MyToken Smart Contract

This Solidity program is a simple token contract that demonstrates the basic functionality of creating, minting, and burning tokens. The purpose of this program is to serve as a starting point for those who are new to Solidity and want to get a feel for how token contracts work.

Description

This program is a simple contract written in Solidity; a programming language used for developing smart contracts on the Ethereum blockchain. The contract defines a custom token with the following features:

- Public variables to store the details about the token (Token Name, Token Abbreviation, Total Supply).
- A mapping of addresses to balances.
- A mint function to create new tokens and assign them to an address.
- A burn function to destroy tokens from an address, ensuring the address has enough balance to burn.

The program serves as a simple and straightforward introduction to Solidity token contracts and can be used as a stepping stone for more complex projects in the future.

Getting Started

Executing the Program

To run this program, you can use Remix, an online Solidity IDE. To get started, go to the Remix website at https://remix.ethereum.org/.

Steps to Deploy the Contract:

1. **Create a New File**:
   - On the Remix website, create a new file by clicking on the "+" icon in the left-hand sidebar.
   - Save the file with a .sol extension (e.g., MyToken.sol).

2. **Code**

```
// SPDX-License-Identifier: MIT
pragma solidity 0.8.18;
contract MyToken {
```

```
    string public tokenName = "Harsh";
    string public tokenAbbrv = "MTK";
    uint256 public totalSupply;

    mapping(address => uint256) public balances;

    function mint(address _to, uint256 _value) public {    infinite gas
        totalSupply += _value;
        balances[_to] += _value;
    }

    function burn(address _from, uint256 _value) public {    infinite gas
        require(balances[_from] >= _value, "Insufficient balance to burn");
        totalSupply -= _value;
        balances[_from] -= _value;
    }
}
```

3. **Compile the Code**:
   - Click on the "Solidity Compiler" tab in the left-hand sidebar.
   - Make sure the "Compiler" option is set to "0.8.18" (or another compatible version).
   - Click on the "Compile MyToken.sol" button.

4. **Deploy the Contract**:
   - Click on the "Deploy & Run Transactions" tab in the left-hand sidebar.
   - Select the "MyToken" contract from the dropdown menu.
   - Click on the "Deploy" button.

5. **Interact with the Contract**:
   - Once the contract is deployed, you can interact with it by calling the mint and burn functions.
   - To mint tokens, input the address and value, then click on the "mint" function.
   - To burn tokens, input the address and value, then click on the "burn" function.

This will allow you to create and destroy tokens, updating the total supply and balances accordingly.