Lottery Smart Contract Project

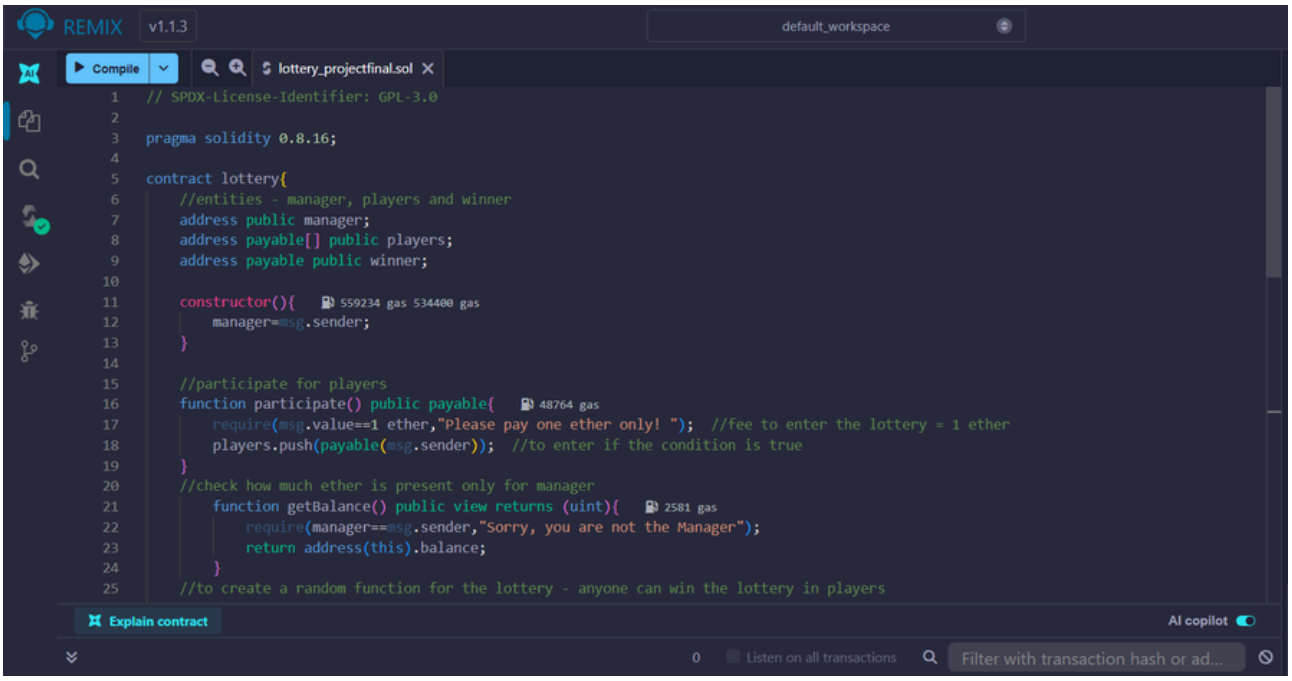
Program for the Lottery_SmartContract :-

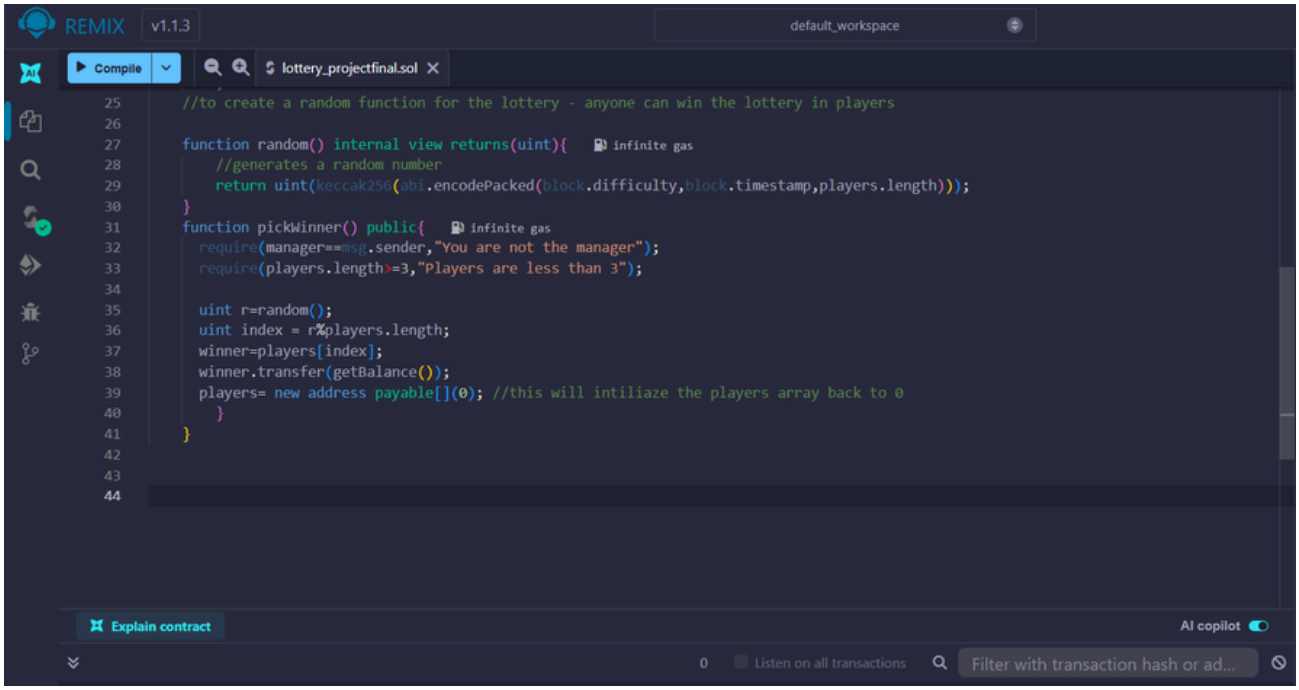
```
// SPDX-License-Identifier: GPL-3.0

pragma solidity 0.8.16;                    //older version for the “block.difficulty” feature...

contract lottery{
   //entities - manager, players and winner
   address public manager;
   address payable[] public players;
   address payable public winner;

   constructor(){
      manager=msg.sender;
   }

   //participate for players
   function participate() public payable{
      require(msg.value==1 ether,"Please pay one ether only! ");        //fee to enter the lottery = 1 ether
      players.push(payable(msg.sender));                                //to enter if the condition is true
   }
   //check how much ether is present only for manager
      function getBalance() public view returns (uint){
         require(manager==msg.sender,"Sorry, you are not the Manager");
         return address(this).balance;
      }
   //to create a random function for the lottery - anyone can win the lottery in players
```

```
function random() internal view returns(uint){
    //generates a random number
    return uint(keccak256(abi.encodePacked(block.difficulty,block.timestamp,players.length)));
}

function pickWinner() public{
  require(manager==msg.sender,"You are not the manager");
  require(players.length>=3,"Players are less than 3");

  uint r=random();
  uint index = r%players.length;
  winner=players[index];
  winner.transfer(getBalance());
  players= new address payable[](0);                    //to intiliaze the players array back to 0
    }
}
```

Implementation of the program :-

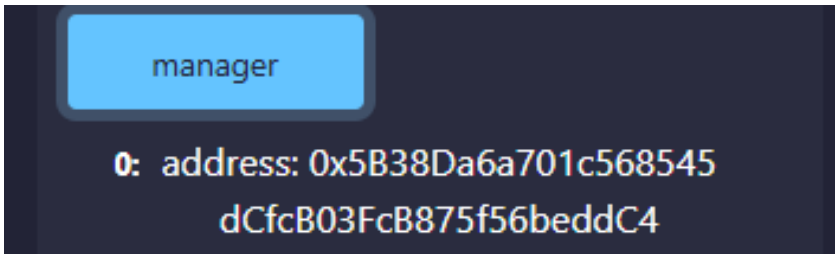
In Solidity :-



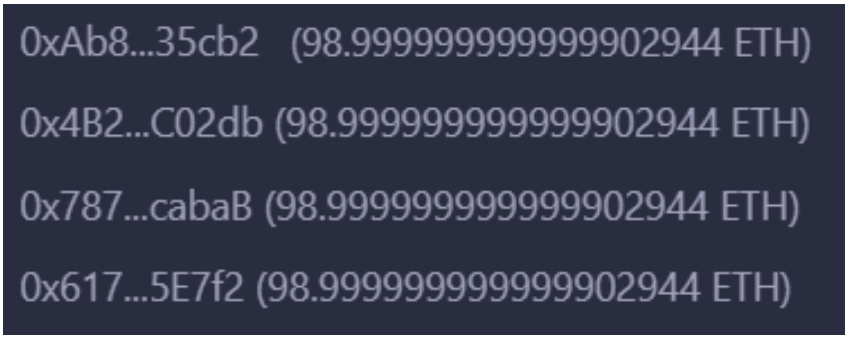


Deployment of the program :-

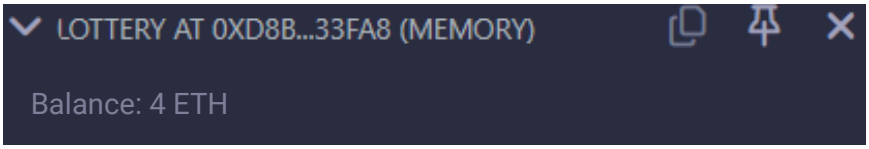
Manager in the Lottery :-



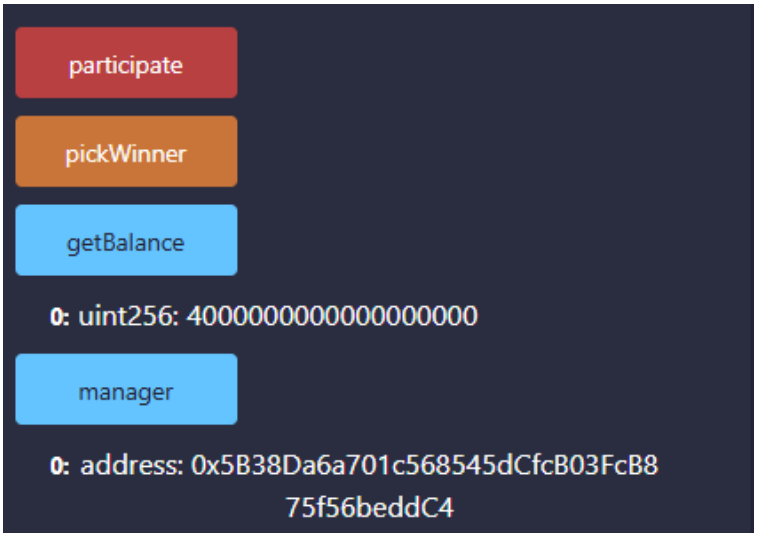
Players in the lottery (Total-4):-



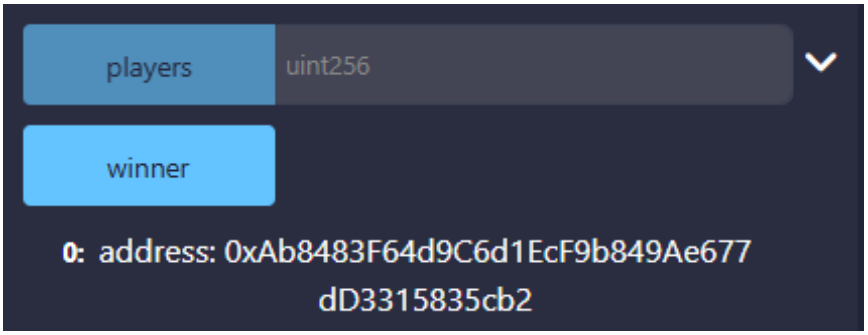
Balance after adding fees to participate in the lottery :-



Checking the Balance by the Address of Manager :-



Getting the Winner of the Lottery :-



Transactions History :-

Winner Address has got the amount :-