Tokensale Docs

State Variables

- `deposits` (mapping): Stores the deposited amounts per user in stablecoins.
- `allocations` (mapping): Keeps track of allocated tokens per user based on their deposits.
- `TOKEN_PRICE`, `TOKEN_ALLOCATION`: Constants representing the fixed token price in stablecoin and tokens allocated per stablecoin.
- `USDC_ADDRESS`, `USDT_ADDRESS`, `DAI_ADDRESS`: Addresses of supported stablecoins.
- `tokenAddress`: Address of the token contract for the private sale.
- `saleActive`: Boolean status to indicate whether the sale is active.
- `minBuyAmount`, `maxBuyAmount`: Minimum and maximum buying amounts allowed.
- `owner`: Address of the contract owner.

Modifiers

- `onlyOwner`: Restricts certain functions to be accessible only by the contract owner.
- `saleIsOpen`: Ensures that functions are accessible only if the sale is active.

Constructor

Initializes the contract with the token address, minimum buy amount, maximum buy amount, and sets the contract owner.

Functions Explanation

`startSale()`
- Access: Only the contract owner can execute this function.
- Purpose: Initiates the private sale.
- Modifiers:
    - `onlyOwner`: Restricts access to the owner.

- Usage: The owner calls this function to activate the private sale, allowing users to deposit stablecoins for token allocation.

`endSale()`

- Access: Only the contract owner can execute this function.
- Purpose: Concludes the private sale.
- Modifiers:
  - `onlyOwner`: Ensures only the owner can end the sale.
- Usage: The owner invokes this function to terminate the private sale, preventing further deposits.

`deposit(uint256 amount, address stablecoin)`

- Access: Open to all during an active sale.
- Purpose: Enables users to deposit stablecoins in exchange for token allocation.
- Parameters:
  - `amount`: The quantity of stablecoins to deposit.
  - `stablecoin`: Address of the stablecoin to deposit.
- Usage: Users provide the desired stablecoin amount to the contract during an active sale, receiving an allocation of tokens based on the fixed token price and allocation.

`getAllocatedTokens(address user)`

- Access: Public function.
- Purpose: Retrieves the allocated tokens for a specific user.
- Parameters:
  - `user`: The address of the user for whom tokens are to be retrieved.
- Returns: The number of tokens allocated to the user.
- Usage: Anyone can call this function to view the number of tokens allocated to a particular user based on their deposited stablecoins.

`withdrawTokens()`

- Access: Only the contract owner can execute this function.
- Purpose: Allows the owner to withdraw remaining stablecoins after the sale.
- Modifiers:
  - `onlyOwner`: Ensures only the owner can withdraw remaining stablecoins.
- Usage: The contract owner utilizes this function to retrieve remaining stablecoins after concluding the sale.

`setMinMaxBuyAmount(uint256 _minBuyAmount, uint256 _maxBuyAmount)`

- Access: Only the contract owner can execute this function.
- Purpose: Enables the owner to set the minimum and maximum buying amounts.
- Parameters:
    - `_minBuyAmount`: The new minimum buy amount.
    - `_maxBuyAmount`: The new maximum buy amount.
- Modifiers:
    - `onlyOwner`: Restricts access to the owner.
- Usage: The owner adjusts the minimum and maximum buying amounts allowed during the private sale.

`transferOwnership(address _newOwner)`

- Access: Only the contract owner can execute this function.
- Purpose: Facilitates the transfer of ownership of the contract.
- Parameters:
    - `_newOwner`: The address of the new owner.
- Modifiers:
    - `onlyOwner`: Ensures only the current owner can transfer ownership.
- Usage: The current owner designates a new address as the contract's owner.

Example Usage

Suppose the contract is initialized with the token address, minimum buy amount of 100, and maximum buy amount of 1000.

Starting the Sale:
- `startSale()`: Activates the private sale, allowing users to deposit stablecoins.

User Deposits:
- `deposit(500, USDC_ADDRESS)`: User deposits 500 USDC for the private sale.
- `getAllocatedTokens(0xUserAddress)`: Returns the number of tokens allocated for the user based on their deposit.

Ending the Sale:
- `endSale()`: Terminates the sale, preventing further deposits.
- `withdrawTokens()`: Allows the contract owner to withdraw remaining stablecoins after the sale.

Adjusting Buy Amounts:
- `setMinMaxBuyAmount(200, 1500)`: Changes the minimum buy amount to 200 and maximum buy amount to 1500.

Transferring Ownership:

- `transferOwnership(0xNewOwnerAddress)`: Transfers ownership of the contract to a new address.