

# HammelWmshi Proposed System Final Report

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## I. Problem statement

### a. Problem Identification:

HammelWmshi's current system presents a problem of inefficiency and ineffectiveness in their current transportation service management system in which the current process of handling service is slow, error-prone, and lacks transparency. The issue occurs in several crucial areas, causing client dissatisfaction and impeding the business's ability to operate and grow effectively.

### b. Stakeholder Analysis:

- **Owner and Shareholders:** HammelWmshi's owners and shareholders are concerned about managing costs, reducing revenue loss, and enhancing the organization's reputation. The company as a whole along with its founders would be directly affected by the system upgrade as a more efficient and client-centric system would increase profits and clients.
- **Clients:** As registered businesses, customers have a stake in receiving efficient and dependable transportation services. They anticipate more rapid request processing, timely transportation, and clear pricing.
- **HammelWmshi Employees:** Employees involved in the request handling procedure, such as officers in charge of confirmation and vehicle assignment are looking for a streamlined approach that minimizes manual labor and reduces mistakes and workload.
- **Vehicle Drivers:** Drivers are interested in efficient vehicle allocation and route planning for improved productivity and minimized dispensable travel.
- **Management:** They are responsible for making strategic decisions about the project, including its scope, budget, and timeline. Their decisions can significantly influence the project's direction. They would be interested in the project's progress and outcomes, as the new system could affect the company's efficiency and profitability.
- **IT Team:** The people who will be responsible for maintaining the system after it's implemented. They would need to understand the system thoroughly and might need training, so their early involvement is crucial.
- **Suppliers:** They are responsible for providing vehicles to HammelWmshi company. However, they won't be interacting with the system as they will only be on a contract with the company and will have no role in the transportation process.

### c. Impact Analysis:

The inefficiency of HammelWmshi's current transportation system could have an impact on stakeholders as well as the company itself. Here is a breakdown of these possible effects:

- The slow processing of requests, calculation inaccuracy, and poor visibility in the current system causes client dissatisfaction, leading them to transfer to better companies in the market.
- Additional workload, like unnecessary travel and manual processing of requests and calculations can lead to the employees' frustration, decreased productivity, and potential burnout.
- The current system's limitations hinder data-driven decisions-making and efficient resource allocation, like suggesting alternative routes for vehicles to avoid traffic congestion, leading to inefficiencies and reduced sustainability.
- Inaccurate calculations, additional charges from under or over charging clients, client attrition, and operational inefficiency caused by potential incorrect vehicle assignment and excess fuel consumption leads to significant financial and revenue losses.

**To address these challenges, a comprehensive solution is proposed:**

## **II. Proposal**

### **a. Introduction:**

In the age of technological advancement, many tasks are being automated, saving time and reducing workload. The current system of HammelWmshi does not include modern technology integration making it outdated compared to other companies in the market. The proposed software solution aims to address the limitations and inefficiency of the current system. It will improve HammelWmshi's local transportation system by implementing a desktop software application that manages and automate transportation tasks and processes. This project aims to enhance customer experience, streamline processes, improve service quality, and facilitate tasks for employees.

### **b. Problem Statement:**

Addressing HammelWmshi's system inefficiency problem is crucial due to several reasons:

- By addressing the issues of slow processing of requests, miscalculations, and poor visibility, the system will ensure client satisfaction, improved client retention, and positive relationships with clients.
- Operational efficiency is hampered by current system inefficiencies like manual data entry and external charge calculation. The new system will streamline its operations, reduce manual errors, and optimize resource allocation.
- The efficiency of the proposed software system will help maintain and enhance Hammelwmshi's reputation and competitiveness in the market protecting market share, business prospect, and preserving and attracting clients.

- The implementation of an accurate, automated system improves financial performance and strengthens client trust.
- HammelWmshi embracing technological advancements and enhancing service quality, facilitates adapting to evolving transportation industry trends and client needs for future growth.

**c. Objectives:**

The objectives that the new proposed system aims to achieve are the following:

- Change from using MS Access into a more optimized desktop application to facilitate putting requests and optimize resource allocation
- Improve request processing speed to ensure timely responses and system confirmation
- Automate manual tasks to reduce unnecessary workload
- Implement a new transportation management system to automate route planning and optimize driver schedule
- Improve financial transparency by implementing an integrated accounting system that ensures accurate and timely billing and financial reporting
- Enhance visibility and customer service by implementing a customer portal that allows clients to track their shipments, request support, and provide feedback

**d. Scope:**

The proposed software project for HammelWmshi's local transportation services involves implementing a desktop application with three portals: client, officer, and driver. This new system allows clients to log in, request services, and receive real-time updates, featuring automated distance calculations, optimized vehicle assignment, and real-time vehicle tracking. It allows officers to manage requests, and drivers to work in an organized way.

However, it excludes hardware upgrades and extensive client/employee training. The project operates within defined constraints, including budget, timeline, data security, regulatory compliance, and compatibility with existing technology such as compatibility with existing hardware. In addition, the system will still depend on confirmation and constant updates from drivers, officers, and clients for the running of requests.

**e. Methodology:**

An agile development methodology is to be adopted as it allows for flexibility, adaptability, and continuous improvement throughout the software development lifecycle.

**Tools:**

- Backend Development: NodeJs (Javascript)
- Frontend Development: HTML/CSS
- Version Control: Git
- Testing and Quality Assurance: Jest
- Database: MySQL
- Development Environment: VS Code

The following section outlines the system request that encapsulates our proposed solution.

### **III. System Request**

**a. Summary:**

The proposed software project aims to enhance the current transportation services. It will replace the existing slow and error-prone system with an efficient application-based workflow that will completely automate registration, service requests, and calculations. Its benefits include faster processing, accurate calculations, improved transparency, and improved operational efficiency. Overall, the project will greatly enhance the client experience and streamline the entire process.

**b. Business Case:**

After the system is implemented, it will affect the business in several aspects, benefiting HammelWmshi with the following:

- By improving efficiency, HammelWmshi can reduce operational costs associated with manual labor, excess fuel consumption, and vehicle maintenance which contribute directly to the ROI.
- Satisfied clients are more likely to remain loyal, resulting in increased customer lifetime value (CLV) and a higher ROI. Additionally, positive client feedback can attract new clients, further boosting ROI.
- By offering superior services, HammelWmshi can gain a competitive edge, capture a larger market share leading to increased revenue and ROI.
- Data-driven decisions can lead to improved operational efficiency, cost reduction, and revenue growth. These outcomes directly contribute to ROI by increasing profitability.
- Expanding the client base and market reach can result in increased revenue streams, further boosting ROI.

**c. Project Scope:**

The proposed system targets HammelWmshi's weak points to improve and enhance the service quality and efficiency of its system.

- The proposed system will replace the existing MS Access system with an application-based system that allows clients to log in, place, and confirm service requests online, without the need for phone, email, or fax communication.
- The proposed system will automate the process of assigning the appropriate vehicle category, searching for the nearest free vehicle, and computing the transportation and extra charges, based on the type, weight, volume, and urgency of the goods, and the distance between the locations.

- The proposed system will eliminate the errors and delays caused by manual input and calculation of data and will enhance the accuracy and efficiency of the service delivery.
- The proposed system will also require all vehicles to keep their location accessible by the system, either by using the drivers' phones or equipping every vehicle with a GPS, to enable the optimal allocation of resources and minimize the extra charges.
- The proposed system will provide a variety of reports for bills, vehicles, clients, and requests, between two dates, to facilitate the management and evaluation of the company's performance.

**d. System Requirements:**

**Functional Requirements:**

- **User Registration:** The system should allow clients to register by providing necessary information such as name, contact person, phone, email, company license, and address.
- **Service Request Creation:** The system allows clients to create service requests by specifying departure and destination addresses, type of goods, and weight and volume.
- **Real-Time Updates:** The system should provide real-time updates to clients regarding the status of their service requests, including vehicle assignment and estimated time of arrival.
- **Vehicle Assignment:** The system should assign the appropriate vehicle category based on the type, weight, and volume of goods specified in the service request.
- **Charge Calculation:** The system should calculate charges based on the distance traveled by the vehicle and the weight of the goods transported. Additional travel from and to HammelWmshi's premises is considered as extra charge based on distance.
- **Data Management:** The system should return bills, vehicle, client, and request reports between 2 dates.

**Non-Functional Requirements:**

- **Performance:** The system should respond quickly to user interactions and handle many concurrent service requests efficiently.
- **Usability:** The system should have a user-friendly interface that simple to use and comprehend, requiring minimal training for clients.
- **Reliability:** The system should be available and operational 24/7, with minimal downtime for maintenance or upgrades.
- **Security:** The system should protect client data and ensure secure communication between clients and the system.
- **Scalability:** The system should be able to handle an increasing number of clients and service requests without significant performance degradation.



**Compatibility:** The system should be compatible with different web browsers and devices to accommodate a wide range of clients.

**As we delve into the implementation section, it is better to first understand the interactions between the users and the proposed system; let's look at the following use case diagram.**

## **IV. Use Case Diagram**

### **a. Actors:**

**Client:** The client is the primary actor that interacts with the system. He is the one that initiates interaction within the system by placing a transportation service request.

**Driver:** The driver operates the vehicle, updates the vehicle location, deliver the goods of clients.

**Officer:** The officer manages the service requests. They confirm the client's registration and request.

**Manager:** The manager from the management oversees the entire system. He receives reports from the system and signs them.

- The driver, officer, and manager are considered secondary actors within the system because they all depend on the client's interaction within the system.
- Note: The suppliers are not included in the system design since they will not be interacting with the system directly, but they will only be providing vehicles too HammelWmshi. The vehicles will be inserted into the database separately.

### **b. Use Cases:**

**Register:** The client registers for the service.

**Log In:** The client logs into the system.

**Place request:** The client fills in a form with necessary information to place a request.

**Fill Request Form:** The clients should fill a form with necessary information to process a request for transportation of goods.

**Confirm Request:** The client confirms their service request, and the officer also confirms the client's request.

**Confirm client request:** After placing a request, the client should confirm it to start the processing of the request.

**Cancel Request:** After filling in the request form and before confirming it, the client can still cancel the request.

**Generate Reports:** The system generates reports like client, service request, vehicle, and bill report based on the information entered by the user and functions within the system like assigning the vehicle.

**Confirm bill report:** The client confirms the bill when making a payment.

**Update Vehicle Location:** The driver updates the location of the vehicle.

**Notify of Successful Delivery:** The driver notifies the system when the delivery is successful.

**Make Payment:** The client makes the payment for the service.

**Sign Reports** The manager receives the reports from the system and signs them.

**Track delivery:** The client can track the location of his good from departure to destination.

**Locate Vehicle:** This use-case updates the progress of the delivery based on the current location provided by the assigned vehicle.

### c. Use Case Relationships:

**Login and register:** The user must first register to acquire a unique id that is used for the login process login case depends on the registration case.

**Place request and login:** The user can only place a request after he logs in since they don't share the same behavior and functionality it is a dependent relationship.

**Confirm request and place request:** In order to confirm a request, the user must first place a request. The confirmation process totally relies on the placing request process and is enabled once the user places his request, sharing the same process functionality the confirm request case includes the place request case.

**Confirm client request and place request:** The officer only confirms the client's request after the client himself confirms his request it includes the confirm request case.

**Confirm request and cancel request:** The client has the option to cancel his request instead of confirming it. It is an optional case to extend the relationship.

**Generate reports and place request:** The report depends on the clients' request (destination, location, type of goods in the request...). These reports will be made based on the client's request the generated reports depend on the placed request.

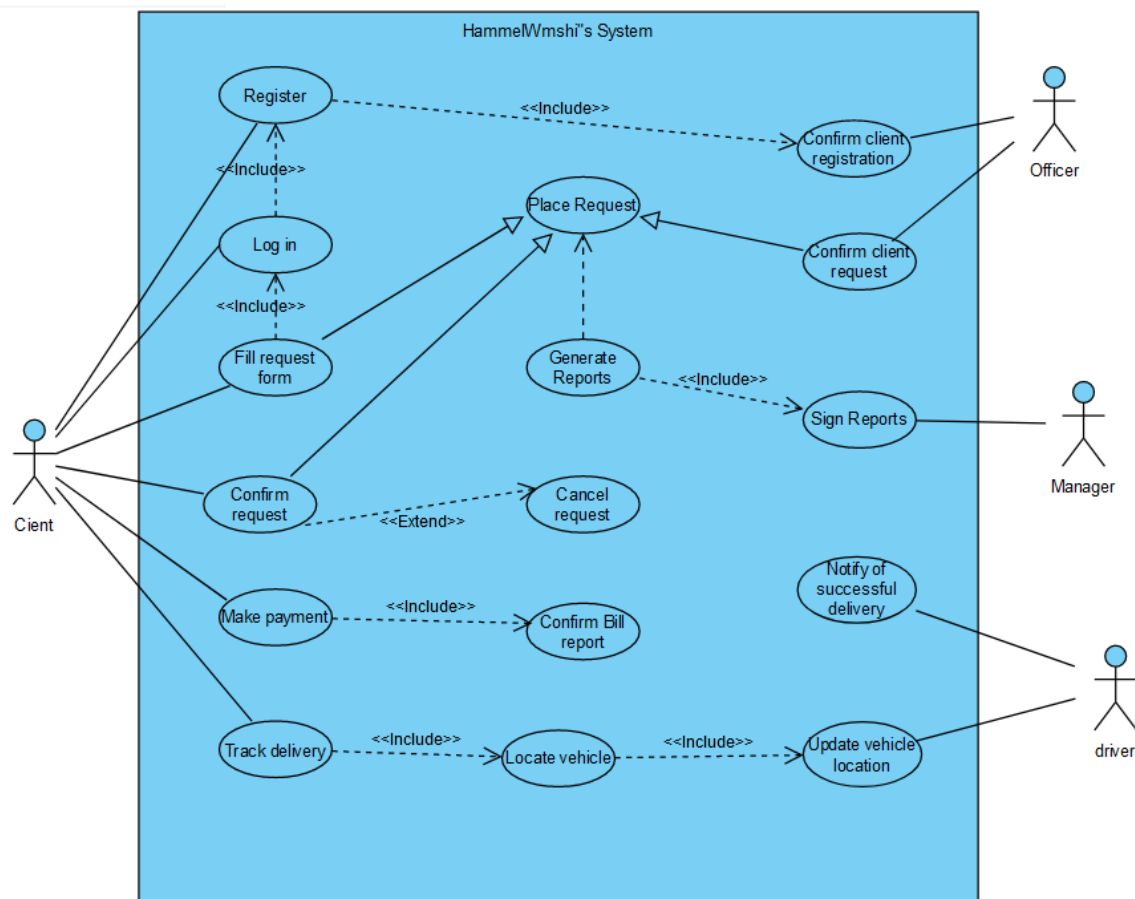
**Make payment and confirm billing:** The payment of the bill depends on the confirmation. However, they don't share the same behavior (payment processing and confirmation process respectively make payment depends on bill confirmation).

**Track vehicle and locate vehicle:** The client can track the vehicle only when the vehicle is located the tracking case includes locate vehicle case.

**Locate vehicle and update vehicle:** The vehicle is located once the driver updates the vehicle's location via a tracking service the location of the vehicle includes the case of updating a vehicle done by the driver.

**Sign report and generate reports** (bill report, vehicle report, client report, request report): Generating reports involves common functionalities like retrieving data, processing information, and formatting. The include relationship encapsulates these common steps which allows for better reusability.

#### d. Use-Case Diagram



Having seen the user-system interactions, let's delve deeper into the system's processes and data flow with the help of Data Flow Diagrams.

## V. Data Flow Diagrams

### a. Project Setup

#### External Entities:

- **Officers:** A staff member of HammelWmshi who confirms requests, assigns vehicles, and generates reports.
- **Drivers:** A staff member of HammelWmshi who operates a vehicle and delivers goods to clients.
- **Client:** A registered business that requests transportation services from HammelWmshi through the website.
- **Management:** HammelWmshi's management that keeps record of the reports coming out of the system.

#### Data Stores:

- **Client Database:** A table in the database that stores information about clients, such as name, contact person, phone, email, company license, address, and ID.
- **Vehicle Database:** A table in the database that stores information about vehicles, such as category, location, status, and driver.
- **Request Database:** A table in the database that stores information about requests, such as serial number, departure and destination addresses, type of goods, weight and volume, urgency, category of vehicle, charges, and confirmation.
- **Report Database:** A database that stores reports generated by the system after they have been signed by the management.

#### Major Processes:

- **Register client:** registers student into the website
- **Log in:** logs in a client into his account on the website
- **Place request:** places a service request made by the client
- **Decide vehicle category:** decides the category of the vehicle for a request based on the weight, type, and volume of goods
- **Update location:** updates the current location of a vehicle in the system
- **Notify vehicle to move:** notifies the decided vehicle to depart to departure address

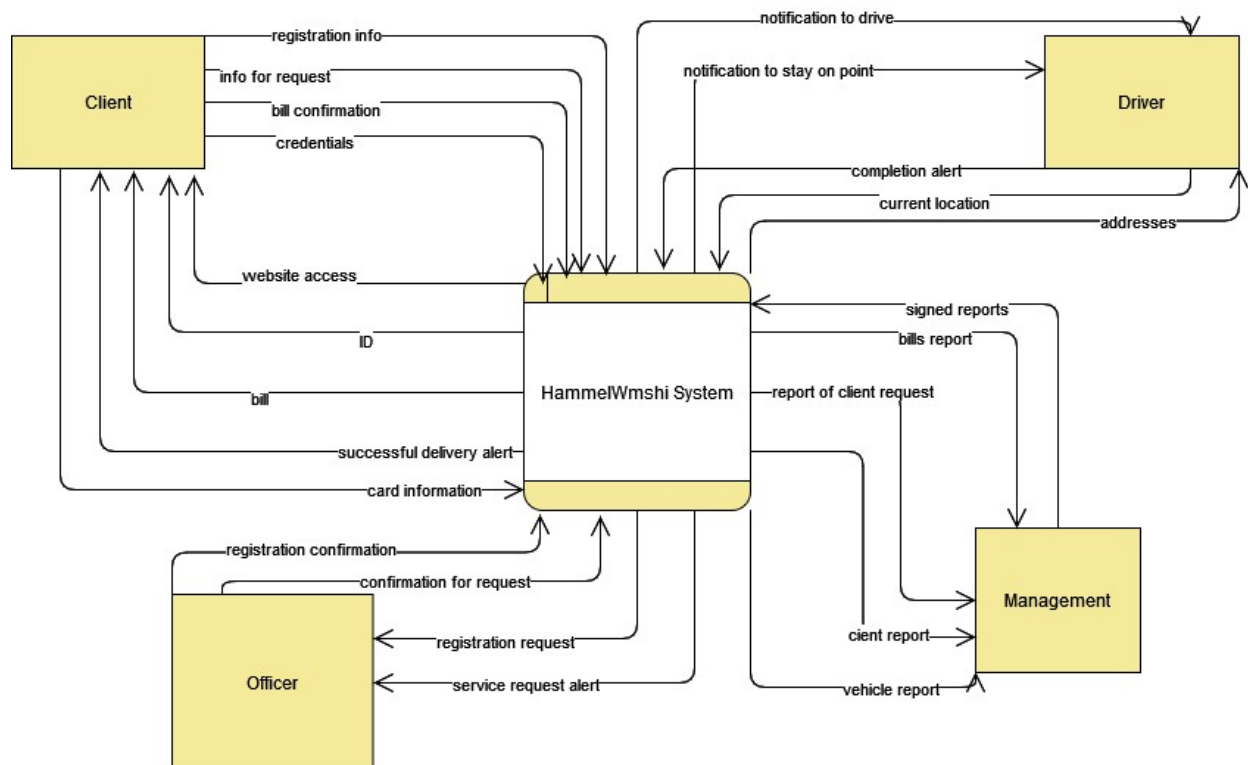
- **Compute distance:** computes the distance from departure to destination address as well as the extra distance traveled by the vehicle
- **Calculate total charges:** computes total costs for the delivery of the goods based on distance traveled
- **Notify of successful delivery:** notifies the system and the client of the successful delivery of the goods
- **Process payment:** processes and validates payment for a request
- **Generate bill report:** generates bill receipt for the client and the management
- **Generate client report:** generates a report of client information for the management
- **Generate vehicle report:** generates a report of a vehicle's information for the management
- **Generate request report:** generates a report of a request's information made by a client for the management

#### Data Flows:

- **Credentials:** required credentials for the user to login to the app
- **Website access:** access to the app
- **Registration information:** information required to register into HammelWmshi
- **ID:** ID that is provided to the client when registering into the app
- **Registration confirmation:** confirmation from an officer for client registration
- **Client info:** all client information taken from client through registration
- **Info of service request:** all information required to place a service request
- **Goods characteristics:** the volume, type, and weight of goods to be transported
- **Vehicle category:** the category of the decided vehicle
- **Nearest vehicle:** vehicle with the nearest location to the destination
- **Current location:** current location of the vehicle sent from the GPS installed in each vehicle
- **Notification to stay on point:** notification sent to the driver to stay in his current place
- **Service request alert:** an alert sent to an officer for a new client registration
- **Confirmation for request:** acceptance of an officer to a client registration
- **Bill report:** a bill receipt sent to the client for his request and sent to the management for storing
- **Bill confirmation:** confirmation of bill of request made by a client
- **Notification to drive:** notification sent to the driver to depart for goods delivery
- **Completion alert:** an alert made by the driver for successful delivery of the goods
- **Vehicle availability alert:** alert that sets status of the vehicle to available, under the assumption that there is an attribute for the availability of a vehicle in the vehicle table of the database

- **Location info:** includes the departure address of client and destination address
- **Distance from departure to destination address**
- **Extra distance:** distance from HammelWmshi premises to departure address and from destination address to HammelWmshi premises
- **Total charges:** total charges as a sum of extra charges from extra distance traveled and charges from delivery costs
- **Client report:** report of client information
- **Vehicle information:** all information about a certain vehicle
- **Vehicle report:** a report of a certain vehicle sent to the management for storing
- **Report of client request:** a report of a request done by a client
- **Successful delivery alert:** a notification sent to the client notifying him of the successful delivery of his goods
- **Card information:** payment details given by the client
- **Payment confirmation:** confirmation by the client for his payment

## b. Context Diagram



### Description:

The above diagram is a context diagram of HammelWmshi's transportation system. It describes the direct interaction between the external entities and the system itself and excludes any internal

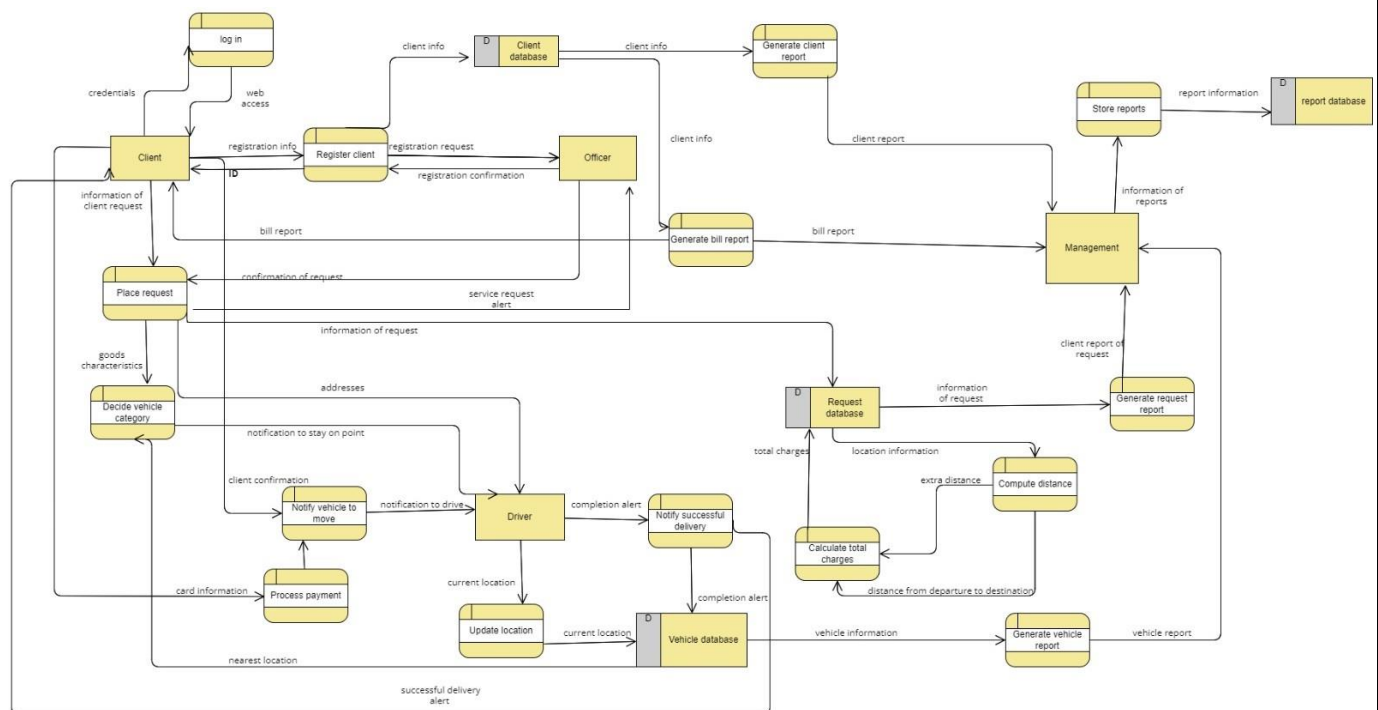
processes by the system. There are four main entities interacting with the system: client, driver, officer, and management. The client interacts with the system through logging in in which he provides his credentials, and the system allows or denies his access to the application. The client also provides registration information to the system when signing in and receives his id from the system for log in. When placing a request, the client will provide the necessary request information and receive confirmation with a bill or disapproval from the system. Finally, the user also interacts with the system through paying for a service through confirming his bill and providing his card information.

The officer interacts with the system only through accepting or denying registration and services requests.

The driver interacts with the system through updating his vehicle's location constantly and his availability status, in addition to alerting the system in case of successful delivery. He also receives notifications from the system updating him on the request he has taken.

Finally, the management interacts with the system by signing the reports received from the system.

### c. Level 0 DFD



### Description:

The above level 0 DFD first describes two situations, If the user is already registered the system will allow him access to the application using his unique id and password. Otherwise, the user

must sign up for a new account, provide the necessary information (email, phone number...), wait for the officer's confirmation of his registration, and then receive his unique id.

After logging in, the user will be able to place a request providing all necessary information, and before processing the service request, the request information is sent to the officer in which he will check it and either confirm or deny based on rules given by the company.

Then after the request is approved, the system assigns the right vehicle category to carry out this request based on the type, weight, and volume of goods given by the client. Once the vehicle category is decided, the system will map out the nearest available vehicle using the GPS installed in each vehicle that is constantly updating the vehicles' location, assuming that the vehicles' table in the database has an attribute that updates the vehicles' availability status (either "Available" or "Unavailable").

The driver of said vehicle will be notified to stay on point until the client confirms his service bill and makes the payment.

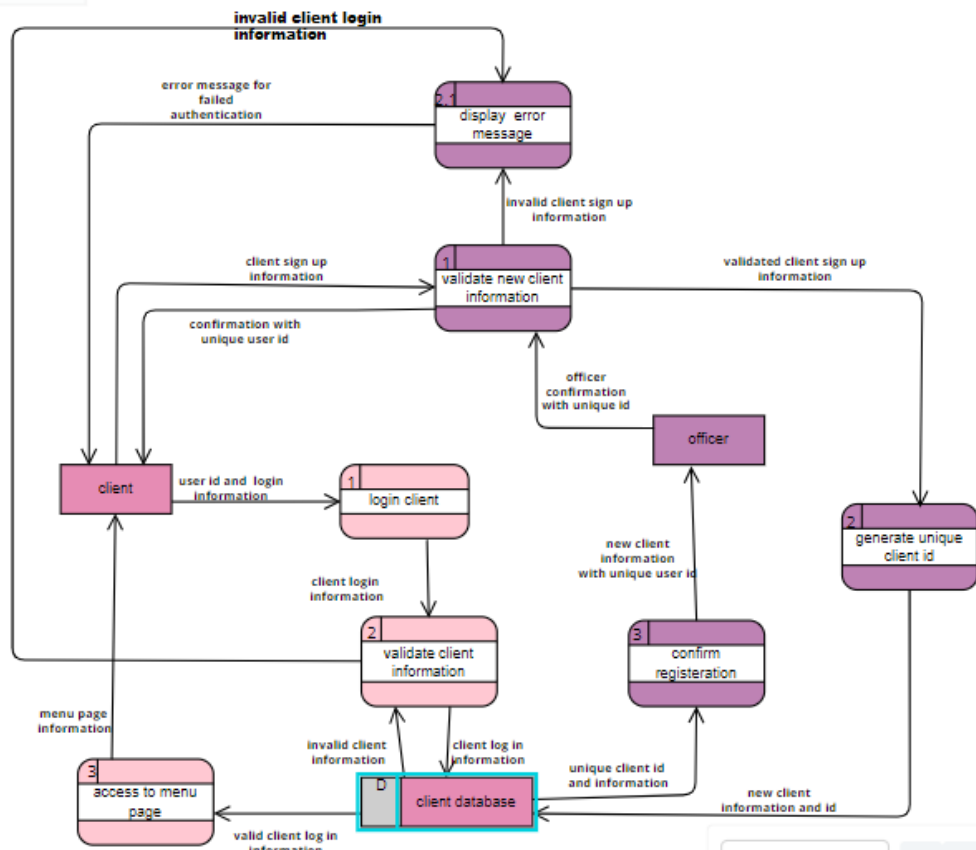
Once the driver has been notified, the system will compute total charges based on distance from departure and destination address given by the client and the extra distance to be travelled by the assigned vehicle. A bill is generated and sent to the client who has to confirm and make payment for the driver to move with the request.

After the driver completes his delivery, he notifies the system and his status will be set to "Available", and ready to take another request.

After the completion of each request the management will be sent the request and bill report to be signed before storing them in the database. A vehicle report is sent with each purchase of a vehicle and a monthly report. A client report is also sent to the management to be signed.



#### d. Level 1 DFD



#### Description:

The above DFD is a level 1 diagram of the login and registration processes of the client into the HammelWmshi application. If the user is a new client he'll first be required to sign up for a new account. This new client information is first validated by the system. If the information is valid and accepted by the officer, the system will generate a unique client ID, send it to him, and store the user's information in the client database, in which the user receives via a confirmation message from the officer with his ID. Otherwise, an error message of invalidity will be displayed.

If the user already has an account, then he must provide his login information which will also be validated through the system (by referencing the client database via his user ID and password). If authentication is successful, the user will have access to the menu page, else, an error message of bad authentication will be displayed.

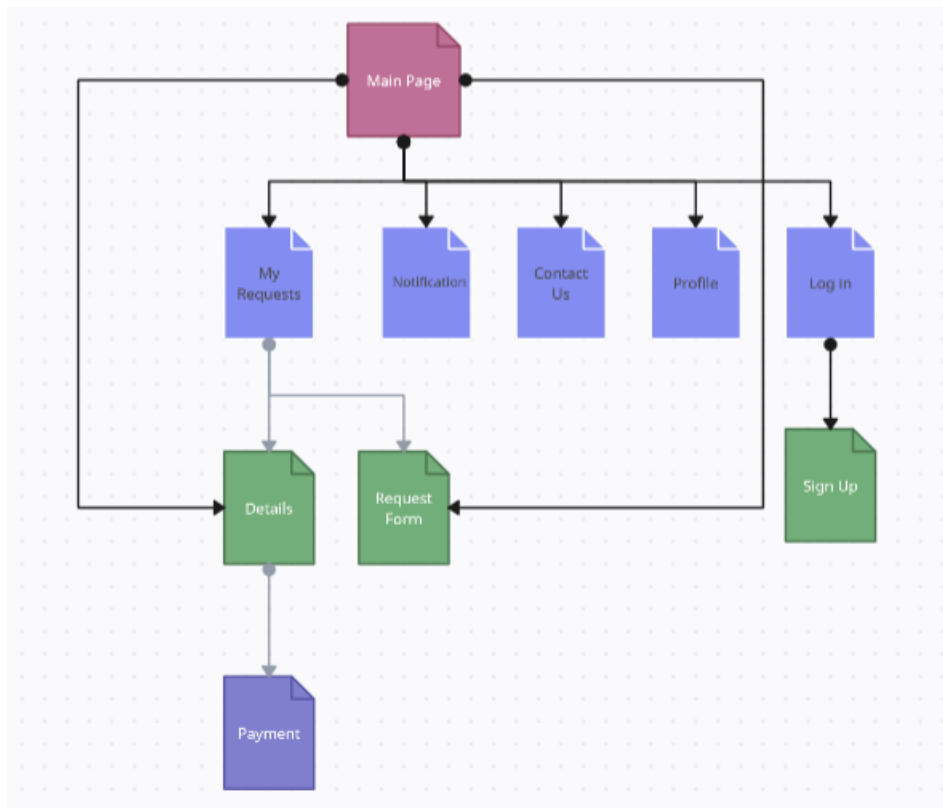
Following the detailed analysis of user-system interactions and data flow, the next section of this report presents the Application Design. This section provides a visual representation of the proposed system, including snapshots of the officer, client, and driver portals. These snapshots serve as a tangible manifestation of the previously discussed interactions and data flows, offering a glimpse into the user experience and interface design of the proposed system.

## VI. Application Design

### a. Context

The new system of HammelWmshi is going to be designed as an application that is compatible with all kinds of devices. The following design shows the views on a desktop and from the client, officer and driver's side. It includes a portal for employees(officers) to manage client registration and requests confirmation, and another portal for drivers to manage requests. The system is also linked to the GPSs of the drivers where addresses get installed directly when requests are accepted. This report will mainly focus on the client experience of HammelWmshi's application.

### b. Sitemap



### Summary:

This sitemap describes how the user can traverse through the application. The first page the client views when entering the application is the home page which is the main page. The client can read the general information about HammelWmshi and, if interested, he signs up. Without logging in the client can only traverse the home page and will be redirected to the log in page at any attempt to view another page(except the “Learn More” page which displays extra information about the offered services). If the client has an account, he can log in directly, else will have to go to the sign-up page that is accessed through the log in page. After logging in, the client can view the “My Requests” page that contains all requests made and in progress and allows the client to submit a new request. He can view notifications sent by the system, check his profile, and contact the HammelWmshi team through the “Contact Us” page. From the “My Requests” page, the client can view a details page that shows detailed information the request selected. From the details page, he can also go to the payment page to settle service requests payment. Additionally, the client can directly access the request form page and the request details page from the home page.

### **c. Design Choices**

The design of HammelWmshi’s application implements modern design principles. It employs a minimalistic color scheme, predominantly white, signifying simplicity and cleanliness, and orange, symbolizing creativity and enthusiasm. It can convey a sense of friendliness and approachability. For a transportation service, orange may represent a dynamic and vibrant approach, signaling efficiency and promptness in service. A little bit of red is also used in which it adds a touch of sophistication to the brand. In the context of transportation, dark red can evoke feelings of trust and dependability. Orange and dark red, when used together, can create a visually striking and high-contrast design. This helps in drawing attention to important elements on the website and effectively accentuates key elements and guides the user’s eye through the interface.

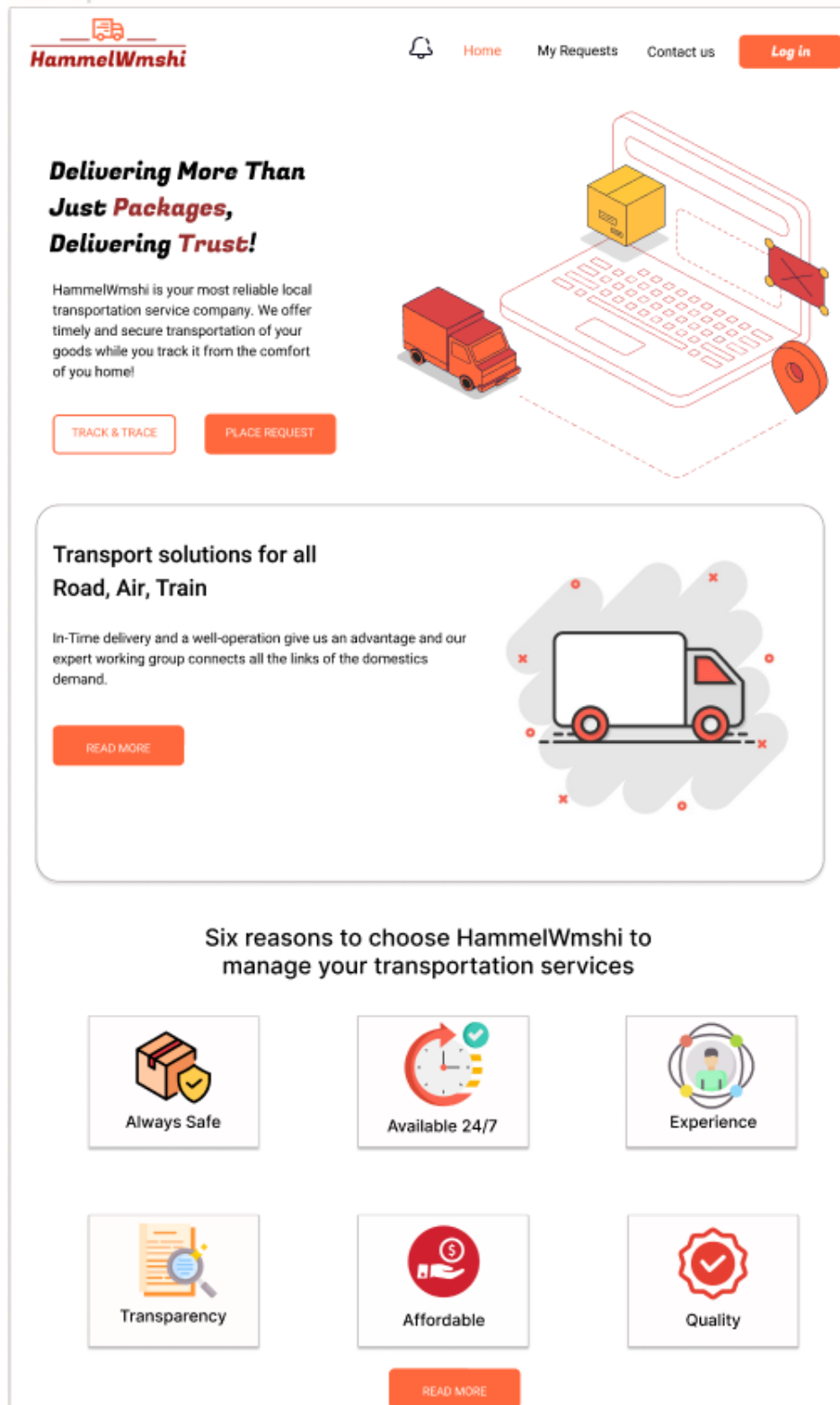
The aesthetic is modern and clean, emphasizing functionality. The use of flat design elements, simple icons, and ample white space contribute to this aesthetic, which is often associated with improved usability and a focus on content.

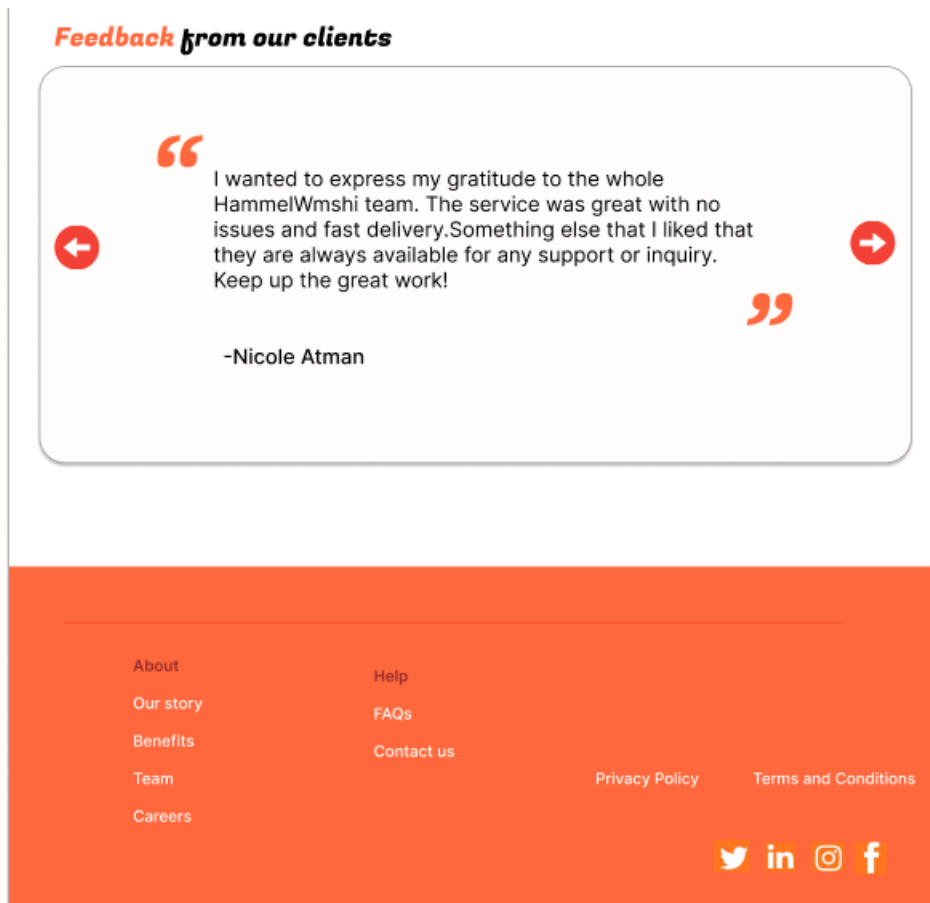
Despite the simplicity of the design, it doesn’t compromise on delivering a comprehensive user experience. Information is clearly organized, making the interface intuitive to navigate. Clear section headings and status indicators for requests ensure quick comprehension of content.

The typography choice of sans-serif fonts enhances readability on digital screens, with the font size and line spacing optimized for the same. The addition of simple, stylized illustrations adds a visual element to the design without overwhelming the user with excessive visual information.

## d. Views

### Home Page:





### Description:

In the main homepage, the header shows four main buttons:

- The “Log In” prompts the user to either register if he is a new client or log in to an existing account.
- The “My Request” which shows a list of personal individual requests made by the user.
- The “Contact Us” button for clients who are facing any issues and need any further assistance or inquiries.
- The notification page represented by a bell that displays all notifications from the system to the client.

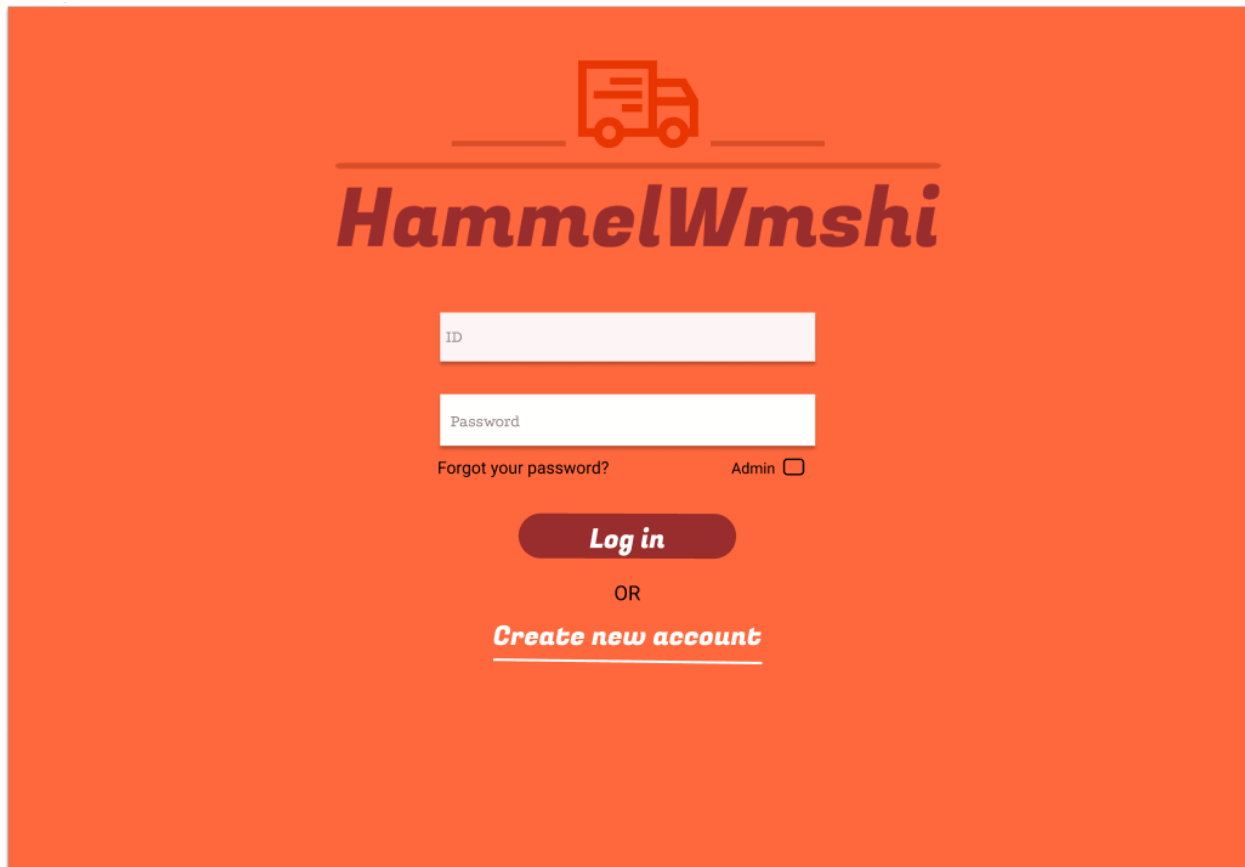
This page provides a brief overview of HammelWmshi and why clients should choose them instead of their competitors. The main page attracts new clients and existing ones, encouraging them to place a request and facilitates tracking their requests. The two buttons “track and trace” and “place request” allow the user to either place a new request or track an existing in progress one. However, if the user is not yet registered, all buttons will transfer them first to the register page for them to log in or sign up.

The read more buttons directs curious users to a page containing more information about the HammelWmshi company and services. The feedback box allows users to scan over some feedback given by registered clients who expressed their honest opinions and experiences with

HammelWmshi to strengthen new clients' trust in the company. It shows HammelWmshi's transparency and honesty, highlighting their great customer service and trustworthiness.

Finally, at the bottom of the page the user can go over more pages to read privacy policies, get help, or access extra information about the company's team, story, and job offering.

### Log in Page:

A mockup of a login page for HammelWmshi. The page has a solid orange background. At the top center is a white icon of a delivery truck. Below the icon is the company name "HammelWmshi" in a large, bold, white serif font. Underneath the name are two white input fields: the first is labeled "ID" and the second is labeled "Password". Below the "ID" field is a link that says "Forgot your password?". To the right of the "Password" field is a checkbox labeled "Admin". Below these fields is a large, rounded orange button with the text "Log in" in white. Underneath the button is the word "OR" in white. At the bottom is a link that says "Create new account" in white, which is underlined.

The above page is the log in page where the client logs into the website using his unique id and password. In case the client forgets his password, he could press on “Forgot your password?” that will direct him to a help page with instructions on what to do. If the user does not have an account, he/she should press on “Create new Account” that will direct him to the sign-up page. Admins like drivers and officers will check the admin box and log in normally, and they have special Ids.

## Sign Up Page:





# HammelWmshi

**Create an Account** Already a member? 

<small>First name</small> <input type="text" value="John"/>	<small>Last name</small> <input type="text" value="Smit"/>
<small>Company</small> <input type="text" value="John Smith"/>	<small>Work email</small> <input type="text" value="John Smith"/>
<small>city, Address (optional)</small> <input type="text"/>	<small>Phone number (optional)</small> <input type="text" value="+000"/> <input type="text" value="00 000 000"/>
<small>Password</small> <input type="password"/>	<small>Confirm password</small> <input type="password"/>

☐ I agree with [terms and conditions](#).

Note: an ID will be sent to you via email for you to use in the login process

**Register**

This page allows a new client to create/ register for an account. He is required to fill in personal information such as their full name, company name, work email/email, address phone number and password. After he fills out this form, he has to agree to HammelWmshi's terms and conditions. Once he clicks the "register" button a unique ID will be sent to the client via email and will be displayed in the notification page which is mentioned in this page as a note.

## Profile Page:

**HammelWmshi**

Home My Requests Contact us

### Profile

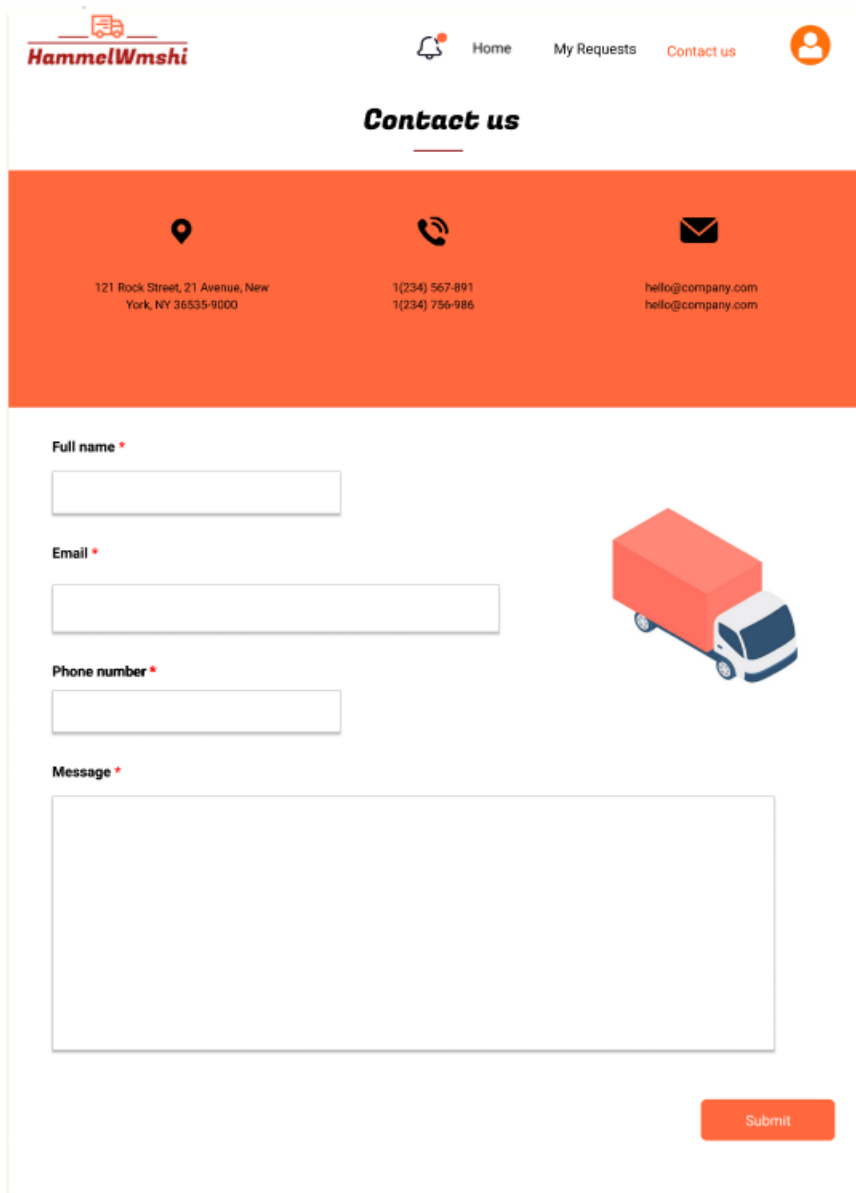
Full Name	John Smith	Email	johnsmith@outlook.com	
Address	132 Rock Street, 21 Avenue, NY 3562-3836		Phone Number	1(123)7649-986
Company	Amazon	ID	J346539	

Log out Edit Profile

This is the client's profile page where he/she can view all personal information entered in when registering. The client can edit some information like address, company, and email but not the ID. He/she can also log out of their account through this page.



## Contact Us Page:





The image shows a web page for 'HammelWmshi' with a contact form. The header includes the company logo, a notification bell, and navigation links for 'Home', 'My Requests', and 'Contact us'. The main heading is 'Contact us'. Below this is an orange banner with three contact options: location (121 Rock Street, 21 Avenue, New York, NY 36535-9000), phone (1(234) 567-891, 1(234) 756-986), and email (hello@company.com). To the right of the form is a 3D illustration of a red delivery truck. The form fields are labeled 'Full name \*', 'Email \*', 'Phone number \*', and 'Message \*'. A 'Submit' button is at the bottom right.


**HammelWmshi**

Home My Requests **Contact us**

### Contact us

  
121 Rock Street, 21 Avenue, New  
York, NY 36535-9000

  
1(234) 567-891  
1(234) 756-986

  
hello@company.com  
hello@company.com

Full name \*

Email \*

Phone number \*

Message \*

Submit

This page provides the client with all necessary information to contact HammelWmshi's team. If the client faces any issue or has any inquiry, he/she can either fill in the form or use any of the contact information provided.

## Request Form Page:

**HammelWmshi**

Home My Requests Contact us

### Request Form

**Note:** Your request will appear in "My Requests" page under "In Progress". Once it is approved, please make the payment within 10 mins or else your request is cancelled. Check your email or click on the bell icon for notifications about your request.

Location Of Departure:

Location Of Destination:

Enter the Type of Goods:

Weight Of Goods:

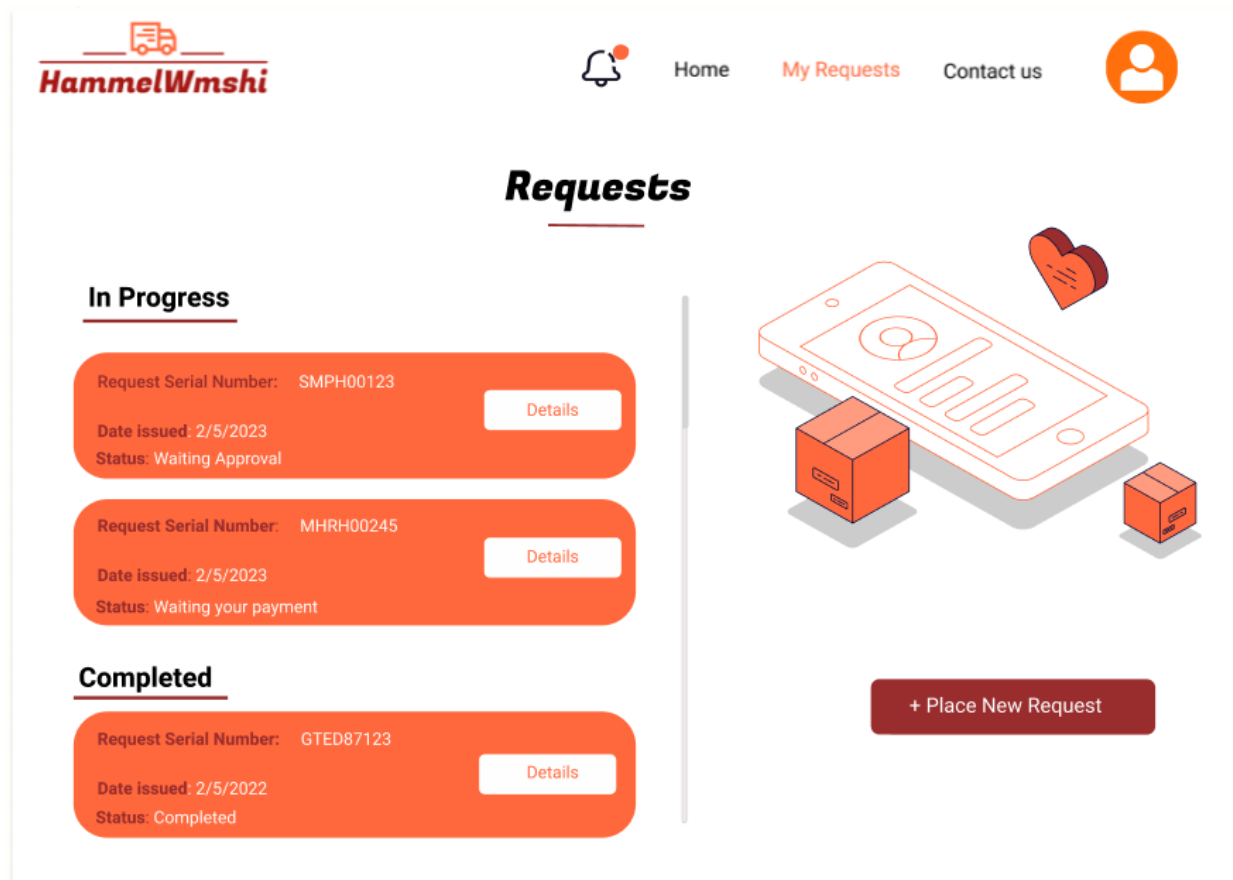
Volume Of Goods:

Additional information/description:

**Send Request**

The above page is where the users can place a request. The users are required to fill in the following information: location of departure and destination and the type, weight and volume of goods and any additional description or information (for example stating if the item to be shipped is fragile etc..). The user then presses the "Send Request" button and awaits the approval of his request by the HammelWmshi officer. A note is provided at the top of the form giving the user more context into how the processing of a request is done and what he should do. Additionally, all notifications will appear both on the application and will be sent via email.


## My Requests Page:





The “My Requests” page allows users to view information on both completed requests and in progress requests which are either pending and awaiting the officer’s confirmation or awaiting payment by the client or are yet to be delivered. The main information provided for each request are request serial number that is generated by the system and unique to each request, date issued showing the date of issuing this request, and status showing if the request is awaiting approval or payment or already completed.

The “Details” button directs the user to another page with detailed information about the specific request, and the “Place New Request” button directs the user to the “Request Form” page to submit a new request.

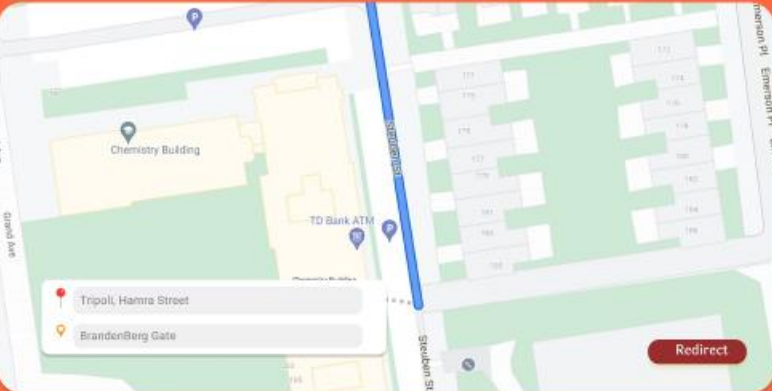
## Request Details Page:




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[< Back](#)

### Request Details




**We're Always On The Move!** 

Request Code Number  
**A1290P**

Vehicle Type  
car, Suzuki

Departure time  
16:30  
Aug 09, 2023

  
Duration 1hr 30mins

Arrival time  
18:00  
Aug 09, 2023

#### Receipt

Request Serial Number <b>A1290P</b>	Type of goods <b>Couch</b>
Distance from departure to destination <b>18 miles</b>	Extra Distance <b>1 mile</b>
Departure address <b>Tripoli, Hamra Rue Street</b>	Destination address <b>BrandenBerg Gate</b>
Service Charge <b>100\$</b>	Extra Charge <b>10\$</b>

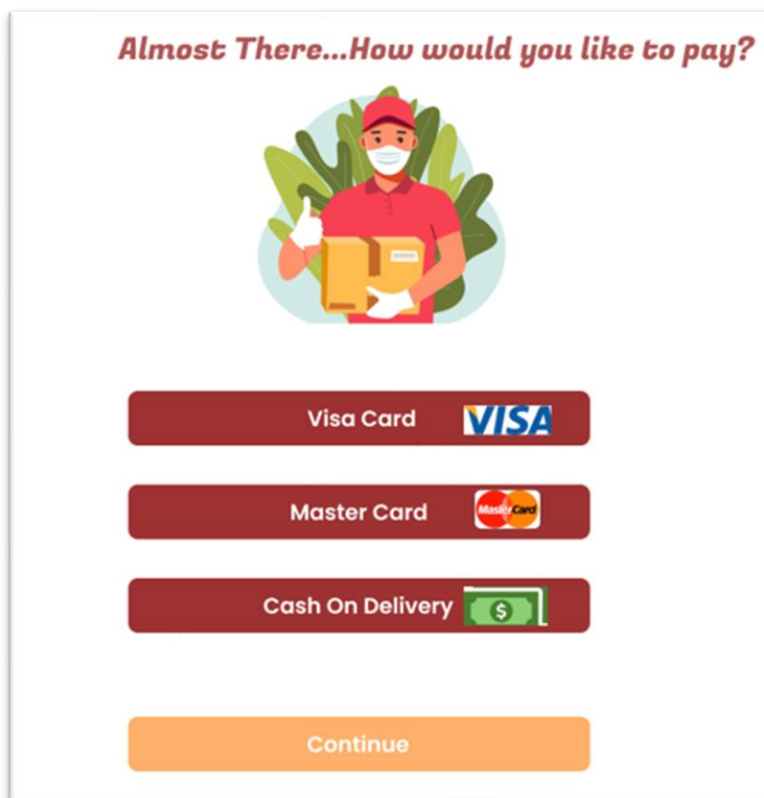
[Make Payment](#)[Cancel Request](#)

**Total Charge**  
**110\$**

In this page, users are able to track their requests. The map shows the constantly updating location of the driver with respect to the two locations: departure and destination. The users are also able to view the estimated time for the driver to reach the destination location. The first button, “Redirect” redirects the user to the vehicle on the map, in case he scrolled through the map and lost track of the vehicle. In addition to tracking the request service, all the request information entered is displayed to the user along with his receipt displaying the traveled distance and the net, extra, and total charge of the service. If the client has not paid yet, “Make a Payment” button is going to be displayed leading the user to the payment page and note that the tracking section will

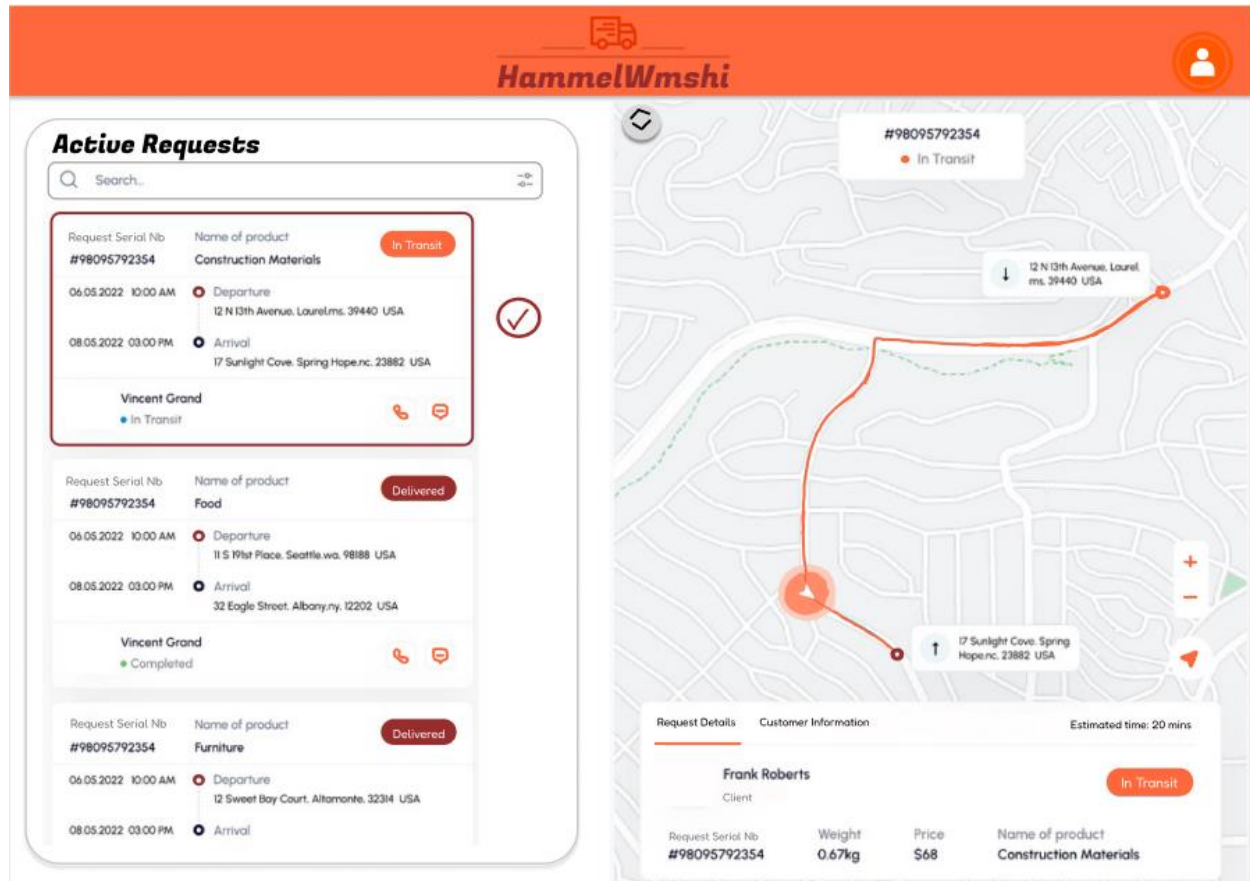
be set to default since the transportation has not started yet. If the user has already paid, a text will be displayed stating that the service has been paid for. If the request is not approved yet, the page will only display the information of the request in addition to a message that states that the request has not been approved yet. Once the request has been accepted, the system will assign the appropriate vehicle, generate the bill, notify the driver to stay on point until the user makes the payment. After the user pays, the driver is notified to move. If the user didn't pay within 10 minutes, the request is automatically canceled.

After clicking “Make Payment”, a pop-up box will be displayed, and the payment process will start.




The user is given several methods of payment either by card (visa or master card) or to pay in cash to the driver after the request is done. The user then continues to a page in which he'll be required to fill in his financial information based on the method he chooses.


## Driver's Portal:



From the driver's side, the application is going to be installed on a device that the driver is going to use as a GPS and for managing requests. A list of requests is displayed with the request's serial number, the request's status, the type of product, departure and destination addresses, the client's name, and the option to contact the client. Once the driver clicks on a request the map is displayed to the left with the route. The driver is able to access all information concerning the request and the client information. The driver can put the map on full screen, zoom in and out, and redirect the location. When he delivers the requested goods, he clicks on the check beside the selected request, and it will automatically change its status to completed and the driver's status to available on the system. When the driver gets a new request, it appears on top of the list and the driver accepts it. The driver then waits in his place for the client's confirmation before he drives.

## Officer's Portal:



**Requests**

Service Request: A373e7

Service Request: B37ey3e7

Registration Request: zaynzalek@gmail.com

Registration Request: maysmith@gmail.com

Service Request: B372927

Full Name: Zayn Malik

Company: One Direction

Email: zaynzalek@gmail.com

Phone: 76533578

Address: NY, Holms street

Confirm

Deny

For the officer portal, a minimalistic approach was taken for the design since the officer has to be quick in checking and confirming requests. There are only 2 pages, the profile page of the officer where he can log out or sort his settings, and the main page for requests. This page displays a list of user service requests and registration. The officer will be able to click on request from the list, in which a pop up will appear to the right of the screen (either information about the request or user registration). The officer is then presented with two buttons, to either deny or confirm the service request/registration. When the officer either denies or accepts a request, the box will be automatically hidden from the list displayed. Additionally, the effect of the officer's choice will be represented by an email for registration requests telling the user that his registration has been denied or an id representing confirmed registration. With respect to service requests, a change of status will be made within the system and notifications will be sent to the client to proceed with the payment.

**Upon the comprehensive explanation of the application design, the focus of this report now transitions towards the indispensable aspects of testing, maintenance, and risk management. These elements are essential in ensuring the system's robustness, longevity, and resilience.**

## **VII. Testing, Maintenance, and Risk Management**

### **a. Maintenance Plan:**

The HammelWmshi system will require regular maintenance to ensure its continued effectiveness. This includes corrective maintenance, which involves fixing bugs and system errors in the HammelWmshi application. For example, if a bug is found in the client portal that prevents users from placing requests, corrective maintenance will be required to resolve this issue.

Adaptive maintenance will also be necessary as the operating environment changes. For example, if a new version of the operating system is released, the application may need to be updated to remain compatible.

Perfective maintenance will be based on user feedback and performance metrics. For instance, if users suggest a feature that allows them to track their ride in real-time, this could be implemented as part of perfective maintenance. Lastly, preventive maintenance will involve anticipating and correcting issues before they occur. For example, regular checks could be performed to ensure the database is not nearing its capacity limit.

### **b. Testing Plan:**

To ensure the HammelWmshi system functions as expected, a rigorous testing plan will be implemented. This will begin with unit testing, where each component of the HammelWmshi system, such as the tracking feature or the payment processing feature, will be tested individually to ensure they function correctly.

Following this, integration testing will be conducted to ensure that different components interact correctly. For example, after a request bill is confirmed, the payment should be processed correctly (payment processing feature).

Furthermore, data transformation testing ensures accuracy during format changes or calculations. This type of testing is very crucial in the context of HammelWmshi as the system is responsible for calculating total distance traveled and basing the total charges on this calculation. So, any error arising from miscalculation and format errors will affect the billing process leading to client dissatisfaction and trust.

System testing will then be carried out to verify that the entire HammelWmshi system works as a whole and meets the specified requirements. Also, performance testing is needed to evaluate data flow efficiency under varying loads especially during placing requests and registering new clients as the great amount of data may place pressure on the system, which makes the company's scalability a goal hard to achieve.

Finally, user acceptance testing (UAT) will be conducted before the system is ready for delivery and use, to ensure it meets the needs and expectations of the users.



### **c. Risk Management Plan:**

Potential risks to the HammelWmshi project will be identified and strategies will be developed to mitigate them. This will begin with risk identification, where potential risks, such as delays in development, system downtimes, data loss, or unavailability of key personnel like the officer, will be identified. Following this, a risk analysis will be conducted to evaluate the likelihood and impact of each risk. For example, the risk of a delay in development might be high, and its impact might be moderate. Risk mitigation strategies will then be developed to reduce or eliminate the risks. For example, to mitigate the risk of a delay in development, additional resources could be allocated to the project. Finally, regular security audits will be conducted to identify and address potential vulnerabilities. This includes reviewing and updating security protocols, implementing the latest security patches, and ensuring compliance with industry standards. The identified risks will be regularly reviewed, and the risk management plan will be updated as necessary.