Sygma DevRel Technical Task

Task Overview

The objective of these tasks is to demonstrate proficiency in using blockchain tools to deploy smart contracts on multiple chains and interact with them across those chains. Candidates will be required to document their process, identifying and mitigating any challenges encountered, which is crucial for a DevRel role.

Task 0: Documentation

Objective:

Create a detailed guide documenting the execution of Tasks 1 and 2, emphasizing the identification of challenges and the provision of effective solutions or workarounds. This documentation should assist users in navigating through similar challenges by offering clear, actionable advice. The document should conclude with feedback on the tools used, including suggestions for improvement.

Details:

- **Guide Creation:**

  Write a narrative document that not only instructs on how to replicate Tasks 1 and 2 but also aids in troubleshooting. This guide should clearly articulate the steps, tools, and commands used. Don't hesitate to reference documentation and other Sygma guides for specific parts instead of rewriting word-by-word instructions for specific steps.

- **Challenge Recognition and Solution Provision:**

  Identify and document any difficulties encountered during the deployment and interaction phases. For each challenge:

  - Provide a clear description of the issue.
  - Offer a solution or workaround if available. If no solution is feasible, document the challenge and suggest potential improvements.
  - Illustrate issues and solutions with screenshots, code snippets, or error logs as appropriate.

- **Feedback and Improvement Suggestions:**

  Conclude the document with a section dedicated to feedback on the Sygma tools used. This section should cover:

  - User experience and ease of use.
  - Effectiveness of existing guides (like the Medium guide) and potential enhancements.
  - Suggestions for features or improvements that would streamline the process.

Task 1: Contract Deployment Using Sygma's Multichain-Deploy Tool

Objective:

Deploy an EVM smart contract using Sygma's `multichain-deploy` tool (hardhat / foundry).

Details:

- Use the Hardhat or Foundry plugin developed by Sygma called `multichain-deploy`
- Deploy the contract to the Sepolia and Holesky testnets, ensuring consistent addressing across chains.
- The contract to deploy can be the modified `Lock.sol` as suggested in the guide or any other suitable contract.
- Document the specific commands and settings used for the deployment, referencing the Medium guide as necessary.

Resources:

- Hardhat plugin Medium guide
- Foundry plugin Medium guide

Task 2: Cross-Chain Call Using Sygma SDK

Objective:

Perform a cross-chain call to the previously deployed contract using the Sygma SDK, demonstrating the SDK's capabilities for generic message passing (GMP) and interacting with smart contracts across different blockchain networks.

Details:

- Set up the Sygma SDK based on the generic message passing example from the SDK's repository.
- Use the Sygma SDK to execute a cross-chain function call. This task involves calling a function on the contract deployed in Task 1 from another blockchain, using the GMP functionality of the SDK.
- Modify the GMP example script to interact with your specific deployment.
- Links to actual transactions on the blockchain should be included to verify and illustrate the cross-chain interaction.

Resources:

- Sygma SDK Generic Message Example
- Generic Message Passing docs

Submission Guidelines

- **GitHub Repository:** Submit all source code as a GitHub repository. If you forked the SDK repository for Task 2, you can also submit the URL to your fork.
- **Documentation:** Include your guide-style document as a Markdown file that can be sent separately (for example, as a hack.md file) or as part of the submitted GitHub repository.

Evaluation Criteria

- **Correctness:** Successful deployment and interaction with the smart contracts across different testnets.
- **Clarity and Completeness:** Quality of the documentation, including depth, clarity, and how effectively it communicates the process and solutions to potential challenges.
- **Technical Proficiency:** Demonstrated ability to utilize blockchain deployment and interaction tools.

- **Problem Solving:** Creativity and effectiveness in identifying and addressing hurdles throughout the deployment and interaction processes.