EX.NO: 3 Ecommerce System for Remote Purchasing

Date: 12/07/2023

Aim:

To implement the Ecommerce System for the remote purchasing system by using Solidity Smart control

Procedure:

Step1: Open the remix IDE

Step2: Choose the solidity compiler version

Step3: Allow the owner to add the products specify their name, description, price and initial quantity

Step4: Declare the product information such as product id, name, price, quantity, description and product is available or not

Step5: Buyers can purchase the products by providing the product ID and the desired quantity

Step6: Call the withdrawfunds() function to withdraw the contract's balance

Step7: If the product is not available then return "Product Not Available!!!"

Step8: If any insufficient payment is done then return "Insufficient Payment" message

Step9: If the buyer has overpaid then refund the excess amount to the buyer

Step10: After processing all the steps then stop the transaction

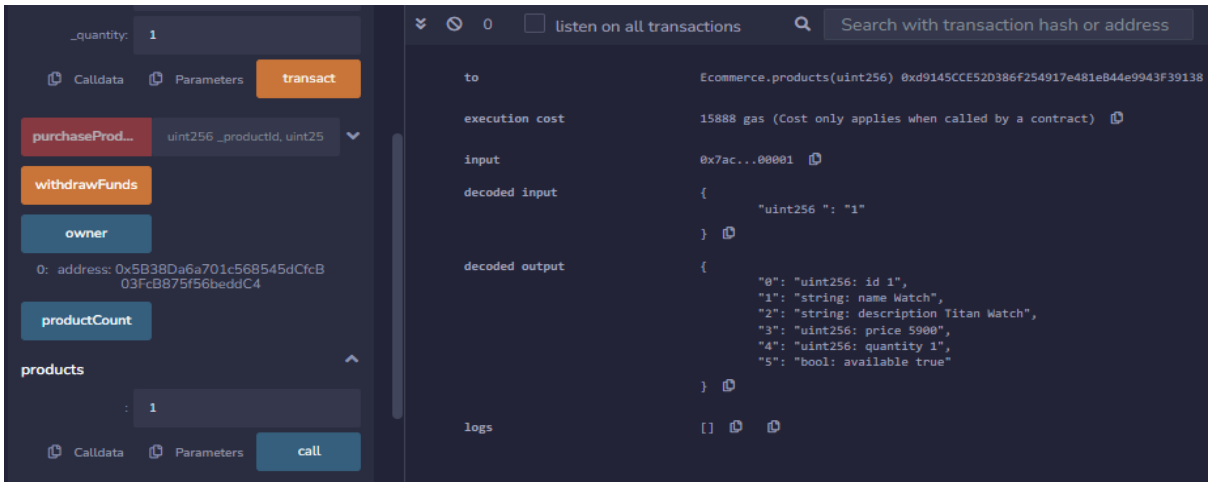
Program:

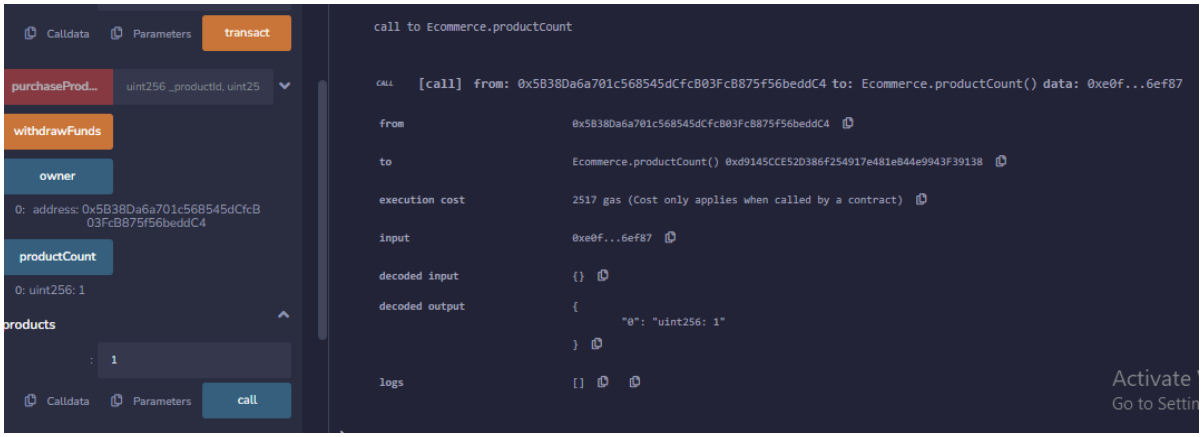
```
pragma solidity ^0.8.0;

contract Ecommerce {
    address public owner;
    uint256 public productCount;
    struct Product {
        uint256 id;
        string name;
        string description;
        uint256 price;
        uint256 quantity;
```

```
    bool available;
}
mapping(uint256 => Product) public products;
event ProductAdded(uint256 id, string name, uint256 price, uint256 quantity);
event ProductPurchased(uint256 id, string name, uint256 quantity, uint256 totalPrice);
constructor() {
    owner = msg.sender;
    productCount = 0;
}
modifier onlyOwner() {
    require(msg.sender == owner, "Only the owner can perform this action");
    _;
}
function addProduct(
    string memory _name,
    string memory _description,
    uint256 _price,
    uint256 _quantity
) public onlyOwner {
    productCount++;
    products[productCount] = Product({
        id: productCount,
        name: _name,
        description: _description,
        price: _price,
        quantity: _quantity,
        available: true
    });
    emit ProductAdded(productCount, _name, _price, _quantity);
}
```

```
    function purchaseProduct(uint256 _productId, uint256 _quantity) public payable {
        require(_quantity > 0, "Quantity must be greater than zero");
        require(products[_productId].available, "Product is not available");
        require(products[_productId].quantity >= _quantity, "Not enough quantity available");
        require(msg.value >= products[_productId].price * _quantity, "Insufficient payment");
        products[_productId].quantity -= _quantity;
            if (msg.value > products[_productId].price * _quantity) {
           payable(msg.sender).transfer(msg.value - (products[_productId].price * _quantity));
        }
        emit ProductPurchased(_productId, products[_productId].name, _quantity,
products[_productId].price * _quantity);
    }

    function withdrawFunds() public onlyOwner {
        payable(owner).transfer(address(this).balance);
    }
}
```

Output:





Result:

Thus the Ecommerce system for remote purchasing has been implemented and executed out successfully.