

Door a Payment Gateway and Wallet

¹Abhishek Shukla, ¹Manoj Kumar,
¹Dept. of Computer Science & Engineering RDEC, Ghaziabad
Email- shukla.abhishek@gmail.com

Abstract

Overall, this research paper aims to provide currency payment gateways on the adoption of digital currencies in mainstream commerce.

As the use of Crypto currencies continues to grow, the need for reliable and secure payment gateways for Crypto currency transactions becomes increasingly important. This research paper aims to provide an in- depth analysis of Crypto currency payment gateways and their importance in the world of digital currencies.

The paper will discuss the working mechanism of crypto currency payment gateways, including the process of sending and receiving Crypto currency payments. It will also examine the security aspects involved in Crypto currency transactions and the measures taken by payment gateways to ensure the safety of user funds.

The research paper will also explore the different types of Crypto currency payment gateways available in the market, including custodial and non-custodial options. It will analyze the advantages and disadvantages of each type of gateway and how they can be integrated into different online platforms.

Furthermore, the paper will discuss the challenges faced by crypto currency payment gateways, such as regulatory compliance and the volatility of crypto currency prices. It will also examine the potential impact of crypto currency payment gateways and their role in facilitating secure and efficient crypto currency transactions.

Introduction: -

Our project called The Door is a payment gateway that enables users to send crypto currency securely and quickly to another party.

The necessity for dependable and secure payment gateways for crypto currency is growing as it becomes more and more popular, which is where DOOR comes in to help with the transfer.

Using DOOR, Users can send and receive various Crypto currencies like Ethereum, Bitcoin, XRP and Bitcoin Cash etc.

The main issues with crypto currencies are privacy and security. We leveraged the power of blockchain technology to guarantee the security of the transactions, making them more secure than traditional electronic transactions and resistant to hacking and other fraudulent acts.

The functioning of crypto currency payment gateways, including the sending and receiving of crypto currency payments will be covered in the paper. Additionally, it will look at the security precautions payment gateways take to protect user money during crypto currency transactions.

The paper will also go through the difficulties that crypto currency payment gateways face, including regulatory compliance and the erratic nature of crypto currency pricing. The possible influence of crypto currency payment gateways on the adoption of digital currencies in traditional business will also be examined. This report's overall goal is to give readers a thorough grasp of crypto currency payment gateways and how they work to make transactions safe and quick. The report will also explore the different types of Crypto currency payment gateways available in the market, including custodial and non-custodial options. It will analyze the advantages and disadvantages of each type of gateway and how they can be integrated into different online platforms.

Background: -

Door is software which enables user to connect through real world directly using Crypto Currencies.

User can sell and purchase Crypto coins or entity in exchange of real-life goods.

This will help the trader to reduce taxes and complications of paying extra money to the

broker applications or the real-life brokers.

Door also helps the user to store its essential and worthy Crypto coins in a highly secure and protective wallet which works on Block chain. The interface of the Door web application is very easy to use and a authentic application software which is built on auth0 platform which is a highly advanced software which enable the user to do a non-traceable transaction and really hard to hack and detect any account which made a transaction which protect an account from hacking, phishing, cookie theft, denial of services (doc), etc.

Basically, it gives user the complete assurance of a secure transaction from the both ends.

Main features: -

- Bit coin, Ethereum, Bit coin Cash and XRP support
- Multiple wallet creation (BTC, BCH and ETH) and management in-app
- Intuitive, multi signature security for personal or shared wallets
- Easy spending proposal flow for shared wallets and group payments
- [BIP32](#) Hierarchical deterministic (HD) address generation and wallet backups
- Device-based security: all private keys are stored locally, not in the cloud
- Support test net wallets for all supported coins.
- Synchronous access across all major mobile and desktop platforms
- Payment protocol (BIP70- BIP73) support: easily- identifiable payment requests and verifiable, secure bit coin payments
- Supports for over 150 currency pricing options and unit denomination in BTC
- Mnemonic (BIP39) support for wallet backups
- Paper wallet sweep support (BIP38)
- Email for payments, transfers, confirmations, etc.
- Push notifications (only available for IOS and Android versions.
- Customizable wallet naming and background colors
- Multiple languages supported

Languages: -

1. JavaScript
2. XML (Extensible Mark-up Language)
3. CSS (Cascading Style Sheets)
4. HTML5 (Hypertext Mark-up Language Revision5)
5. React JS
6. JSON (JavaScript Object Notation)

Tools: -

auth0 - for Authentication (Google, GitHub)

GitHub - for deployment web app

Netlify - for hosting web app

Vite.js - for installing net-lify command (NPM install - g netlify-cli)

NPM - Node Package Manager

YARN- Yet Another Resource Negotiator

- ⇒ Here, the above tools and languages were used to build and design this particular software as per the developer need and to make an interactive, lag free and glitch proof software.

Process: -

Door is a payment gateway which user can access through the website.

The website is very user friendly as once user opens it, user will see the login option on the right top. Through that option the user can login or create an account which require some basic details and as you see in given lower snapshot.



So, here are some terms which you can see in above screen.

Login: - If you are an existing user then by using login page user can login by providing credentials and getting a one-time password (OTP) and in case of a new user then user have to create a new account by providing the required bank and account holder personal details which are normally used while opening new account.

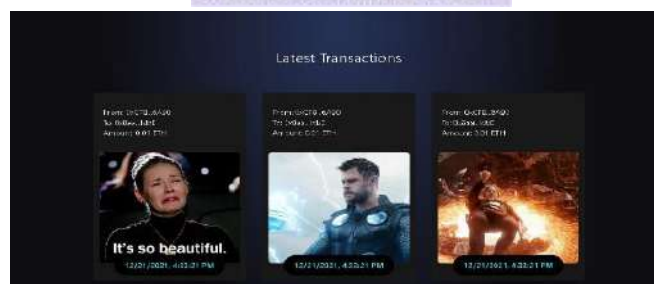
Wallet: - This is to indicate or represent the account balance as any transaction is made. Whether the account balance is credited or deducted, the amount will be updated in the wallet section.

Tutorials: - This section is for the new users as in this section the user can find the graphical representations for better explanation of the working like how to open an account or how this website works.

Exchange: - Here, user can see the real time value of the stocks which is been valued in the worldwide market and to know the worth of the stocks or the Crypto that user's wallet is capable of.

User can compare its wealth with in real time and use it as per need.

Market: - This is used to see the fluctuation in the market as the price go up or down with time. So that user can track the real time value of stock so that user doesn't have to worry about the market value.



Here, user can see the last transactions made till the current date and will show you every transaction details as per the order.

Basically, it will show the transaction history as per the need or per a user requirement. And there are gifs or virtual animation gifs which user can send to someone so that the transaction can look cool and good at the same time. This makes the interface a bit interactive and quite eye catchy, so that user don't get bored easily.



As you can see connect wallet option here user can connect its wallet by providing basic mobile details. After receiving a one-time password (OTP) user can easily connect to the wallet and check the status without paying any fee or any hidden charges. It's both easy and fast at the same time and within the wallet user can see the balance, status and the amount which its Crypto currency can be converted to.

Algorithms: -

Here you will see all the main algorithms which are used to create these web applications.

1. Authentication algorithm: -

- ⇒ Import a function named ``useAuth0`` from a library named `"@auth0/auth0-react"`.
- ⇒ Use ``useAuth0`` to get some useful information about the user's authentication status, including whether they're currently logged in, and some functions to log them in or out.
- ⇒ Use that information to decide what to display on the screen.
- ⇒ If the user is already logged in, a button will be displayed that lets them log out. When user click the button, the user account will be logged out and redirected back to the same page they were on before.
- ⇒ If the user is not logged in, a button is displayed that lets them log in. When they click the button, they are redirected to a login page.
- ⇒ If a variable called ``showLoginPage`` is true, a login page component on the screen is displayed.

This algorithm is use to make a highly secured login page

2. Components of web application: -

- ⇒ Import the ``React`` and ``ReactDOM`` libraries, along with the ``App`` component, ``TransactionsProvider`` and ``Auth0Provider`` context providers, and some CSS styles.
- ⇒ Call ``ReactDOM.render()`` to render the app into a specific HTML element (with an ID of ``root``) in the DOM.
- ⇒ Inside the ``ReactDOM.render()`` function, wrap the ``App`` component with two context providers:
``TransactionsProvider`` and ``Auth0Provider``.
- ⇒ The ``TransactionsProvider`` context provider is a custom context provider that wraps the ``App`` component and provides it with access to transaction-related data and functions.
- ⇒ The ``Auth0Provider`` context provider is a built-in context provider from the ``@auth0/auth0-react`` library that provides authentication-related data and functions to the ``App`` component. It takes some configuration options as props, including the ``domain``, ``clientId``, and ``authorizationParams`` properties.
- ⇒ The ``domain`` and ``clientId`` properties are authentication-related configuration options that tell Auth0 which app and domain to use for authentication.
- ⇒ The ``authorizationParams`` property is an optional configuration option that specifies additional parameters to include in the authorization URL when a user logs in or signs up. In this app, we're using it to specify the redirect URI to be the current window's origin, which tells Auth0 to redirect the user back to the same page they were on before logging in.
- ⇒ Close the ``Auth0Provider`` and `Transactions Provider`` context provider components, and pass the entire component tree to ``ReactDOM.render()``, which renders our app into the specified ``root`` HTML element.

This Algorithm is used for creating a structure of the software. Here all the API's are called.

3. Processing components of webapplication: -

- ⇒ Import several components (including `Navbar``,`Welcome`,`Footer`,`Services`,`Transactions``) from a file called `components.js``.
- ⇒ Define a functional component called ``App`` that returns some JSX.
- ⇒ The JSX returned by ``App`` represents the structure of the app, which includes a ``div`` element with a class of ``min-h-screen``.
- ⇒ Inside this ``div`` element, there is another ``div`` element with a class of ``gradient-bg-welcome``.
- ⇒ Inside the ``gradient-bg-welcome`` ``div``, render a ``Navbar`` component and a ``Welcome`` component.
- ⇒ Below the ``gradient-bg-welcome`` ``div``, render a ``Services`` component, a ``Transactions`` component, and a ``Footer`` component.
- ⇒ Export the ``App`` component as the default export of this module, which means that it can be imported and used in other parts of the app.
- ⇒ The ``App`` component serves as the main entry point of the app and provides the overall structure and layout of the app.

This algorithm is used for creating the whole application. Here the whole processing is done. The brain of the web application, all the inputs will be taken here and process those inputs and give a favourable output.

Complete working of the webapp is done here.

Works as the front end or the interactive part of the web application.

Connects the user to the backend of the web application.

Future work: -

Here we are going to discuss what are the future goals and future approaches what our web application is planning.

1. Integration with additional crypto currencies: Currently, your payment gateway may support a few popular Crypto currencies like Bitcoin and Ethereum. However, as more Crypto currencies gain popularity, it may be beneficial to integrate them into your payment gateway to offer more payment options to users.

2. Mobile application development: In today's digital age, mobile applications are becoming increasingly popular for conducting online transactions. Developing a mobile application for your payment gateway can provide users with a seamless payment experience on their mobile devices.

3. User-friendly interface: As more people become interested in using crypto currencies for online transactions, it's important to ensure that your payment gateway has a simple and user-friendly interface that allows users to easily navigate and complete transactions.

4. Enhanced security features: With the increasing popularity of crypto currencies, the potential for fraud and cyber-attacks also increases. Enhancing the security features of your payment gateway can help ensure the safety of user's transactions and personal information.

5. Integration with Fiat currencies and traditional payment methods: Although crypto currencies are gaining popularity, many people still prefer to use traditional payment methods like credit cards or bank transfers. Integrating your payment gateway with fiat currencies and traditional payment methods can make it more accessible to a wider range of users.

6. Creating a direct online store: As we grow the core team creates a virtual web application which will deal with real time goods in exchange of crypto currencies and money at real time with their current valuation. We can deal with both money and crypto currencies at a same place and users can deal with both at the same time.

7. Merchant tools and APIs: Providing merchant tools and APIs can enable businesses to integrate your payment gateway into their websites or applications.

Conclusion: -

In conclusion, there are many potential areas for future work in your Crypto currency payment gateway project. Integrating additional Crypto currencies, developing a mobile application, providing merchant tools and APIs, creating a user-friendly interface, enhancing security features, and integrating with traditional payment methods are all important considerations for improving the functionality and accessibility of your payment gateway. By continuing to innovate and stay ahead of the curve, your payment gateway can help bridge the gap between traditional financial systems and the emerging world of crypto currencies.

Result: -

1. Increased adoption of crypto currencies: By creating a user-friendly and secure payment gateway that accepts crypto currencies, you are helping to increase the adoption of crypto currencies as a viable payment method.
2. More payment options for customers: Your payment gateway provides customers with an additional payment option, making it more convenient for them to complete transactions online.
3. Greater financial inclusion: Crypto currencies have the potential to provide greater financial inclusion to people who do not have access to traditional banking systems. Your payment gateway can help facilitate this by providing an alternative method of payment.
4. Potential for increased revenue: If you plan to charge a fee for using your payment gateway, you have the potential to generate revenue from transaction fees.
5. Opportunities for expansion: As crypto currency adoption continues to grow, there may be opportunities to expand your payment gateway to support additional crypto currencies or traditional payment methods, potentially increasing revenue and user adoption.

Overall, the result of your project can have a positive impact on the adoption and accessibility of crypto currencies as a payment method, as well as potential financial benefits for you as the creator of the payment gateway.

References

- [1] Shah, K., & Gohil, V. (2020). : A web- based platform for e-learning. International Journal of Engineering Research and General Science, 4(3), 1390-1396.
- [2] Swan, K. (2001). Virtual interaction: Design factors affecting student satisfaction and perceived learning in asynchronous online courses. Distance Education, 22(2), 306-331.
- [3] Khan, B. H. (2005). Managing e-learning: Design, delivery, implementation, and evaluation. Information Science Publishing.
- [4] Tavangarian, D., Leypold, M. E., Nölting, K., Röser, M., & Voigt, D. (2004). Is e- learning the solution for individual learning? Journal of e-learning and Knowledge Society, 2(1), 49-60.
- [5] Al-Fraihat, D., Joy, M., & Sinclair, J. (2020). The future of e-learning: A shift to knowledge networking and social capital. Education and Information Technologies, 25(6), 3977-3992.
- [6] Khan, R. (2018). Secure online examination system. International Journal of Innovative Technology and Exploring Engineering (IJITEE), 8(8), 2269-2272.
- [7] Siemens, G. (2005). Connectivism: A Learning Theory for the Digital Age. International Journal of Instructional Technology and Distance Learning, 2(1), 3-10
- [8] So, H. J., & Brush, T. A. (2008). Student perceptions of collaborative learning, social presence and satisfaction in a blended learning environment: Relationships and critical factors. Computers & Education, 51(1), 318- 336.
- [9] Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2010). Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies. US Department of Education.
- [10] Liaw, S. S. (2008). Investigating students' perceived satisfaction, behavioral intention, and effectiveness of e-learning: A case study of the Blackboard system. Computers & Education, 51(2), 864-873.