Move on SUI vs Solidity: Why Move on Sui is a more powerful smart contract language

The blockchain technology ecosystem has evolved due to the impact of smart contracts as a fundamental building block for DeFi applications, digital identity and supply chain management. They are digital, self-executing contracts stored on the blockchain with the sole aim of creating decentralized, transparent and secure financial services.

Its main purpose is to verify a transaction's credibility between anonymous parties or identified parties **without the involvement of third parties**, then automatically execute when predetermined terms and conditions are met.

Solidity, an open source language was created in 2014 as a response to the need for a specialized programming language tailored for creating and implementing smart contracts on the Ethereum blockchain. Its dominance can be attributed to several factors including, its pioneering adoption as well as its seamless integration within the Ethereum ecosystem, and the robust support offered by its developer community.

Although Solidity has gained a significant adoption, it has also faced some limitations. One of the major drawbacks is the risk of security vulnerabilities due to the fact that they are immutable, which means that the contract must be flawless. Hence any mistake in the contract once deployed on the blockchain cannot be fixed and transactions cannot be reversed.

However, Solidity is not the only option for creating smart contracts as there has been a rise of new programming languages leveraging on its drawbacks. One of such is **Move on SUI,** primarily associated with the SUI Blockchain.

In this article, we'll take a closer look at what makes Move on SUI a more powerful smart contract language compared to Solidity. Specifically, we'll cover:

- Understanding the Sui Blockchain
- What is Move on Sui
- Benefits of Move on Sui for Smart Contract Development
- Move on Sui vs Solidity: Why Move on Sui is a more powerful smart contract language
- Conclusion

Let's get right into it

Understanding Sui Blockchain

Sui as defined in the official documentation is a **'Layer 1'** blockchain that aims to make digital asset ownership fast, private, secure, and accessible to everyone. Although traditional blockchain models revolve around accounts and transactions, Sui's approach focuses on object-centric design that provides a more seamless way to interact with the blockchain.

With this approach, developers can leverage the ability to access and modify the objects they own or have permission to use. This in turn eliminates the need for complex transactions or gas fees, hence providing the creation of more expressive and versatile smart contracts built with Move on Sui.

What is Move on Sui?

Move on Sui is a user-friendly programming language that is designed for creating smart contracts on the Sui blockchain. It has a type system that ensures objects can only be modified by it's owners thereby preventing errors and vulnerabilities as well as unauthorized access or manipulation. The language also comes with a set of built-in features and libraries that simplifies the development process and make it easy to create and interact with objects on Sui.

Move on Sui can also be referred to as a bytecode language that compiles the smart contract code into a low-level format that is then executed by the Sui virtual machine (SVM). It has a module system that allows for code reusability and verification, thereby preventing duplication or inconsistency.

Benefits of Move on Sui

Some of the key benefits of using Move on Sui for smart contract development include:

1. With Move on Sui, you have access to various features that are designed to improve both user experience and developer productivity. It also supports a wide range of applications such as games, NFTs, DeFi and many more.
2. With the type system provided by Move on Sui, it ensures the safety and integrity of transactions, thereby reducing the risk of attacks and vulnerabilities.
3. With Move on Sui, you are provided with built-in support for handling digital assets and the implementation of token contracts and other asset-related functionalities.
4. With Move on Sui, you have control over resource ownership and access permissions, enhancing security and reducing the risk of unauthorized operations.

To further understand Move on Sui architecture consult the official documentation for an in-depth explanation.

Move on Sui vs Solidity: Why Move on Sui is a more powerful smart contract language

While Solidity offers a wide range of flexibility as well as a robust support offered by its developer community, it struggles with significant security vulnerabilities. Move on Sui, on the other hand, brings unique advantages to the table by embracing object data-model approach. This section highlights why Move on Sui is a more powerful smart contract language compared to Solidity.

Security

Move on Sui structures smart contracts using an object data model design approach that makes it easy to focus on eliminating common smart contract vulnerabilities while improving ease of implementation. It emphasizes on safety and expressivity with the aim of preventing well known

issues such as reentrancy attacks, fake token approvals commonly leveraged by attackers to steal millions on other platforms.
Move on Sui also allows for higher throughput via parallel processing, which in turn is beneficial for applications requiring high transaction throughput.

Code Verification and Sandbox Execution

Move on Sui, as an interpreted language, lacks a compiler hence eliminating potential compiler bugs which makes it inherently more secure than Solidity. It then results in a secure execution environment. It also allows for developers to verify the correctness of their code thereby ensuring the reliability and security of the contracts.
Move on Sui also makes it easier for developers to transition from web2 to web3 without understanding the underlying infrastructure.

High Performance and Low Latency

One of the constraints of writing smart contracts in Solidity on the Ethereum Blockchain, aside from its high fee structure, is that **it can't handle very many transactions per second.** Although the Ethereum Blockchain has been able to leverage on Layer 2 blockchains to provide a faster, cheaper route to executing transactions. Move on Sui on the other hand, boasts of high transactions per seconds (tps) throughput.

Conclusion

In this article, you were introduced to Move on Sui, the benefits and why Move on Sui is a more powerful smart contract language compared to Solidity. One key takeaway is that Move on Sui prioritizes security and transaction safety thereby preventing errors and vulnerabilities as well as unauthorized access or manipulation.

For further detailed information, check out the official documentation provided by the Move team. Thanks for reading. If you have any questions or inquiries, feel free to reach out to me on Twitter: @CalebJ or LinkedIn: @CalebJ.