**Product Backlog: WAGAZ (Our Gaz)**

**Project Description:**

An application which helps users locate nearby gas bottle shops, check real-time stock availability and where user can choose between pickups or home delivery and a map to provide and optimize route for delivery.

**Requirements**

**Gas Delivery Platform Requirements**

**Functional Requirements (***what the system should do***)**

**1. Authentication & User Management**

* The system shall allow users to register with email, password, and phone number
* The system shall support three distinct user roles: Customer, Shop Owner, and Delivery Agent
* The system shall authenticate users securely before accessing personalized features
* The system shall allow users to reset their passwords via email verification
* The system shall maintain user profiles with delivery addresses and order history

**2. Map & Geolocation Services**

* The system shall request and use the user's location with permission
* The system shall display an interactive map showing relevant information based on user type
* The system shall calculate and display routes between locations
* The system shall provide a search radius filter for finding nearby gas stores
* The system shall update the map in real-time when orders are placed or accepted

**3. Customer Module**

* The system shall allow customers to search for specific gas types in the database
* The system shall display gas prices from different stores
* The system shall display the nearest stores with the requested gas type in stock
* The system shall allow customers to place orders for pickup or delivery
* The system shall provide customers with estimated delivery times
* The system shall allow customers to view their order history and status
* The system shall display directions to stores for pickup orders

**4. Shop Owner Module**

* The system shall allow shop owners to add and update their store information
* The system shall allow shop owners to add and manage gas bottle types they sell
* The system shall allow shop owners to update inventory quantities for each gas type
* The system shall allow shop owners to add other products with unit prices
* The system shall make shops visible on the customer map when they have requested items in stock
* The system shall allow shop owners to request delivery agents for customer orders
* The system shall notify shop owners of new orders and order status changes
* The system shall display shop performance metrics and sales reports

**5. Delivery Agent Module**

* The system shall notify delivery agents of nearby delivery opportunities
* The system shall display job details (pickup location, delivery location, items)
* The system shall allow delivery agents to accept or decline jobs
* The system shall update the map to show the optimal route upon job acceptance
* The system shall calculate estimated delivery times based on distance and traffic
* The system shall allow delivery agents to mark orders as picked up and delivered
* The system shall track the delivery agent's location for real-time order tracking
* The system shall display delivery history and earnings for delivery agents

**6. Order Management**

* The system shall process orders with multiple items
* The system shall track order status (placed, confirmed, in preparation, out for delivery, delivered)
* The system shall notify all relevant parties of order status changes
* The system shall maintain a history of all transactions
* The system shall generate unique order identifiers

**Non-Functional Requirements (***quality attributes of the system***)**

**1. Performance**

* The map shall load within 3 seconds on standard internet connections
* Search results shall be displayed within 2 seconds of query submission
* Route calculations shall complete within 3 seconds
* The system shall support at least 1000 concurrent users without performance degradation
* Notifications shall be delivered within 30 seconds of triggering events

**2. Usability**

* The user interface shall be responsive and adapt to both mobile and desktop screens
* All essential functions shall be accessible within 3 clicks/taps
* The application shall support both light and dark mode
* Error messages shall be clear and suggest resolution steps
* The map interface shall be intuitive with standard zoom and pan controls

**3. Reliability**

* The system shall have an uptime of at least 99.5%
* The system shall maintain data accuracy for inventory and order status
* The system shall handle temporary loss of internet connection gracefully
* All transactions shall be atomic to prevent partial order processing
* The system shall implement data backup with a maximum 24-hour recovery point objective

**4. Security**

* All communication between client and server shall be encrypted using HTTPS
* User passwords shall be stored using strong hashing algorithms
* The system shall implement rate limiting to prevent brute force attacks
* Location data shall only be used with explicit user permission
* The system shall implement role-based access controls

**5. Compatibility**

* : The web application shall be compatible with the latest versions of Chrome, Firefox, Safari, and Edge
* The application shall work on iOS 13+ and Android 8+
* The map functionality shall work with standard mapping APIs (Google Maps, Mapbox)
* The application shall degrade gracefully on older browsers

**6. Scalability**

* The database design shall support scaling to handle at least 100,000 users
* The architecture shall support geographic expansion to new regions
* The system shall be designed to scale horizontally for increased load

**User Role-Based Requirements**

**User Registration & Profile Management**

**User Story: User Sign Up / Login**

* *As a user, I want to sign up and log in securely using email or mobile number.*
* **Priority:** High

**User Story: Profile Management**

* *As a user, I want to manage my personal details, delivery addresses, and contact info.*
* **Priority:** Medium

**User Story: Password Reset / Recovery**

* *As a user, I want to recover or reset my password if I forget it.*
* **Priority:** Medium
* **Shop Locator & Gas Availability**

**User Story: Locate Nearby Shops**

* *As a user, I want to view gas bottle shops near my current location on a map.*
* **Priority:** High

**User Story: Search by Area or Shop Name**

* *As a user, I want to search for shops by name or location.*
* **Priority:** Medium

**User Story: View Shop Details**

* *As a user, I want to see shop hours, contact info, services, and ratings.*
* **Priority:** Medium

**User Story: Real-Time Gas Stock Availability**

* *As a user, should I should be able to check if a shop has gas bottles in stock (by size/type).*
* **Priority:** High
* **Ordering & Delivery Options**

**User Story: Select Gas Bottle Type**

* *As a user, I want to choose the type and size of gas bottle I need.*
* **Priority:** High

**User Story: Choose Pickup or Delivery**

* *As a user, I want to select whether I’ll pick up the gas or get it delivered.*
* **Priority:** High

**User Story: Schedule Delivery Time**

* *As a user, I want to schedule a delivery time that suits me.*
* **Priority:** Medium

**User Story: Track My Order**

* *As a user, I want to track my order in real-time once it's out for delivery.*
* **Priority:** High
* **Map Integration & Route Optimization**

**User Story: Integrated Map View**

* *As a user, I want to view the shop location and delivery route on a map.*
* **Priority:** High

**User Story: Route Optimization for Delivery Drivers**

* *As a delivery driver, I want the best route calculated to make efficient deliveries.*
* **Priority:** High

**User Story: Estimated Arrival Time**

* *As a user, I want to see how long the delivery will take.*
* **Priority:** Medium
* **Payments & Receipts**

**User Story: Online Payment Integration**

* *As a user, I want to pay securely via mobile wallet, credit card, or cash on delivery.*
* **Priority:** High

**User Story: View and Download Receipts**

* *As a user, I want to view and download my past receipts and orders.*
* **Priority:** Medium
* **Ratings & Reviews**

**User Story: Rate Shops and Drivers**

* *As a user, I want to rate my experience with shops and delivery drivers.*
* **Priority:** Medium

**User Story: View Reviews**

* *As a user, I want to read reviews from other users before choosing a shop.*
* **Priority:** Medium
* **Notifications & Alerts**

**User Story: Order Updates**

* *As a user, I want real-time notifications about order confirmations and delivery status.*
* **Priority:** High

**User Story: Stock Alerts**

* *As a user, I want to be notified when my preferred shop restocks gas bottles.*
* **Priority:** Medium
* **Admin & Vendor Dashboard**

**User Story: Shop Inventory Management**

* *As a vendor, I want to update stock levels and availability.*
* **Priority:** High

**User Story: Order Management Dashboard**

* *As a vendor/admin, I want to manage incoming orders and deliveries.*
* **Priority:** High

**User Story: Analytics and Reports**

* *As an admin, I want to view app usage and sales data for insights.*
* **Priority:** Medium

Frontend Archiecture