**Desare Realty**

**Introduction**

In today's fast-paced world, people are always on the lookout for real estate website that are accessible, advanced and trustworthy. Welcome to the Desare Realty website, a powerful and dynamic platform designed to revolutionize the real estate experience.

The purpose of the Desare Realty website is to create an innovative and user-friendly platform that revolutionizes the real estate experience for a diverse range of users, including homebuyers, sellers, real estate professionals, and developers. Desare Realty website hope to facilitate the easy viewing and purchase of properties, providing users with a user-friendly and trustworthy platform to explore, evaluate, and make informed decisions about real estate transactions.

**Project Overview**

Desare Realty is dedicated to transforming the real estate experience by achieving specific objectives. Our primary focus is on simplifying transactions, streamlining the process of buying and selling properties to provide a hassle-free experience. Additionally, we aim to enhance user engagement by fostering collaboration and communication among clients, agents, and developers. Empowering decision-making is another key goal, achieved by providing users with comprehensive property information to make informed choices. We prioritize security and trustworthiness, implementing robust measures to safeguard user data and ensure a reliable online environment. Lastly, our commitment to innovation and adaptability drives us to stay abreast of technological advancements and industry trends continually.

***Key Features***

Our platform boasts key features designed to elevate the real estate experience. These include efficient property search functionality for quick and easy property discovery, tools that simplify and clarify each step of the real estate transaction process to ensure transparent transactions, integrated messaging systems for user collaboration, and the provision of comprehensive property information such as high-quality images, property specifications, and descriptive details to aid decision-making. Additionally, we offer developer integration opportunities through well-documented APIs, allowing third-party applications to enhance the overall user experience.

***Technologies Used***

To achieve these objectives and features, we employ various technologies. As the primary code editor, we use Visual Studio Code due to its versatility and the various extensions used in order to streamline the development process. The Database Management is assisted by XAMPP, a web server solution stack package that includes MySQL, and PHP. For the frontend language, the website uses a combination of HTML, CSS, and JavaScript. The backend is handled with PHP with MySQL via phpMyAdmin. Additionally, the backend scripting language used in this system is Php, a scripting language known for its usage in web backends.

**System Architecture**

The main goal of Desare Realty is to allow buyers to browse properties in various locations and purchase the properties they wish to live in. Additionally, sellers can sell their properties and put them up for listings, thus making their properties available for purchase.

***Architecture Overview***

This project, called Desare Realty, will change the way you view real estate by emphasizing your goals and desires. It established us as a reputable brand in the real estate sector by having a love for helping individuals find their dream residences and investments. Purchasing the property and renting it out will provide an individual with a consistent flow of rental income, passive income, and the possibility to develop long-term wealth. The property will also increase over time, enabling you to sell it for a profit down the road. Audiences are those who are looking to borrow money to buy, sell, or rent real estate and will be the focus of this initiative.

A web application's backend oversees many crucial functions, such as data storage for user accounts and profile information, processing user input for login and registration forms, search queries, and online order and payment management, and guaranteeing security and privacy for private information like passwords and financial data, keeping hostile assaults and unlawful access at bay, corresponding with outside services by integrating social media platforms, emails, and agent numbers.

***Components and Modules***

**Components**

* Front-end components (user interfaces, web pages)
* Back-end components (databases, servers, APIs)

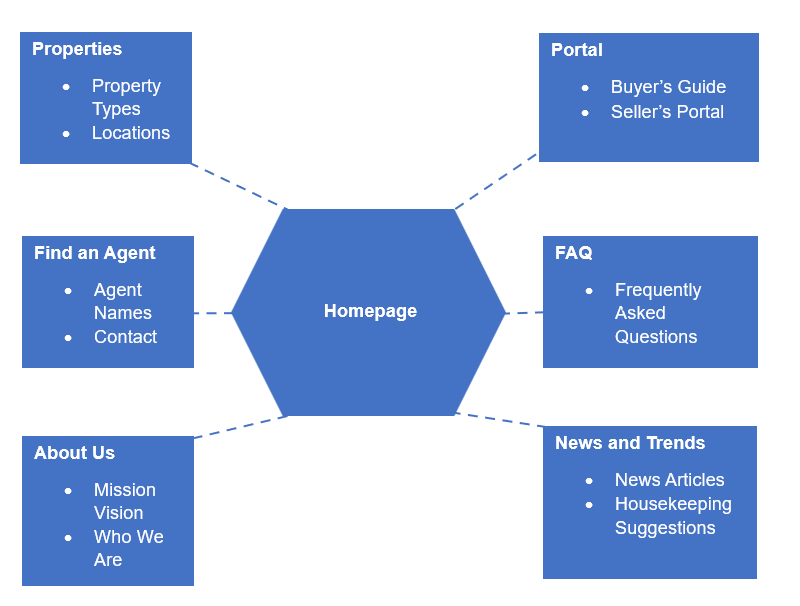
**Modules**

1. User authentication module
2. Order processing module
3. Product catalog module
4. Reporting module
5. A diagram of data flow

   Description automatically generated**Data Flow Diagram**

**Site Structure**

Desare Realty shows a simple, user-friendly site structure, with all the required modules easily available and organized. With the home page, the user can see certain sections of the page dedicated to get started to be in-the-know about the latest trends and topics that is going on in the website such as a shortcut to becoming a seller, news articles, and even agents. The properties page shows off all properties depending on category allowing for users to see which kinds of properties are available. The Find Agents page shows the user with a number of real estate agents that work with the company to help them get started in viewing various properties, scheduling appointments, and helping them make an informed choice as to what properties to pick. Lastly, the about us page shows the user with the mission and vision of the company along with other information that gives the user more information about the company.



**Design and Layout**

***Overview***

The Desare Realty website’s interface is simple and easy to use. One can find what they need at a glance without needing to comb through the website in order to get to their desired webpages. The site contains necessary components in order to ensure that.

***Features***

1. ***Navigation Bar***

The navigation bar contains all the relevant information the user needs to see, such as buying and selling properties, agents, and news and trends.

1. ***Homepage***The welcome page of the site. The site features rich visuals such as finding agents, trending listings, news articles, and lifestyle tips.
2. ***Properties***The properties page is the heart of Desare Realty. It allows the user to browse through various property types and in different locations to see which ones are available.
3. ***Company Location***For the users who wish to know where the headquarters are located, a Google Maps page displays the location using its API
4. ***Content***The visual content is laid out very broadly, arranging the items in symmetrical grids. The images are large and pop out to the viewer, which makes them associate the section of the site with the function they need to see.

***Color Scheme***

The color scheme of the site uses a mixture of white with #8A110B used for the buttons. The color used for the fonts against white backgrounds is black while the text used overlaid over pictures is white. The footer of the site is #2A2A2B with white text and white icons.

***Typography***

The font used throughout the site is Inter, a font acquired from Google Fonts and imported into the site. The font has varying degrees of font sizes and weights depending on the content being used.

**Content**

***Text Content***

The textual content of Desare Realty draws in visitors to check out the site and explore its services. News articles contain up-to-date information regarding the site and the company and its properties, giving the users ample time to make decisions based on the current events happening as described by the site. The housekeeping tips section found at the bottom of the homepage offer various advice so that the user can make the most of their home with tips such as decorations, furniture arrangements, and more.

***Images and Media***

The various images interspersed throughout the site give visual context as to what the components of the site hold. As such, the properties section show images of the various properties at the different locations so that the user knows what the property type looks like in the location of their choice.

**Functional Components**

The seller registration allows the user to create a seller account. This way, they can access the portal dedicated for sellers to put their properties up for listings and sell them. Once their properties are put up, they can choose to sell them or delete them from the active listings. Once sold, the properties go to a sold listings section where they can be seen by the user.

The profile page shows the active listings of the user and the sold listings of the user. Down below, there is a button that redirects them to the listings form and allows them to put properties up for listing.

Contact forms on the contact us page allow the user to fill out their name and email and they can write out their inquiries. Once they press the send button, a popup will appear telling the user their inquiries are sent.

The properties page uses JavaScript in order for the user to take a closer look at the properties and see the descriptions of the properties.

**Data Management**

In the development environment, the database management system PhpMyAdmin is utilized in conjunction with XAMPP for establishing and managing connections. XAMPP serves as the local server solution, facilitating the deployment of web applications and databases on personal computers. Within this setup, PhpMyAdmin acts as the interface for interacting with databases, leveraging its user-friendly interface and robust features. The underlying database engine powering PhpMyAdmin is MariaDB, a widely-used relational database management system known for its performance, reliability, and open-source nature. Through PhpMyAdmin's intuitive interface, developers can efficiently create, modify, and query databases, streamlining the development process. This integrated environment offers a comprehensive toolkit for database administration and development tasks, allowing the developers to build and test applications.

In the system's data flow, users interact with the platform primarily through the login and signup pages, which serve as entry points to access various features. Once authenticated, users, particularly sellers, are directed to their respective portals tailored to manage their properties and conduct related activities. These portals offer functionalities such as adding new properties, editing existing ones, and managing property listings.

Furthermore, upon successful login, users are redirected to their profile page, where personalized information and actions are presented. The profile page dynamically displays properties associated with the logged-in user, offering a convenient overview of their listings. This feature enhances user experience by providing quick access to manage and monitor their properties effectively.

After accessing their profile page and viewing their listed properties, users are provided with interactive options to manage their listings effectively. Each listing element is equipped with two buttons, facilitating actions such as selling or deleting the listing. If a user decides to sell a listing, they can simply click on the corresponding button, triggering a process that relocates the listing from the active listings section to the Sold Listings section. This transition ensures clear organization and differentiation between active and sold properties, streamlining the browsing experience for both sellers and potential buyers.

Conversely, if a user opts to remove a listing entirely, they can do so by selecting the delete button associated with the listing. Upon confirmation, the system initiates the deletion process, effectively erasing the listing from the active listings section. This action provides users with the flexibility to manage their listings according to their preferences and requirements. Moreover, by incorporating these intuitive features, the platform empowers users to maintain an up-to-date and organized inventory of their properties.

**System Integration**

In the website's infrastructure, the integration of Google Maps is achieved through the incorporation of its API as a third-party solution. The API code includes precise coordinates pinpointing the location of the company's headquarters or primary business address. These coordinates are then utilized to embed a Google Maps iframe directly into the webpage, enabling the visualization of the company's location.

By incorporating Google Maps API, the website offers visitors an interactive map displaying the exact geographic position of the company. This feature serves multiple purposes, including providing clear directions to potential clients or customers, enhancing the website's credibility by showcasing a physical presence, and facilitating engagement by offering a familiar and intuitive mapping interface.

The integration of Google Maps API not only enhances the functionality of the website but also contributes to a positive user experience. Visitors can easily locate the company's address, obtain directions, and gain a better understanding of its geographical context, thereby fostering trust and facilitating communication between the company and its audience.

In the website's infrastructure, JSON files serve as a structured data storage mechanism, utilizing key-value pairs to organize information. Specifically, within the "Find An Agent" page, JSON files are employed to store essential data such as image URLs, social media links, and agent names. This approach centralizes agent information into one coherent file, simplifying management and retrieval processes.

To incorporate this data into the website, a JavaScript function is utilized to dynamically access and parse the JSON files. By leveraging JavaScript, the website can efficiently retrieve the necessary agent details and seamlessly display them on the "Find An Agent" page. This method offers flexibility and scalability, allowing for easy updates or additions to agent profiles without the need for extensive code modifications.

The CSS styling for the page is designed to be flexible and accommodating to accommodate multiple entries seamlessly. One key technique used is setting up a grid layout with auto rows. By doing so, the layout dynamically adjusts to accommodate varying amounts of content, ensuring that additional entries, such as new members, do not disrupt the overall design or functionality of the site.

This grid layout with auto rows allows the content to flow smoothly without predefined fixed heights or widths. As a result, as new entries are added to the page, whether they are members or other elements, the layout automatically expands or contracts to accommodate the content appropriately. This ensures that the site maintains a cohesive and visually appealing appearance regardless of the number of entries present.

**User Experience**  
The website has been primarily optimized for desktop PCs to maximize screen real estate and ensure ease of navigation. This design choice reflects a focus on providing users with an enhanced browsing experience tailored to larger screens typically found on desktop computers. Elements such as layout, navigation menus, and content organization are optimized to take full advantage of the available screen space, offering users a visually engaging and intuitive interface.

While the site may still be accessible and functional on other devices such as tablets or smartphones, the design prioritizes desktop experiences. This decision allows for more intricate layouts, richer content displays, and enhanced interactivity that may not translate as effectively to smaller screens.

The website undergoes thorough testing on both Firefox Developer Edition and Google Chrome browsers to ensure optimal performance and compatibility across different platforms. By testing on these popular and widely-used browsers, the development team can identify and address any potential compatibility issues or discrepancies in rendering, functionality, or performance.

Testing on Firefox Developer Edition and Google Chrome helps ensure that the website runs smoothly and consistently across various browser environments, providing users with a reliable and seamless experience regardless of their preferred browser choice. Additionally, by prioritizing these browsers for testing, the development team can leverage the latest features and standards supported by modern browsers, enhancing the overall quality and user experience of the website.

Through rigorous testing and validation on Firefox Developer Edition and Google Chrome, the website can maintain high standards of performance, accessibility, and usability, ultimately meeting the needs and expectations of its users across different browsing environments.

Running the localhost version of the website, which includes the PhpMyAdmin database and the functioning site, on both Firefox Developer Edition and Google Chrome browsers is an essential step in the testing process. This approach allows the development team to identify and address any discrepancies or inconsistencies in the layouts, styling, or functionality across different browsers.

By testing the website on both Firefox Developer Edition and Google Chrome browsers on localhost, the team can ensure that the site maintains a consistent appearance and functionality regardless of the browser being used. Any issues or discrepancies observed during testing can be promptly addressed and resolved, helping to improve the overall quality and user experience of the website.

**Security**

User authentication on the website relies on PHP methods that interact with the database to ensure the validity of user credentials and prevent the creation of duplicate accounts. During user registration, PHP scripts verify the uniqueness of provided usernames or email addresses in the database. If a duplicate entry is detected, the registration process is halted, and users are prompted to choose alternative credentials.

Similarly, when users attempt to log in, PHP scripts validate the entered username and password against stored credentials in the database. Successful authentication grants users’ access to secure areas of the website, while unsuccessful attempts prompt authentication error messages.

Additionally, PHP methods manage user sessions to track authenticated users across pages, facilitating seamless navigation while maintaining security. This comprehensive approach to user authentication helps maintain the integrity of the website's user database and ensures a secure login experience for users.

To maintain the integrity of SQL commands and prevent any potential mix-ups during execution, the website incorporates SQL codes that utilize methods such as bind, fetch, and execute. These methods are essential for securely handling SQL queries and interacting with the database.

The bind method is utilized to associate parameters with placeholders in SQL statements. This ensures that user input is properly sanitized and prevents SQL injection attacks, where malicious SQL commands are injected into input fields to manipulate the database.

The fetch method retrieves data returned by SQL queries from the database. It allows the website to access and process query results efficiently, ensuring accurate data retrieval and presentation to users.

Finally, the execute method is responsible for executing SQL commands against the database. By explicitly executing SQL commands through this method, the website can ensure that the intended operations are performed without errors or unexpected behavior.

By incorporating these SQL codes and methods, the website enhances the security and reliability of its database interactions. This approach helps safeguard against potential vulnerabilities and ensures the integrity of SQL commands throughout the execution process, ultimately contributing to a more robust and secure web application.

**Administration**

User roles are an integral aspect of the website's security framework, ensuring that access to restricted areas, such as the portal, is strictly controlled. Without a logged-in account, attempts to access these blocked-off sections are met with non-responsive buttons, effectively preventing unauthorized entry. This stringent control mechanism is facilitated by the utilization of session variables, which play a crucial role in verifying user credentials. The website systematically examines the presence of session variables and cross-references them with the corresponding entries in the database, effectively thwarting any unauthorized attempts to bypass the access controls. Through this robust system, the website maintains a secure environment, safeguarding sensitive information and resources from unauthorized access.

Once a user successfully logs in, they are granted full access to the entirety of the website's features and functionalities. This includes privileged access to specialized sections like the seller portal, where they can view and manage their active listings with ease. Additionally, users are empowered to navigate to the listing page, where they can explore detailed information about various items or services on offer. This seamless access ensures that authenticated users can fully leverage the platform's resources and capabilities to engage in their desired activities, whether it be managing their listings or exploring available offerings.

The website's dynamic functionality extends to its responsive behavior based on the presence of session variables. Notably, interactions with elements like the account button trigger state changes that adapt to the user's authentication status. When clicked, the account button yields distinct prompts tailored to the user's login state. For authenticated users, it may offer options such as profile management or account settings. Conversely, for unauthenticated users, it could prompt actions like logging in or creating an account. This responsive design ensures a user-friendly experience by providing contextually relevant options aligned with the user's current session status, ultimately enhancing usability and engagement on the platform.

**Testing and Quality Assurance**

The testing and quality assurance phase of the development process is conducted through GitHub, leveraging its collaborative features and version control capabilities. Developers utilize GitHub's platform to thoroughly review and assess their commits, scrutinizing code changes for any potential errors, bugs, or inconsistencies. This process involves a systematic examination of code changes, ensuring adherence to coding standards, best practices, and project requirements. Through peer reviews, developers engage in collaborative discussions, offering feedback, suggestions, and identifying areas for improvement. GitHub's robust tools and features facilitate effective code review workflows, enabling developers to maintain code quality, enhance software reliability, and foster continuous improvement throughout the development lifecycle.

The tracking of bugs is streamlined through the comprehensive commit histories available within GitHub. Developers leverage these detailed records to pinpoint precisely where issues have arisen within the development process. By examining commit histories, developers can trace the evolution of code changes and identify potential sources of bugs or errors. This level of visibility allows for the detection of issues introduced by individual developers, whether unintentionally due to oversight or intentionally due to malicious actions. Additionally, commit histories serve as a valuable reference point for understanding the context surrounding code changes, facilitating efficient debugging and problem resolution.

**Deployment**

The website is hosted on GitHub, utilizing its powerful platform to provide accessibility and collaboration to developers and users alike. One of the key advantages of hosting on GitHub is the ability for anyone with access to the repository to clone the entire site, enabling seamless collaboration, contribution, and even local testing by individuals or teams. This open-source approach fosters a culture of transparency and community engagement, allowing developers to leverage collective knowledge and expertise to continuously improve the site's functionality and performance.

Furthermore, the website is also hosted locally through localhost, providing developers with a convenient environment for testing and development purposes. This local hosting setup offers a controlled environment where developers can experiment with new features, troubleshoot issues, and validate changes before deploying them to the live environment. By utilizing localhost hosting, developers can iterate rapidly, ensuring that updates and enhancements are thoroughly tested and optimized for deployment.

Additionally, the website's database is managed and accessed through PHPMyAdmin, a widely used tool for administering MySQL databases. PHPMyAdmin provides developers with a user-friendly interface for performing various database-related tasks, such as creating, modifying, and querying databases, tables, and records. This streamlined database management process enhances the efficiency of development workflows, allowing developers to interact with the database seamlessly and perform necessary operations to support the website's functionality.