1 Solidity: Beginner Smart Contract

Objectives

- Learn Solidity syntax and the basic structure of a smart contract.
- Use key Solidity concepts, including state variables, functions, arrays, mappings, and structs.
- Build functionality to store and retrieve data on the Ethereum blockchain.
- Write efficient and readable Solidity code.

Assignment Description

In this assignment, you will design and write a Solidity smart contract named `Storage` that stores and manages data on the Ethereum blockchain. The contract should include the following features:

1. **Store and Retrieve a Favorite Number:**
   - Create a function to store a single number.
   - Provide another function to retrieve the stored number.
2. **Add and Manage a List of People:**
   - Define a `Person` structure containing a `name` and `favoriteNumber`.
   - Create an array to store multiple `Person` objects.
   - Implement a function to add new people to the list.
3. **Use a Mapping for Quick Data Lookup:**
   - Implement a mapping to relate a person's name to their favorite number.
   - Create functionality to retrieve a favorite number by name.

Assignment Tasks

1. **Write the Contract:** Write the Solidity code for the `Storage` smart contract, ensuring it includes:
   - A state variable to store a number.
   - A `Person` struct to represent a person.
   - An array to store multiple people.
   - A mapping to link names to favorite numbers.
   - Functions to store, retrieve, and add data.

2. **Test the Contract:**
    - Deploy the contract using Remix or any other Ethereum development environment.
    - Test all functions to ensure they work correctly.
3. **Code Documentation:**
    - Add comments to explain the purpose of each part of the code.

Submission Instructions

- Please upload your .sol file to the elearn platform.
  Deadline:
  (December 06, 2024), (Azar 16, 1403), (Jumada al-Thaniyah, 04, 1446)

If you have any questions or need assistance with the tasks, feel free to reach out.

Best regards,

Reza Nematpour