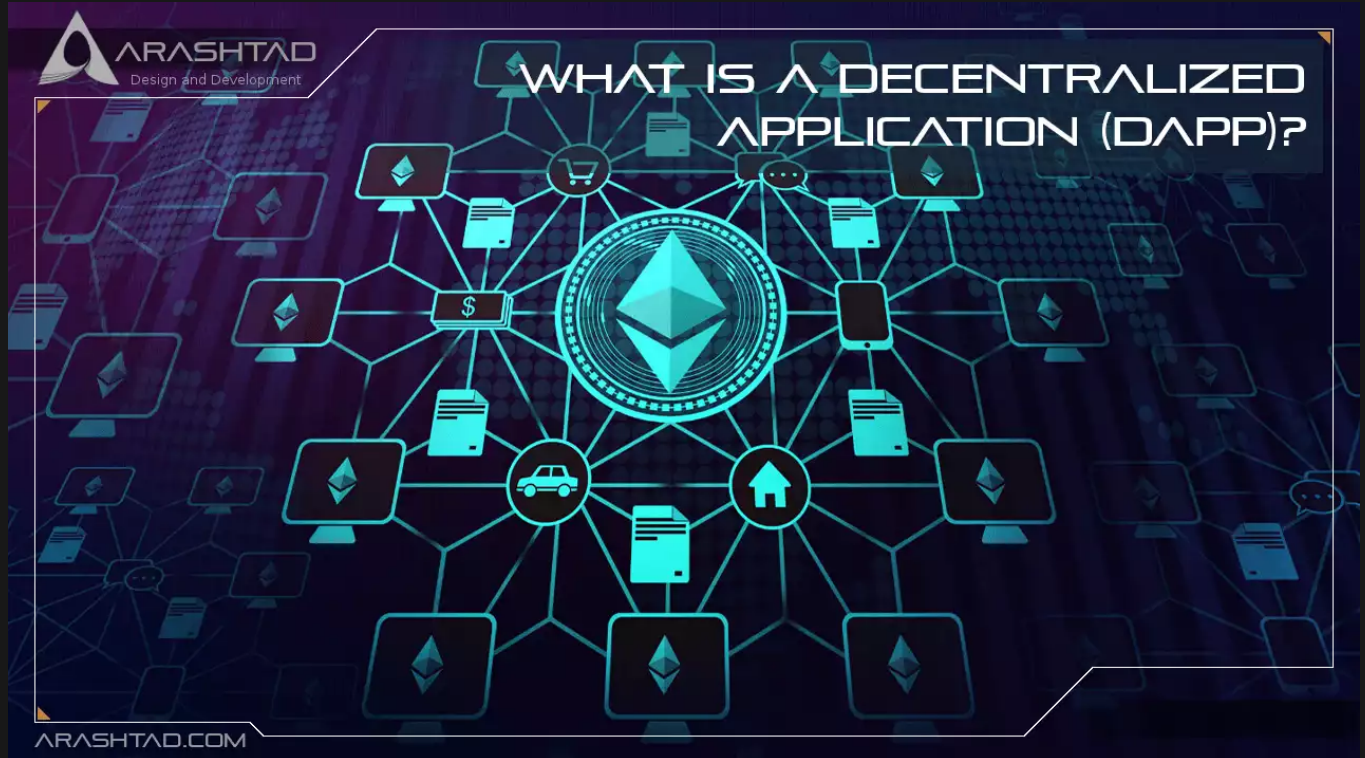


What Is A Decentralized Application (Dapp)?

No comments



Most of the applications we know and work on daily are centralized applications such as Instagram, Facebook, Uber, Twitter, etc. All of these centralized applications are controlled by a central authority. This means that they can be changed, or updated. They can block or delete a particular user's activity. In general, they can do anything they want because they have the authority over the database and the operation of the App. On the other hand, a decentralized application or a dAPP is a kind of digital application that can operate without the control of a single authority. If a Dapp is written and deployed, no one, including the creator, cannot change or control it. Decentralized Applications are based on smart contracts. The first example of a decentralized application is Bitcoin, a peer-to-peer network for operating the transactions and runs automatically on the Bitcoin Blockchain. Of course, many other smart contracts have been written for different purposes in the last decade, most of which are written in Solidity language on the Ethereum blockchain

Understanding the dApps:

A standard web application, such as Twitter, runs on a computer system that is owned and operated by an organization, giving it full authority over the app and its operations. There may be multiple users on one side, but the backend control authority is in the hand of a single organization. DApps can run on a P2P (Peer to Peer) network or a blockchain network. For example, Bitcoin, Tor, and CryptoKitties are applications that run on computers that are part of a P2P network, whereby multiple participants are consuming content, feeding or seeding content, or simultaneously performing both functions. In the context of cryptocurrencies, dApps run on a blockchain network in a public, open-source, decentralized environment and are free from control and interference by any single authority. For example, a developer can create a Twitterlike dApp and put it on a blockchain where any user can publish messages. Once posted, no one—including the app creators—can delete the messages.

Advantages of dApps:

One of the main advantages of the Dapps is the privacy of the users. In other words, in nearly all dApps, there is no need for any user data or login. This benefit helps users to keep their data not only private, but also have faster experience when using a decentralized application. You might have face the annoying process of logging in to a website before using its application. In the Dapps, there is no need to do so. And you can have a faster and safer experience. Another advantage of the decentralized application is the speed of the transactions on different blockchains. You can do any kind of monetary operation such as transferring money, lending and borrowing, and so on in a matter of seconds. Moreover the Dapps are open source and many of the infrastructures are available to quickly create your custom decentralized web application.

disadvantages of dApps:

Contrary to Centralized applications, the dApps or Dapps are in their early stage of development. There are some challenges facing the development and the use of the Dapps. First of all, these applications cannot easily be updated because most of the variables and functions on a smart contract are immutable meaning that they cannot be changes. As a result, lack of control over the probable bugs of the smart contracts can cause problem. However, there are still ways to tackle this issue by upgrading the smart contract. Another common issue of the Dapps is the security. Of course the smart contracts and blockchain are more secure than most of the centralized web applications, but there are still some problems related to the compromised metamask accounts that need to be solved. The compromised metamask accounts are the accounts that have been attacked by a hacker and are not able to act in a normal way because a program like a flash robot is sweeping all the Ethereum funds.

How to create a dapp?

We have provided a lot of tutorials about writing smart contracts, blockchain, solidity, and how to write Dapps on our blog. You can read the guidelines and get started by learning smart contracts and the languages that support them. Solidity and Rust are the two famous languages that smart contracts are written. Many blockchain smart contracts are written in solidity and are supported by the Ethereum platform. The Ethereum Dapps are powered and developed using the Ethereum platform. Ethereum dApps use smart contracts for their logic. They are deployed on the Ethereum network and use the platform's blockchain for data storage. On the other hand, CosmWasm smart contracts are written

in Rust programming language and supported by Cosmos SDK. Cosmos is another platform and blockchain that some other blockchains like Terra network use its CosmWasm smart contract templates to operate the smart contracts.

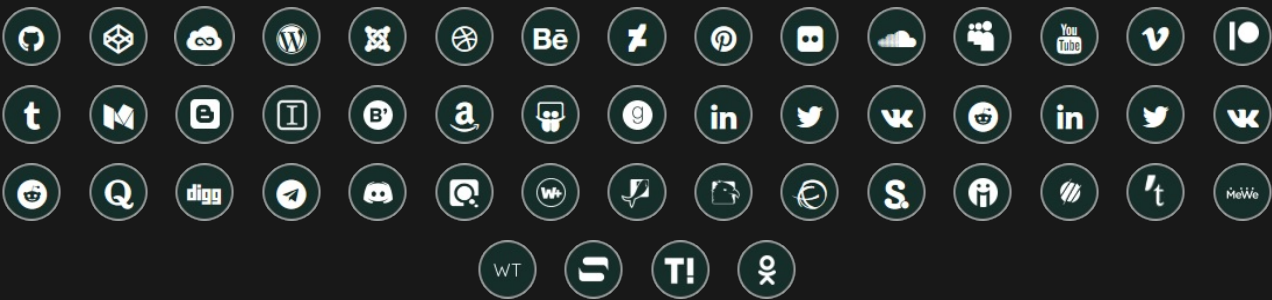
What does the dApp development process look like?

The development of a decentralized application is a staged process performed by a team of full-stack developers, blockchain engineers, and UX designers. Here are the stages a Dapp goes through before a final product can get released: 1. Business and technical analysis. The purpose of the app is established. The specialists decide how blockchain can resolve the problem and what platform to choose for that. 2. Architecture design. It is needed to create a proof of concept. Developers evaluate how different apps' components interact with each other. 3. The creation of prototypes (low-fidelity and high-fidelity designs). 4. The creation of smart contracts and wallets. Smart contracts should execute the app's business logic and functionality. 5. Backend and frontend final development. Here we connect our smart contract to the web application forming the final decentralized application or dApp. 6. The stage of internal smart contract audit. It is conducted to review how requirements and specifications are met before the stage of deployment, otherwise, it is harder to introduce fixes and make updates. 7. Testnet deployment. The performance is evaluated to detect potential security issues and flaws. 8. Mainnet deployment.

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