Blockchain HW1

Task 1: Deploy ERC20 Token

Contract Address: `0x8a899A996b233bFFc73cBDEf0BDB8817fcd6a4Fb`

Demo website: `https://pepe-card.vercel.app/`

Game Description

PepeCard is a risk-reward card flipping game implemented as a smart contract. Here's how it works:

Game Rules

- Players start by buying in with tokens (minimum 100 wei)
- There's a 5x5 grid of cards (25 total)
- One card is randomly selected as the "ghost card"
- Players flip cards one at a time
- Each safe flip earns increasing rewards
- If the ghost card is flipped, the game ends and all accumulated rewards are lost
- Players can "Leave" at any time to collect their accumulated rewards

Reward Mechanism

- Rewards increase quadratically with each successful flip
- House edge is 5%
- Base reward formula: $A * (n^2 + n)$, where:
  - $A = (25 * buyin * 0.95) / (5200 * 2)$
  - n = number of successful flips

- Players can redeem(burn) tokens for ETH at a rate of 10000:1 with a 2% redemption fee

Only Owner Functions
- `TakeOut()`: Allows the owner to withdraw all ETHs from the contract
- `FreeToken()`: Mints 10000 tokens to the owner

Failed Transaction

When a non-owner tries to call the `FreeToken()` function, the transaction will fail with `OwnableUnauthorizedAccount` message. ex:
`0xee9389db90693ab65c2addf7b9cd97aabe6e1836413a574924c8b5524aa75829`

Task 2: Deploy ERC721 Token