with secure payment gateways to facilitate seamless and secure online transactions.Support for various payment methods, including credit/debit cards and digital wallets.
* **FUEL SUPPLIER DASHBOARD:**Dedicated dashboards for fuel suppliers to manage incoming orders and optimize delivery routes. Real-time notifications for order processing, dispatch, and inventory management.
* **CUSTOMER SUPPORT:**In-app chat or messaging system for real-time customer support.Frequently Asked Questions (FAQs) section for self-help and common queries.

##### Chapter 2

# BACKGROUND

## INTRODUCTION

Fuel delivery app is a delivery solution that enables fuel delivery start- ups to make safe and hassle-free deliveries of fuel to the customers. For getting fuel deliveries, customers first have to register on the fuel delivery app. Then they have to login, enter their location and fuel requirements. After this, they have to complete their payment by choosing a payment method.

Fuel delivery startups can supply fuel to consumers safely and conveniently with the help of fuel delivery apps, which are on demand delivery solutions. Customers must first register on the gasoline delivery app in order to get fuel deliveries. After that, they must log in and provide their location and fuel needs. Following that, customers must select a payment option to finish their payment.

## SURVEY ON ONLINE FUEL DELIVERY

To gather feedback and insights from users regarding their experiences, preferences, and suggestions for improvement regarding the online fuel delivery application the survey conducted and has listed out key areas.

## KEY AREAS OF INQUIRY:

* + 1. **USER EXPERIENCE:**
* Ease of ordering fuel through the application.
* User interface design and navigation.
* Clarity of instructions and options provided.

##### SERVICE SATISFACTION:

* Reliability and timeliness of fuel deliveries.
* Quality of fuel received.
* Overall satisfaction with the service provided.

## CONVENIENCE AND ACCESSIBILITY:

* Impact on users' convenience compared to traditional refueling methods.
* Accessibility of the service in different locations.
* Flexibility of delivery options and scheduling.

## SECURITY AND TRUST:

* Confidence in the security measures implemented to protect personal and payment information.
* Trust in the reliability and safety of the fuel delivery process.

## ENVIRONMENTAL IMPACT:

* Perception of the environmental benefits of using the online fuel delivery service.
* Willingness to continue using the service based on its environmental impact.

## SUGGESTIONS FOR IMPROVEMENT:

* Areas of the application or service that could be enhanced.
* Additional features or services users would like to see implemented.
* Any concerns or challenges faced while using the application.

## METHODOLOGY:

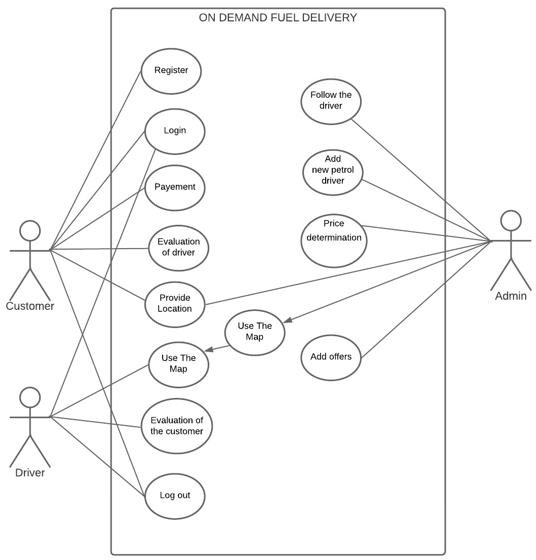
1. Distribution of the survey through the online fuel delivery application's platform.
2. Incentivize participation to encourage a higher response rate.
3. Ensure anonymity and confidentiality of responses to encourage honest feedback.
4. Analyze survey responses to identify trends, areas of improvement, and opportunities for innovation in the online fuel delivery service.

By conducting this survey, we aim to gain valuable insights from users to enhance the online fuel delivery application, improve user satisfaction, and drive continuous innovation in the service provided.

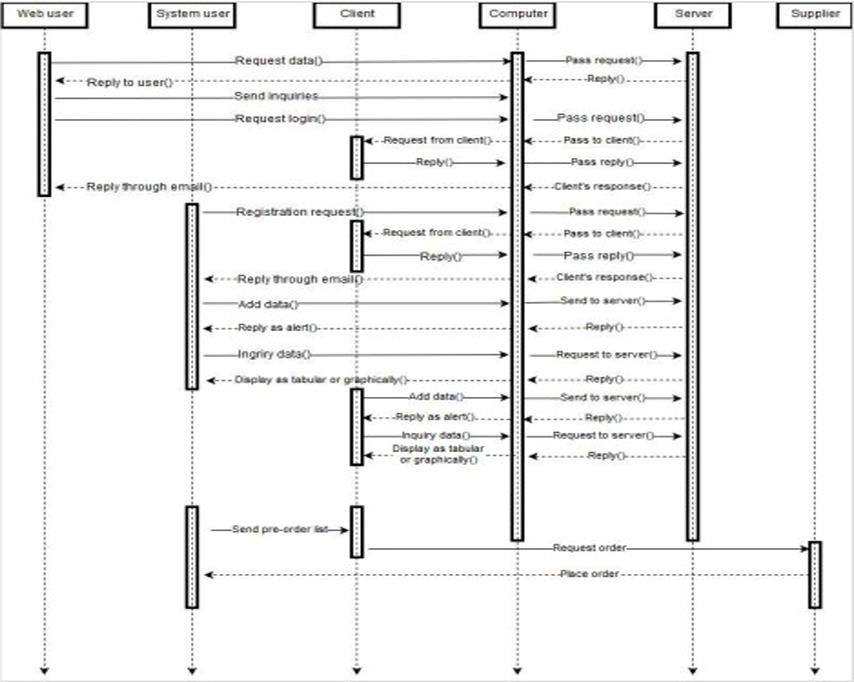
##### Chapter 3

# Introduction

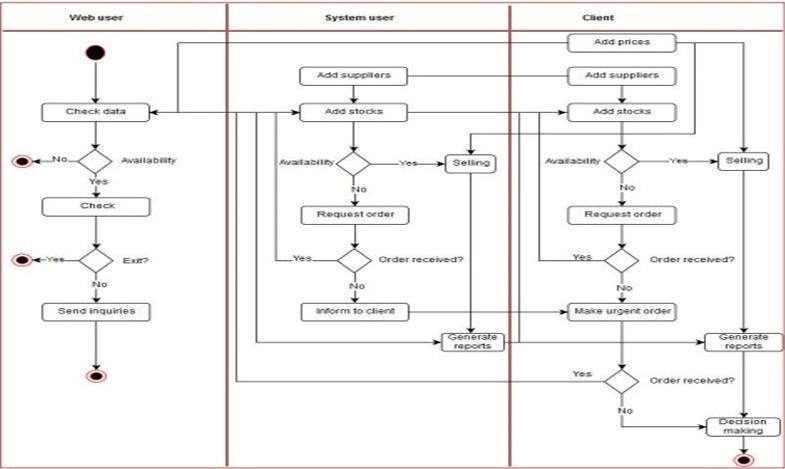
## USE CASE

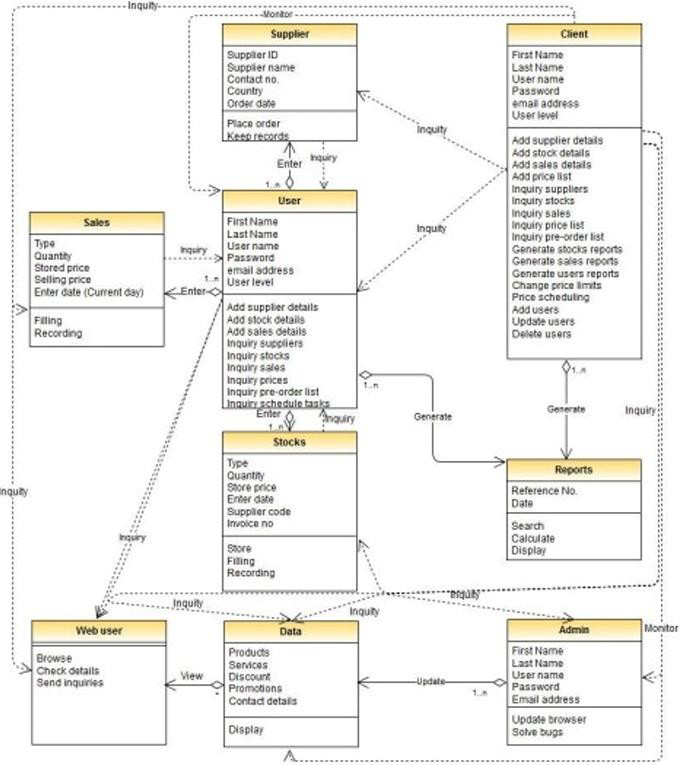


## SEQUENCE DIAGRAM

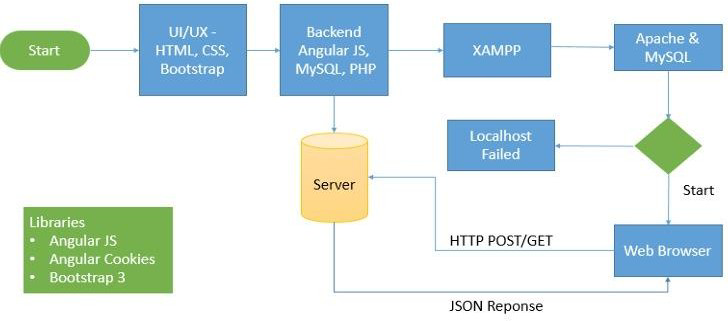


## ACTIVITY DIAGRAM

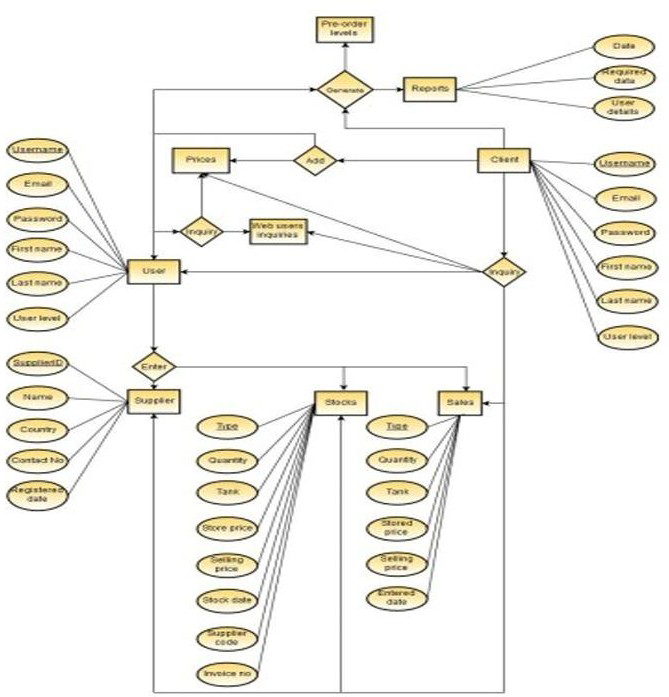


* 1. **OBJECT CLASS DIAGRAM**

## DATA FLOW DIAGRAM



* 1. **ENTITY REALTION DIAGRAM**



**Chapter 4**

# BACKGROUND

## 4.1 LIST OF ABBREVATIONS

|  |  |
| --- | --- |
| **ACRONYM** | **Abbreviation** |
| SRS | Software requirements specification |
| OFDS | Online Fuel delivery System |
| OS | Operating Systems |
| DBMS | Database Management System |

**Chapter 5**

# Introduction

## PURPOSE

Online fuel delivery systems aim to streamline the process of acquiring diesel fuel for businesses. They offer convenience and efficiency by eliminating the need to travel to gas stations and physically fill up containers. This is particularly beneficial for companies that rely on stationary equipment like generators or construction machinery, as it saves them time and resources. The system also promotes safety by utilizing specialized mobile tankers for transportation, reducing the risk of spills or accidents during transit.

## COMPARISON OF EXSISTING WORK

The existing gaps present in works already present in market for fuel delivery system include

* + - **INEFFICIENCY IN ORDERING PROCESS:** Consumers and businesses often face cumbersome procedures for ordering fuel, involving manual processes, limited fuel options, and extended waiting times.
    - **LACK OF REAL-TIME VISIBILITY:** The absence of real-time tracking mechanisms for fuel delivery vehicles leads to uncertainty among consumers regarding the exact location of their orders and estimated delivery times.
    - **Limited Fuel Options:** Traditional methods may not offer a diverse range of fuel options to cater to the specific needs of different consumers and industries.
    - **Inventory Management Challenges:** Fuel suppliers face difficulties in managing inventory efficiently, resulting in potential delays, stock outs, or overstock situations.

Addressing these challenges is crucial for the fuel delivery industry to evolve and meet

the expectations of modern consumers and businesses. The Online Fuel Delivery System aims to bridge these gaps by providing a comprehensive, efficient, and transparent solution that enhances the overall fuel procurement experience for both consumers and suppliers.

**Chapter 6**

# Introduction

## CONCLUSION

In conclusion, a petrol delivery app provides fuel suppliers and consumers with a host of advantages and conveniences. Such an application improves efficiency and user- friendliness by streamlining the fuel supply process via the use of technology and connection. The convenience and time savings that come with a gasoline delivery application benefit the customers. They can request that fuel be delivered straight to the place of their choice, saving them from having to go to an actual fuel station. People and companies with hectic schedules, isolated locations, or restricted access to petrol stations may especially benefit from this. All things considered, a fuel distribution application transforms the ways that fuel is obtained and used. It helps create a more sustainable fuel distribution environment, improves operational efficiency for fuel suppliers, and provides customers with convenience and time savings.

## FUTURE WORK

The future scope of online fuel delivery holds immense potential for revolutionizing the energy distribution landscape. With increasing digitalization and the growing demand for convenience, online fuel delivery services are poised to become integral components of the transportation and energy sectors. As concerns about environmental sustainability continue to rise, there's a pressing need for more efficient fuel distribution methods, and online platforms offer a solution. These platforms can leverage advanced technologies such as IoT (Internet of Things) sensors for real-time monitoring of fuel levels, AI-driven route optimization for efficient delivery, and blockchain for transparent and secure transactions. Moreover, the adoption of electric vehicles (EVs) is on the rise, presenting an opportunity for online fuel delivery services to diversify into EV charging solutions. Additionally, as urbanization increases, traditional gas stations may face space constraints, making online fuel delivery an attractive alternative for consumers. Overall, the future of online fuel delivery looks promising, offering convenience, efficiency, and sustainability to consumers.

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##### APPENDIX 1 OFDS DATABASE

SQLite format 3@ . x2xMtablefuel\_typefuel\_type CREATE TABLE fuel\_type ( id INTEGER NOT NULL,

name VARCHAR(20) NOT NULL, PRIMARY KEY (id)

)6Ctablepaymentpayment CREATE TABLE payment ( id INTEGER NOT NULL,

user\_id INTEGER NOT NULL, order\_id INTEGER NOT NULL,

payment\_method VARCHAR(50) NOT NULL, amount FLOAT NOT NULL,

PRIMARY KEY (id),

FOREIGN KEY(user\_id) REFERENCES user (id), FOREIGN KEY(order\_id) REFERENCES fuel\_order (id)

)l!!#tablefuel\_orderfuel\_order CREATE TABLE fuel\_order ( id INTEGER NOT NULL,

user\_id INTEGER NOT NULL, quantity INTEGER NOT NULL, address VARCHAR(100) NOT NULL, PRIMARY KEY (id),

FOREIGN KEY(user\_id) REFERENCES user (id)

)9tableuseruser CREATE TABLE user ( id INTEGER NOT NULL,

username VARCHAR(50) NOT NULL, password VARCHAR(100) NOT NULL, PRIMARY KEY (id),

UNIQUE (username)

)';indexsqlite\_autoindex\_user\_1user abc,123

##### APPENDIX 2 OFDS APP CODE

from flask import Flask, render\_template, request, redirect, url\_for, session from flask\_sqlalchemy import SQLAlchemy

app = Flask(\_name\_)

app.secret\_key = "key".encode("utf8") # Change this to a secure random key

# Define the database URI app.config['SQLALCHEMY\_DATABASE\_URI'] = 'sqlite:///site.db' app.config['SQLALCHEMY\_TRACK\_MODIFICATIONS'] = False

# Initialize SQLAlchemy db = SQLAlchemy(app)

# Define the User model class User(db.Model):

id = db.Column(db.Integer, primary\_key=True)

username = db.Column(db.String(50), unique=True, nullable=False) password = db.Column(db.String(100), nullable=False)

# Define the FuelOrder model class FuelOrder(db.Model):

id = db.Column(db.Integer, primary\_key=True)

user\_id = db.Column(db.Integer, db.ForeignKey('user.id'), nullable=False) user = db.relationship('User', backref=db.backref('orders', lazy=True)) quantity = db.Column(db.Integer, nullable=False)

address = db.Column(db.String(100), nullable=False)

# Routes @app.route('/') def index():

return render\_template('index.html')

@app.route('/register', methods=['GET', 'POST']) def register():

if request.method == 'POST':

username = request.form['username'] password = request.form['password'] # Check if username already exists

existing\_user = User.query.filter\_by(username=username).first() if existing\_user:

return "Username already exists!"

new\_user = User(username=username, password=password) db.session.add(new\_user)

db.session.commit()

return redirect(url\_for('login')) return render\_template('register.html')

@app.route('/login', methods=['GET', 'POST']) def login():

if request.method == 'POST':

username = request.form['username'] password = request.form['password']

user = User.query.filter\_by(username=username, password=password).first() if user:

session['user\_id'] = user.id

return redirect(url\_for('dashboard')) else:

return "Invalid username or password!"

return render\_template('login.html')

@app.route('/logout') def logout():

session.pop('user\_id', None) return redirect(url\_for('index'))

@app.route('/dashboard') def dashboard():

if 'user\_id' not in session:

return redirect(url\_for('login'))

user = User.query.get(session['user\_id']) orders = user.orders

return render\_template('dashboard.html', user=user, orders=orders)

@app.route('/order', methods=['GET', 'POST']) def order():

if 'user\_id' not in session:

return redirect(url\_for('login')) if request.method == 'POST':

quantity = request.form['quantity'] address = request.form['address'] user\_id = session['user\_id']

new\_order = FuelOrder(user\_id=user\_id, quantity=quantity, address=address) db.session.add(new\_order)

db.session.commit()

return redirect(url\_for('dashboard')) return render\_template('order.html')

if \_name\_ == '\_main\_': with app.app\_context():

db.create\_all() app.run(debug=False)