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# Qubic Zone: Self-storage Solutions

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# **1. Introduction**

## **1.1 Introduction**

In the modern world, people require portable and versatile storage systems due to the growth of the population density, the tendency towards living in small apartments, and the need for space. With the increase in the number of people and companies, the problem of the availability and safety of storage spaces becomes crucial. This development has opened the door for self-storage facilities to become a viable business venture in the e-commerce industry. The self-storage industry is set to expand and give consumers the best solution to their storage problems while providing entrepreneurs a pathway to establish profitable ventures.

Our project is to create an e-commerce site for a self-storage company, which will help customers find available storage space through a website. Our main goal is to make the renting of storage units as easy as possible for the user, from searching for available units to choosing the size and ordering it. Our project is not only a solution for the current consumer problems but also opens the door for future development and expansion using the latest web technologies.

## **1.2 Background**

Our project aims to address the growing demand for accessible and convenient storage solutions in today's urban environments. With people and companies experiencing a shortage of space, the demand for good self-storage services has emerged. Our project was designed to offer a solution that addresses these needs while at the same time improving the customer experience through technology.

The concept of the self-storage facility was derived from the realization of the difficulties that potential clients may encounter. Most people have a problem with where to store their items and at the same time ensure that they are safe and can be accessed easily. Traditional methods entail calling or going personally to various storage locations, filling out long-term lease contracts, and making reservations through complex processes. Our project seeks to simplify this experience by creating a website where users can easily browse available storage units, compare options, and complete rentals in a matter of clicks.

Our website is developed using the Laravel framework which is known for its strong features and user-friendly interface. This choice enables effective development and guarantees high functionality, such as user identification, selection of services, and order management. The

platform will display different types of storage, ranging from normal storage and refrigerated storage to meet the needs of different customers. Customers will be able to choose their branch of operation, see the units available according to size, and get a confirmation of their orders immediately.

Besides, the project will help to create a feeling of unity by offering useful information about each branch and the services it offers. This includes information about security, accessibility, and customer feedback. Thus, incorporating these elements into the website will help to establish trust with the potential customers and make them opt for our facility for storage.

In the future, we expect to add more features depending on the users' feedback, including filters, mobile responsiveness, and payment options. This approach not only helps us to meet the current customer needs but also helps to create the foundation for future growth and scalability in the competitive self-storage industry.

In conclusion, our project is a strategic response to what is currently facing the self-storage sector. This is achieved through the implementation of modern web technologies and a focus on the user experience within our website, a combination that we hope to use to change the way our customers interact with the storage sector, increasing satisfaction and therefore loyalty to our brand.

### **1.3 Problem Specification and Solution**

Despite the numerous opportunities that are associated with the self-storage industry, customers face a number of challenges when looking for storage services. Some of the problems include the absence of information on available units, complex procedures for booking, and poor information on prices and services. These challenges can be very frustrating and may discourage potential customers from accessing storage facilities.

To solve these issues, our platform will provide a convenient interface that will help users to search for and rent storage units. The layout of our website will be well organized to enable users to access different services, choose a branch of their choice, and see available storage units by size. Pricing and availability information will be provided for each unit, so that customers have all the information they need at their disposal.

Also, our platform will have a safe user authentication system that will allow customers to create accounts, track their orders, and view their rental history. This feature not only increases the convenience of users but also helps to build customer loyalty due to the individual approach. Our project seeks to solve the main challenges that are associated with self-storage with the view of providing a solution that will fit the current market needs and also create a good market niche in the e-commerce sector.

In summary, this report presents the information on our e-commerce website for a self-storage facility and the design and implementation of the site. Our platform is designed to be built with the use of modern web technologies and the primary focus is on the user experience, which is expected to change the way consumers interact with self-storage services and help the business grow and be successful.

## 2. Business Model

### 2.1 Overview

**Qubic Zone** is a cutting-edge e-commerce platform utilizing an on-demand model to provide accessible and secure self-storage solutions for individuals and businesses. It bridges the gap between the growing demand for versatile storage options and the limitations of traditional storage spaces. By leveraging the latest web technologies, Qubic Zone simplifies the process of finding, purchasing, and renting storage units, ensuring an efficient and user-friendly experience.

In addition to its core offerings, **Qubic Zone** provides innovative Smart Access Solutions designed to enhance convenience and security. These include Digital Lock Integration, which equips businesses with advanced locking systems for seamless and secure access, and App-Controlled Access, allowing users to lock and unlock units via a mobile application for added flexibility. Moreover, the platform offers Customizable Permissions, enabling business administrators to manage access for employees or clients efficiently. This integrated approach underscores Qubic Zone's commitment to delivering cutting-edge technology solutions that elevate the self-storage experience.

### 2.2 Individual product

#### 2.2.1 Personal Storage Units

- **Customizable Options:** Units available in multiple sizes with transparent pricing based on the storage duration.
- **Secure and Accessible:** Safe spaces for storing personal items like furniture, seasonal belongings, and sports equipment.
- **Flexible Solutions:** Offers secure and accessible spaces for personal belongings, furniture, seasonal items, or sports equipment.

#### 2.2.2 On-Demand Short-Term Storage

- **Ideal for Temporary Needs:** Serves customers moving houses or undergoing renovations.
- **Convenient Access:** Features easy retrieval with digital locks for enhanced security and flexibility.

## 2.3 Business Products

### 2.3.1 Business Storage Units

- **High-Capacity Solutions:** Designed for storing large inventories, equipment, and important documents.
- **Refrigerated Storage Options:** Suitable for businesses needing to store perishable goods like food or pharmaceuticals.
- **Customizable Spaces:** Flexible unit sizes tailored to meet the specific needs of various industries.

### 2.3.2 Integrated Storage and Locker Solutions:

- **Locker Integration:** Businesses can combine storage units with locker systems for added flexibility in storing small, frequently accessed items.
- **Customized Lockers:** Ideal for corporate offices, schools, gyms, or retail environments, designed to fit specific organizational needs.
- **Flexible Options:** Available for purchase or lease, lockers can be seamlessly integrated into storage spaces for a unified solution.



## 3. Revenue Model

### 3.1 Storage Unit Rentals:

- **Individuals:** Revenue from short-term and long-term rentals of personal storage units, with pricing based on unit size, duration, and additional features (e.g., temperature-controlled units).
- **Businesses:** Revenue from renting larger storage units for inventory, equipment, or document storage, with tailored pricing plans for bulk or long-term usage.

### 3.2 Locker subscription:

- **Locker book:** The service is provided to subscribers, granting them free access to lockers with their subscription. short-term and long-term solutions for companies, schools, and gyms.

### 3.3 Subscription Plans:

- **Premium Plan:** offer a monthly subscription for all users.
  - **Technical Support:** Available 24/7.
  - **Cleaning Services:** Daily cleaning without restrictions.
  - **Access Cards:** Up to 3 replacement cards per month.

### 3.4 Value-Added Services:

- **Cleaning Services Subscription:**
  - Free cleaning twice a week for subscribed customers.
  - **Premium Option:** Daily cleaning available 7 days a week with the premium subscription.
  - **On-Demand Cleaning:** Customers can schedule one-time or recurring cleanings for their rented units anytime for an additional fee.
- **Insurance:** Revenue from optional insurance coverage for stored items.
- **Delivery and Pick-Up Services:** Logistics companies are allowed to contract and granted permissions to provide the following services.
- **Smart Access Solutions:** Optional integration of app-controlled access or advanced security systems for businesses requiring enhanced functionality.

### **3.5 Advertising Opportunities:**

**On walls and entrances:** Offering space for targeted advertisements from related industries, such as moving companies or packaging material suppliers

## 4. Design

### 4.1 Brand Name and Logo Design

The brand name **Qubic Zone** reflects the essence of our offerings—storage solutions encapsulated in a modern and memorable identity. The logo visually reinforces this concept, designed in the shape of a cube with a lock, symbolizing security and reliability in storage.

#### 4.1.1 Logo Description

The logo for **Qubic Zone** features a stylized storage unit, depicted as a secure garage with a prominent padlock symbol. The design incorporates blue and white stripes, evoking a sense of safety and organization while representing the storage solutions we offer. The typography for "Qubic Zone" is presented in a bold, modern font, enhancing brand visibility and recognition. This fresh logo effectively captures the essence of our services, combining security and approachability in a visually appealing manner.



*Figure 4.1.1.1: Qubic Zone Logo Design*

### 4.2 User Interface (UI) Design

The user interface of the **Qubic Zone** website is crafted to provide a seamless experience for our target audience—individual customers seeking storage solutions and small businesses or e-commerce ventures needing space for their products.

Each page is designed to prompt the user to perform only one action, which simplifies the decision-making process and minimizes cognitive load. This design choice allows:

- **Focused User Experience:** By limiting options on each page, users can concentrate on completing one task at a time, reducing confusion and enhancing decision-making.
- **Streamlined Navigation:** The one-action approach simplifies the user journey, making it easy for customers to progress from service selection to order confirmation without distraction.

## 4.3 Layout and Navigation

### 4.3.1 Landing Page

The landing page is designed to capture attention with a clean, modern layout. It prominently features the **Qubic Zone** logo, reinforcing our brand identity. Key elements include:

- A striking header with navigation links that facilitate easy access to other pages.
- A concise introduction to our services, highlighting the benefits of using our storage solutions.
- A clear call-to-action button that directs users to explore available services.

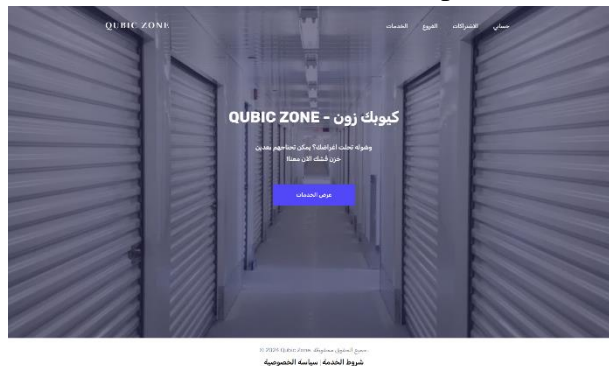
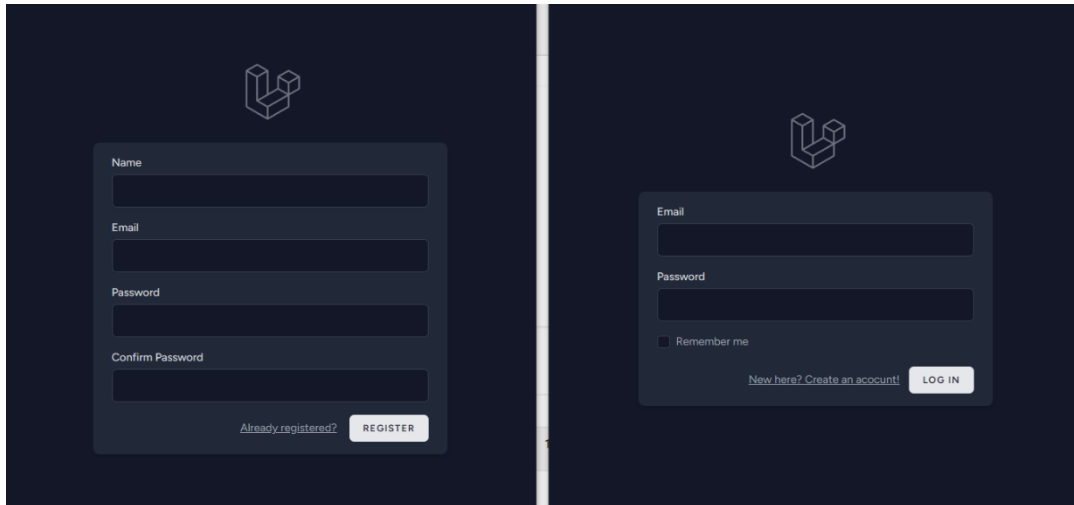


Figure 4.3.1.1: Landing page of Qubic Zone website

### 4.3.2 Login/Register Pages

These pages are built using Laravel Breeze, prioritizing user convenience with straightforward forms for quick authentication. The Breeze authentication system provides a clean and modern UI, enhancing the user experience.



*Figure 4.3.2.1: Login/Register Pages of Qubic Zone website*

### 4.3.3 Services Page

The Services Page showcases the various storage solutions offered by Qubic Zone, designed to meet the diverse needs of our customers. Each service is presented in a clear and engaging format, allowing users to understand their options easily. The services include:

- **Rent a Normal Storage Unit:** This option provides flexible space for personal belongings or business inventory, ensuring convenience and accessibility.
- **Rent Refrigerated Storage Units:** Specifically designed to protect sensitive products. Ideal for businesses needing to store perishable goods, these units maintain optimal temperature and humidity levels.
- **Rent an Entire Warehouse:** This option is suitable for businesses requiring extensive storage solutions, providing ample space for larger inventories or equipment.

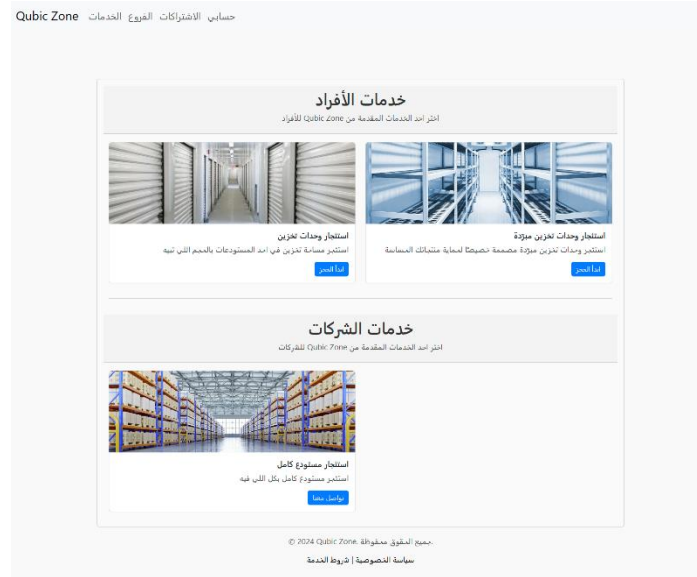


Figure 4.3.3.1: Services page of Qubic Zone Website

### 4.3.4 Plans and Subscriptions Page

The Plans and Subscriptions page provides users with an overview of available subscription options for Qubic Zone's services. Key features include:

- **Plan Descriptions:** Each subscription plan includes details on benefits and pricing, allowing users to compare options easily.
- **Visual Elements:** Engaging visuals enhance understanding and highlight the value of each plan.
- **Simple Subscription Process:** Users can easily select and subscribe to their preferred plan with clear call-to-action buttons.
- **Flexible Options:** Monthly and yearly subscription choices are available, catering to different user preferences.
- **Subscription Management:** Users can view and manage their current subscriptions, including renewals and upgrades.

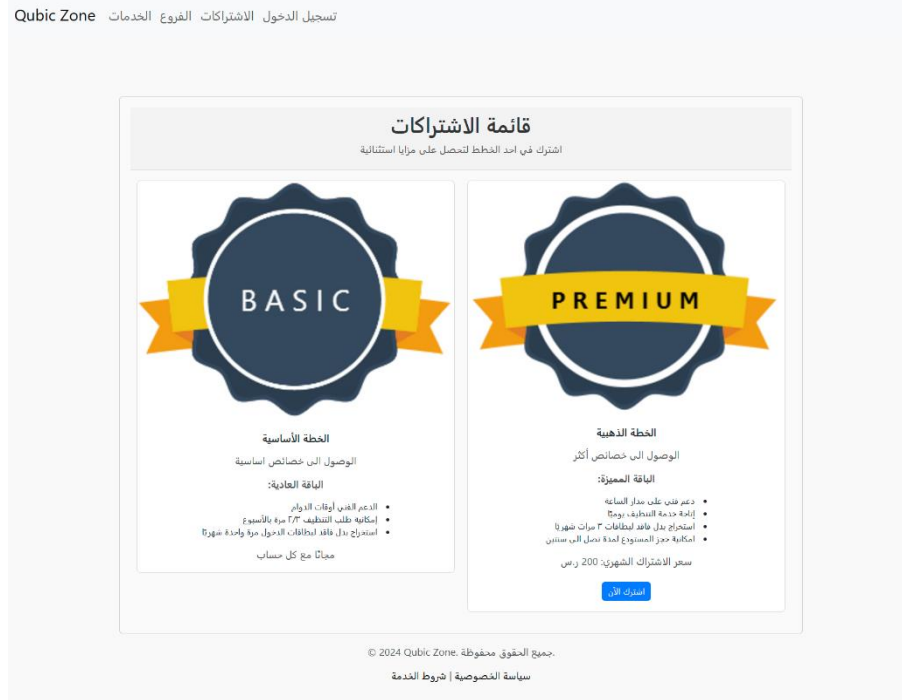


Figure 4.3.4.1: Plans and Subscriptions Page of Qubic Zone Website

## 4.3.5 Branch Selection Page

Users can easily choose a branch location through a dropdown menu or map interface, making the process intuitive and efficient.



Figure 4.3.5.1: Branch Selection Page of Qubic Zone Website

### 4.3.6 Storage Unit Selection Page


This page lists available storage units at the selected branch. The design features:

- Clear **categorization** by size (small, medium, large) with monthly pricing and availability.
- A **dropdown** menu allowing users to select their desired rental duration

Qubic Zone حسابي الاشتراكات الفروع الخدمات

### اختيار وحدات التخزين

الرياض < الفرع شمالي



**صغير**  
5x5"


مناسب لـ أغراض صغيرة، وثائق، حقائب صغيرة

المؤجر: 20 وحدة   السعر: 150 / شهري

-

3

+



**متوسط**  
10x15"


مناسب لـ أثاث صغير، دراجات، معدات رياضية

المؤجر: 10 وحدة   السعر: 300 / شهري

-

1

+



**كبير**  
10x30"

مناسب لـ أثاث متوسط الحجم، أجهزة منزلية، أرشيف

المؤجر: 5 وحدة   السعر: 450 / شهري


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0


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أجرها لمدة:

سنة أشهر



وحدة تخزين صغير  
عدد الوحدات: 3  
سعر التأجير الشهري: 450.00 ريال



وحدة تخزين متوسط  
عدد الوحدات: 1  
سعر التأجير الشهري: 300.00 ريال

**ملخص الطلب**

إجمالي عدد الوحدات: 4  
مدة التأجير: 6 أشهر  
إجمالي السعر: 4500.00 ريال

الدفع

سياسة الخصوصية شروط الخدمة

Figure 4.3.6.1: Storage Unit Selection Page of Qubic Zone Website.

### 4.3.7 Order Confirmation Page

Summarizing the user's selection, this page includes:

- Detailed information about the placed order, including the chosen storage units, rental duration, and total cost.



- A confirmation message that reassures users their booking is complete.



Figure 4.3.7.1: Order Details Page of Qubic Zone Website

## 4.3.8 Profile Page

The Profile Page allows users to view their profile details and their orders history.

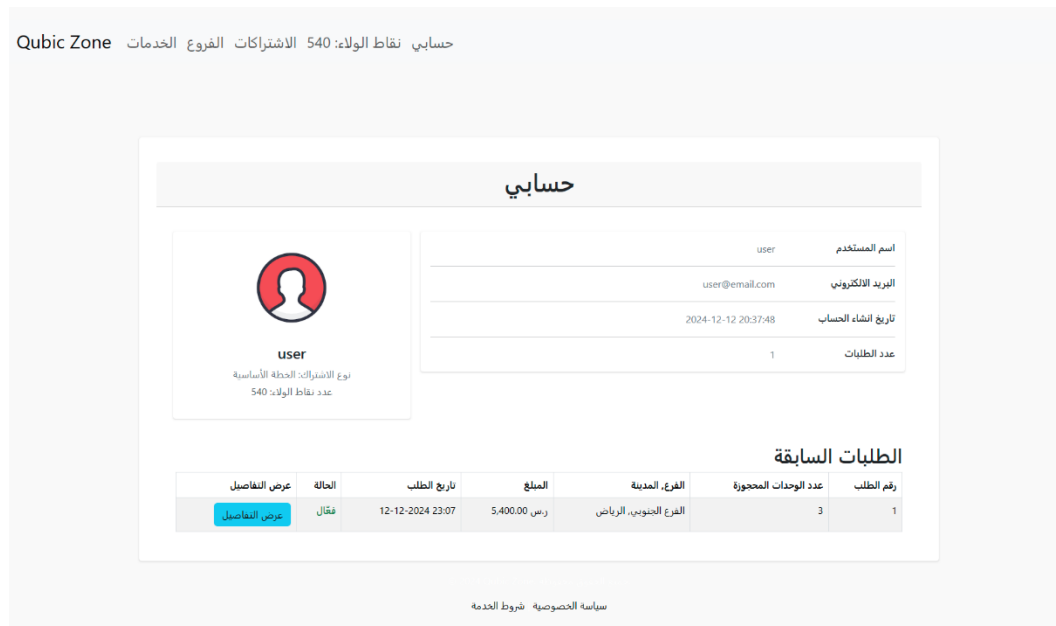


Figure 4.3.8.1: Profile Page of Qubic Zone Website

## 4.4 Color Scheme and Typography

The website features a simple and inviting design, utilizing a warm white background that enhances readability and creates a welcoming atmosphere. This color choice allows the content to stand out, ensuring a clean and organized look throughout the site.

### 4.4.1 Primary Colors

**Warm White:** Serves as the main background, promoting a sense of openness and clarity.

**Accents:** Complementary colors are used for buttons and highlights, adding visual interest while maintaining a cohesive appearance.

### 4.4.2 Typography:

The website employs the Rubik font, known for its modern and geometric design. This typeface is chosen for its versatility and readability, enhancing the overall user experience.

Overall, the color scheme and typography work together to create a user-friendly interface that reflects the professionalism and reliability of Qubic Zone.

## 4.5 Design Conclusion

The Qubic Zone website boasts a user-friendly design prioritizing simplicity. Its one-action-per-page approach streamlines navigation, while modern typography and a clean aesthetic enhance readability and create a welcoming experience. This design fosters customer satisfaction and provides a solid base for future growth.

## 5. Implementation

### 5.1 Technology Stack

The self-storage e-commerce website is developed using the following technology stack:

#### 1. Frontend:

- HTML, CSS, JavaScript, and Blade Engine are utilized to create a dynamic, responsive, and user-friendly interface.
- Bootstrap is employed for rapid layout design and to ensure mobile responsiveness.

#### 2. Backend:

- Laravel framework is chosen for its MVC architecture, which promotes clean code separation and maintainability.
- SQLite serves as the relational database management system.

#### 3. Version Control:

- Git is used for version tracking and collaboration throughout the development process.

### 5.2 Database Design

The database is structured to efficiently manage users, subscriptions, plans, services, branches, storage units, and orders. Below is the schema for the database:

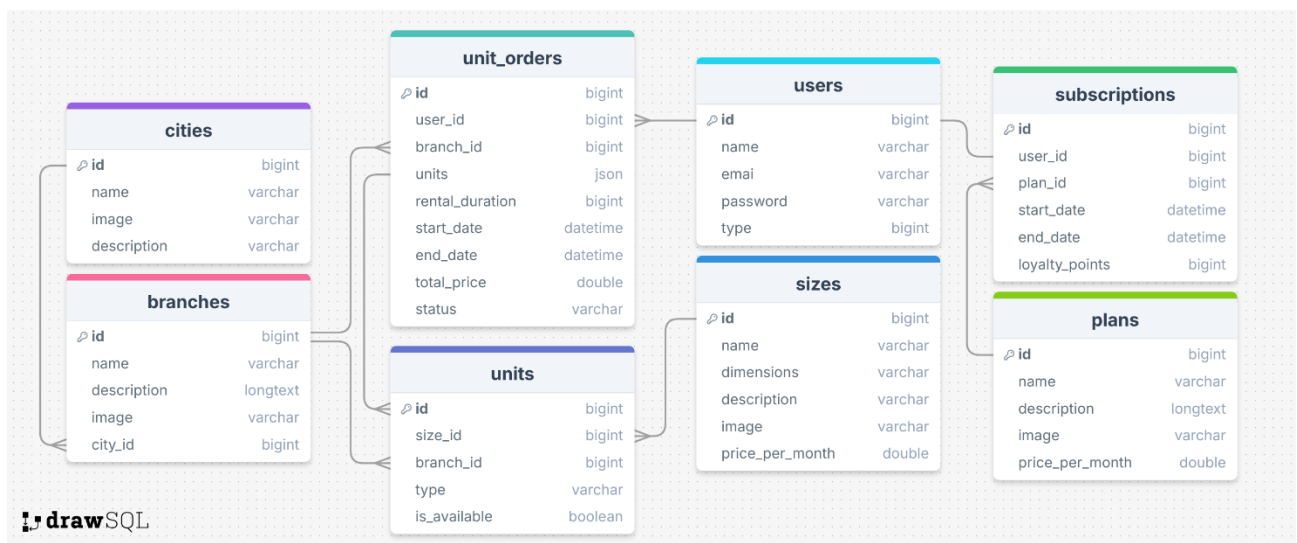


Figure 5.2.1: Entity-Relationship Diagrams (ERD) of Qubic Zone Database Schema

#### 5.2.1 Schema Overview:

##### 1. Users Table

Stores user information, including:

- **id:** Unique identifier for each user.
- **name:** User's full name.
- **email:** User's email address.
- **password:** Encrypted password for authentication.
- **type:** User type (e.g., customer, admin).

## 2. Cities Table

Contains information about cities where branches are located:

- **id:** Unique city identifier.
- **name:** Name of the city.
- **image:** Associated image for the city.
- **description:** Brief description of the city.

## 3. Branches Table

Details about each storage branch:

- **id:** Unique identifier for each branch.
- **name:** Name of the branch.
- **description:** Description of the branch.
- **image:** Visual representation of the branch.
- **city\_id:** Foreign key linking to the **Cities** table.

## 4. Sizes Table

Defines storage unit sizes and pricing:

- **id:** Unique identifier for each size.
- **name:** Name of the size category.
- **dimensions:** Physical dimensions of the storage unit.
- **description:** Description of the size features.
- **image:** Visual representation of the size.
- **price\_per\_month:** Monthly rental price for the size.

## 5. Units Table

Represents individual storage units available for rent:

- **id**: Unique identifier for each unit.
- **size\_id**: Foreign key linking to the sizes table.
- **branch\_id**: Foreign key linking to the branches table.
- **type**: Type of storage unit (e.g., normal, refrigerated).
- **is\_available**: Boolean indicating unit availability.

## 6. Unit Orders Table

Captures rental transactions:

- **id**: Unique identifier for each order.
- **user\_id**: Foreign key linking to the users table.
- **branch\_id**: Foreign key linking to the branches table.
- **units**: JSON field containing the IDs of rented units.
- **total\_price**: Total cost of the order.
- **status**: Current status of the order (e.g., confirmed, completed).

## 7. Plans Table

Defines subscription plans available to users:

- **id**: Unique identifier for each plan.
- **name**: Name of the subscription plan.
- **description**: Description of the plan.
- **image**: Visual representation of the plan.
- **price\_per\_month**: Monthly price for the subscription.

## 8. Subscriptions Table

Captures user subscriptions to plans:

- **id**: Unique identifier for each subscription.
- **user\_id**: Foreign key linking to the Users table.
- **plan\_id**: Foreign key linking to the Plans table.
- **start\_date**: Start date of the subscription.
- **end\_date**: End date of the subscription.

- **Loyalty\_points:** Amount of loyalty points for current user.

## Relationships and Constraints

Foreign key constraints ensure data integrity and maintain relationships:

- **Users** linked to **unit\_orders**.
- **Branches** linked to **cities** and **units**.
- **Sizes** linked to **units**.
- **Units** is referenced in **unit\_orders**.
- **Plans** are linked to **Subscriptions**.

This structured design allows for efficient data management and retrieval, supporting seamless user interactions and scalable operations within the storage service system.

## 5.3 Core Functionality

### 5.3.1 User Authentication

The authentication system is implemented using **Laravel Breeze**, which provides a simple and efficient way to manage user registration and login. Users can register and log in securely, benefiting from a streamlined interface. Passwords are hashed using bcrypt to ensure data security, protecting user credentials from unauthorized access. This modern authentication setup enhances user experience while maintaining robust security standards.

### 5.3.2 Service and Unit Selection

Users can select from available services (normal and refrigerated storage units). Upon selecting a service, they are presented with a list of branches. After choosing a branch, the available storage units are displayed based on their size, with details on availability and pricing.

### 5.3.3 Plans and subscriptions

Qubic Zone provides functionality for users to choose between two subscription plans: the Basic Plan and the Premium Plan. This feature allows customers to select the plan that best suits their storage needs, with options tailored to various requirements.

### 5.3.4 Order Processing

Once a user selects the storage unit they want and the rental duration, they are directed to an order confirmation page. The order details are saved in the database, linking the user to their selected storage unit. The total cost is calculated based on the rental duration and displayed on the confirmation page.

### 5.3.4 Order Processing

Users can view and manage their subscription plans through a special interface. This functionality allow users to:

- **View Active Subscriptions:** Users can see a list of their active subscriptions, including details such as plan name, start date, end date, and price.
- **Subscribe to New Plans:** Users can browse available subscription plans and select one to initiate the subscription process. This includes confirming the plan details and payment information.

## 5.4 Implementation Conclusion

The implementation of the self-storage e-commerce website leverages Laravel's capabilities and follows best practices for web development. The database schema effectively organizes data, while the responsive design enhances user experience across devices.

## 6. Future Consideration

When we started working in our project by design and developing Qubic Zone self-storage e-commerce platform, we ensured to give the customer even if it is individual or business a lot of features to make our platform the best choice for self-storage.

### 6.1 Scalability

The platform is designed to accommodate future growth in user base, features, and locations. The modular structure of the Laravel framework allows for seamless addition of new services, branch locations, and storage unit types.

### 6.2 User-Friendly Interface

To provide an optimal user experience:

- **Responsive Design:** Ensures compatibility across desktop, tablet, and mobile devices.
- **Minimal Navigation Complexity:** Reduces steps required to find, compare, and book storage units.
- **One-Action Design:** Pages encourage users to focus on completing a single task to improve decision-making.

### 6.3 Security

Security is a cornerstone of the platform to protect user data and transactions:

- **Authentication:** Implemented secure login with Laravel Breeze, featuring hashed passwords and email verification.
- **Payment Security:** Utilizes encrypted connections for safe handling of payment information.
- **Unit Access Management:** Integration of app-controlled locks ensures physical security for stored items.

### 6.4 Flexibility

Features were developed to cater to diverse user needs, including:

- **Customizable Units:** Options for normal, refrigerated, and large-capacity units.
- **Subscription Plans:** Tiered pricing for individual and business customers.
- **Branch Selection:** Users can select locations based on proximity or specific requirements.



## 6.5 Value-Added Services

To enhance the user experience and differentiate Qubic Zone:

- **Insurance:** Optional coverage for stored goods.
- **Delivery and Pick-Up:** Convenience for transporting items to and from storage units.
- **Cleaning Services:** Ensures units are maintained in pristine condition.

## 6.6 Integration of Advanced Technologies

- **Future AI Features:** Potential to include predictive algorithms for unit availability and recommendations based on user behavior.
- **Smart Access Solutions:** Enables users to manage unit access through digital locks and mobile apps.

## 7. Summary

The Qubic Zone self-storage e-commerce platform is a modern, user-centric solution addressing the growing demand for accessible and secure storage. By leveraging cutting-edge web technologies and prioritizing features like scalability, security, and flexibility, the platform redefines the customer experience in the self-storage industry.

From customizable unit options to app-controlled access and subscription plans, Qubic Zone positions itself as a comprehensive service provider catering to both individual and business customers. The focus on UI design, secure operations, and value-added services ensures a seamless and enjoyable user journey.

As Qubic Zone evolves, the incorporation of customer feedback and advanced technologies will enable continuous improvement, solidifying its place as a leader in the competitive self-storage sector. Through this project, the team demonstrates a commitment to innovation, customer satisfaction, and sustainable growth in the e-commerce domain.