NEURONET

YOUR NEURAL WELLNESS PROTOCOL, SECURED BY BLOCKCHAIN

BLOCKCHAIN TECHNOLOGY PROJECT

PROPOSED BY :

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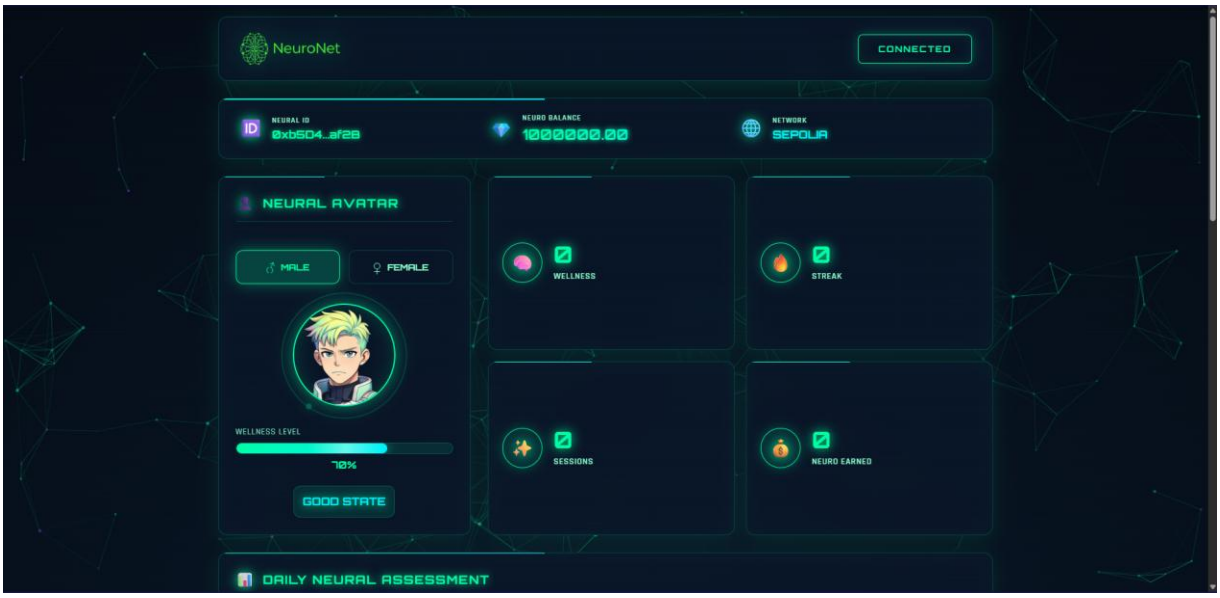
1. Project Overview



The dApp, **NeuroNet**, is a Decentralized Neural Wellness Protocol built around the **Cyberpunk/Bio-Tech** theme. The project utilizes blockchain technology to create a self-contained ecosystem that incentivizes users to regularly monitor and report their mental and emotional state in exchange for a custom cryptocurrency, the **NeuroToken (NEURO)**.

The design embodies the required creativity by blending futuristic aesthetics with a functional use case:

- **Custom Token Meaning:** The NeuroToken (NEURO) is earned exclusively through positive health compliance (daily check-ins), tying the token's value directly to self-improvement and on-chain engagement.
- **Visual Originality:** The frontend adheres to the Cyberpunk style using a dark background, neon mint/cyan glow effects, sharp typography (Orbitron/Rajdhani), and glitch-style scanline overlays, creating an immersive "neural interface" experience.
- **Unique Functionality:** The core mechanism is the gamified daily assessment, which rewards users with a token bonus based on their consecutive check-in **Streak**.

2. Smart Contract Design

The dApp is powered by the NeuroToken.sol smart contract, a custom implementation of the ERC-20 standard enhanced with unique mood assessment and token minting protocol.

2.1. Contract Details

Detail	Value
Contract Name	NeuroToken
Token Symbol	NEURO
Base Standard	ERC-20 (Custom Implementation)
Solidity Version	^0.8.0 (Compiled with 0.8.20)
Testnet Deployed	Sepolia
Deployed Contract Address	0x95A3486f959D8CCa962B9eDD89df2D0c3D363232

2.2. Core Functionality:

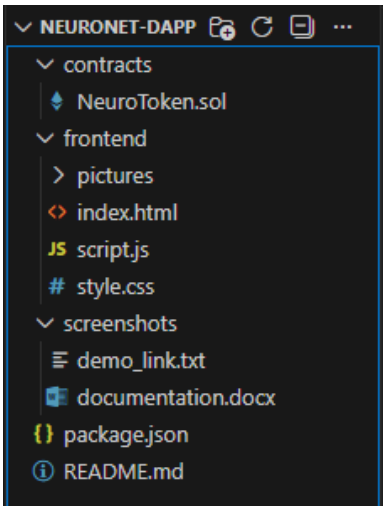
Function	Type	Description
constructor(uint _initialSupply)	Public	Initializes the contract, setting the deployer as the owner and minting an initial supply of NEURO tokens to their address for immediate testing.
transfer(address _to, uint _value)	Public	Standard ERC-20 function allowing users to transfer NEURO tokens to any other address.
submitMoodAssessment(uint moodScore, uint stressLevel, uint energyLevel)	**Public (Write)**	**CORE dApp LOGIC.** The primary function for user interaction. It performs four actions: 1) Ensures the user has not checked in today. 2) Calculates a token reward, applying a bonus based on the current streak. 3) Mints the tokens and credits them to the user's balance. 4) Updates the user's currentMood, streak, and lastCheckInDay.
balanceOf(address account)	View	Returns the NEURO token balance for any given address using the custom userProfiles mapping.
getUserStats(address user)	**Public (View)**	**CORE dApp LOGIC.** Retrieves the user's comprehensive wellness profile, including balance, currentMood, checkIns, lifetimeEarned, and dynamically calculates the current streak based on the block.timestamp to reflect real-time status.

3. Deployment & Testing

The NeuroToken.sol contract was deployed on the Sepolia Testnet using Remix. This confirms the application is tested in a public, live environment.

3.1. Folder Structure Verification

The project adheres to the required submission structure.



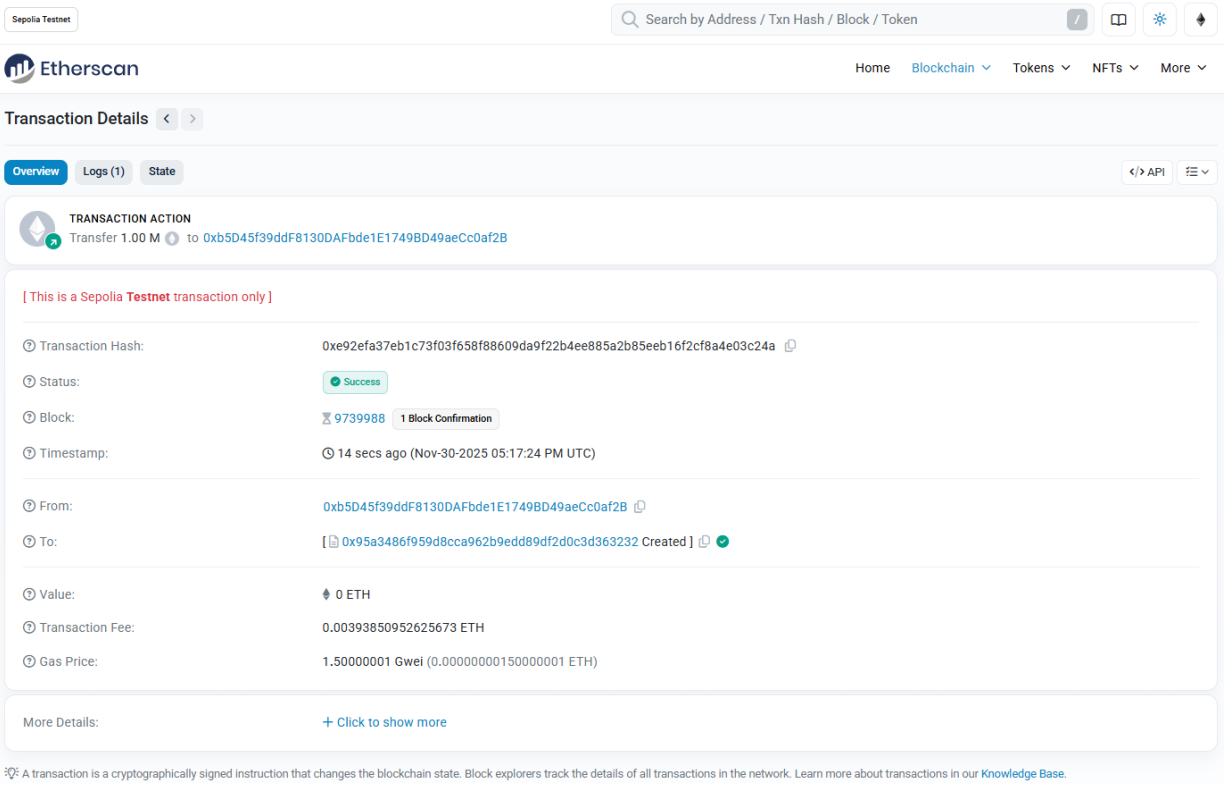
3.2. Testnet Deployment Proof

The successful deployment transaction proves the contract's existence on the Sepolia testnet.

3.3. Etherscan Verification

The contract and its deployment transaction are publicly verifiable via the Etherscan link below, confirming successful deployment.

Etherscan Transaction Link:
https://sepolia.etherscan.io/tx/0xe92efa37eb1c73f03f658f88609da9f22b4ee885a2b85eeb16f2cf8a4e03c24a


Sepolia Testnet
Search by Address / Txn Hash / Block / Token
Etherscan
Home
Blockchain
Tokens
NFTs
More
Transaction Details
Overview
Logs (1)
State
API
TRANSACTION ACTION
Transfer 1.00 M to 0xb5D45f39ddF8130DAFbde1E1749BD49aeCc0af2B
[This is a Sepolia Testnet transaction only]
Transaction Hash:
0xe92efa37eb1c73f03f658f88609da9f22b4ee885a2b85eeb16f2cf8a4e03c24a
Status:
Success
Block:
9739988
1 Block Confirmation
Timestamp:
14 secs ago (Nov-30-2025 05:17:24 PM UTC)
From:
0xb5D45f39ddF8130DAFbde1E1749BD49aeCc0af2B
To:
[0x95a3486f959d8cca962b9edd89df2d0c3d363232 Created]
Value:
0 ETH
Transaction Fee:
0.00393850952625673 ETH
Gas Price:
1.50000001 Gwei (0.000000001500000001 ETH)
More Details:
+ Click to show more
A transaction is a cryptographically signed instruction that changes the blockchain state. Block explorers track the details of all transactions in the network. Learn more about transactions in our Knowledge Base.

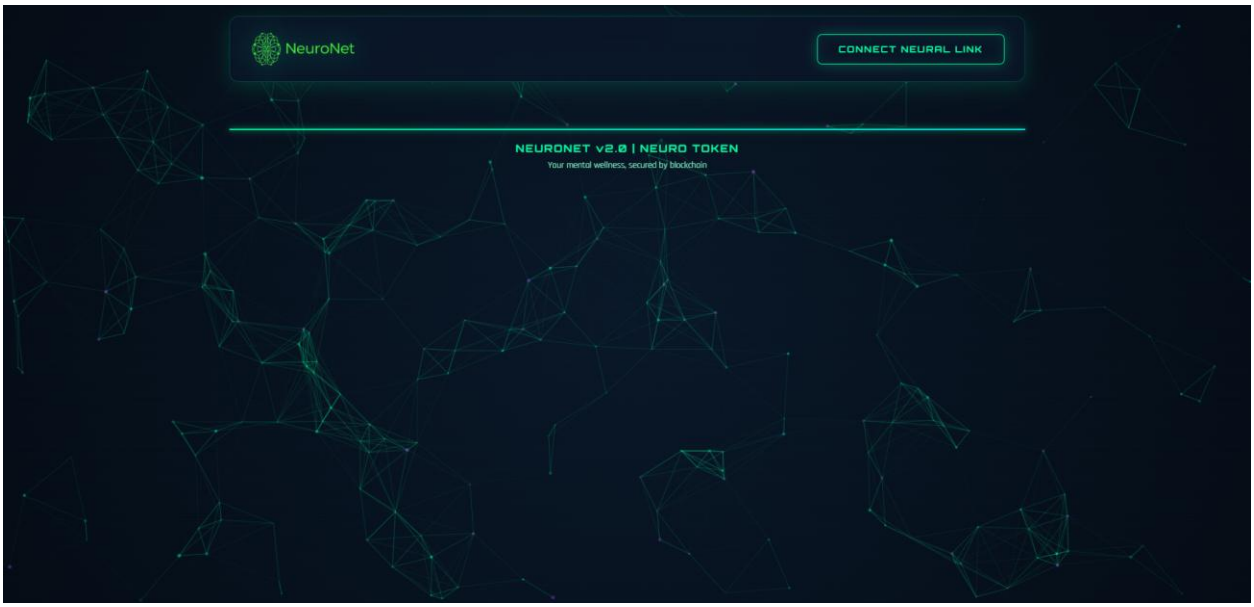
4. Frontend Integration & Functionality

The frontend is a responsive single-page web application (index.html) using Ethers.js to communicate with the deployed contract at address: 0x95A3486f959D8CCa962B9eDD89df2D0c3D363232.

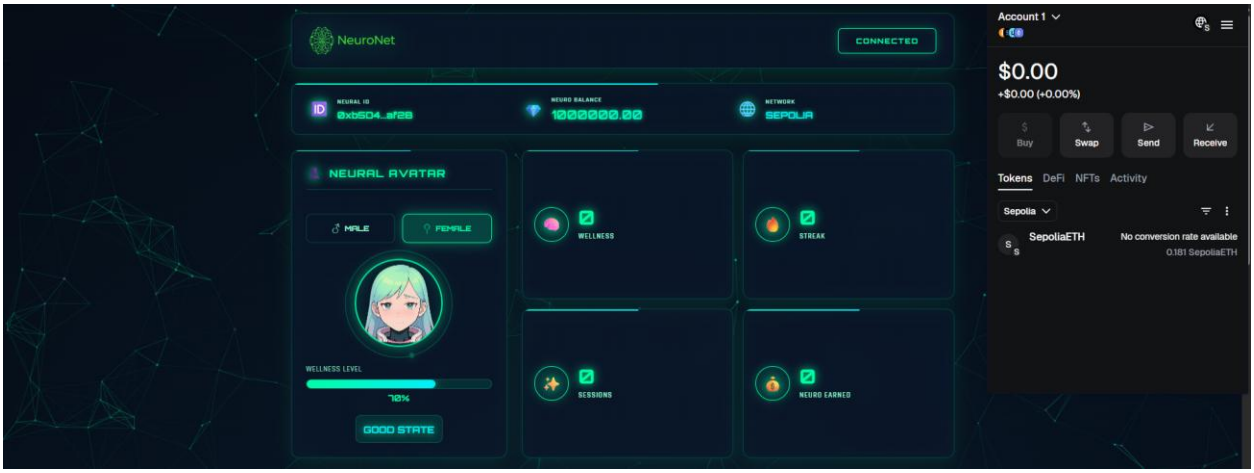
4.1. Connect Wallet & Initial State

The "CONNECT NEURAL LINK" button initiates a connection via MetaMask, setting up the Ethers.js provider and signer, then fetching and displaying the user's token balance and Neural ID.

Before User clicks Connect Neural Link:



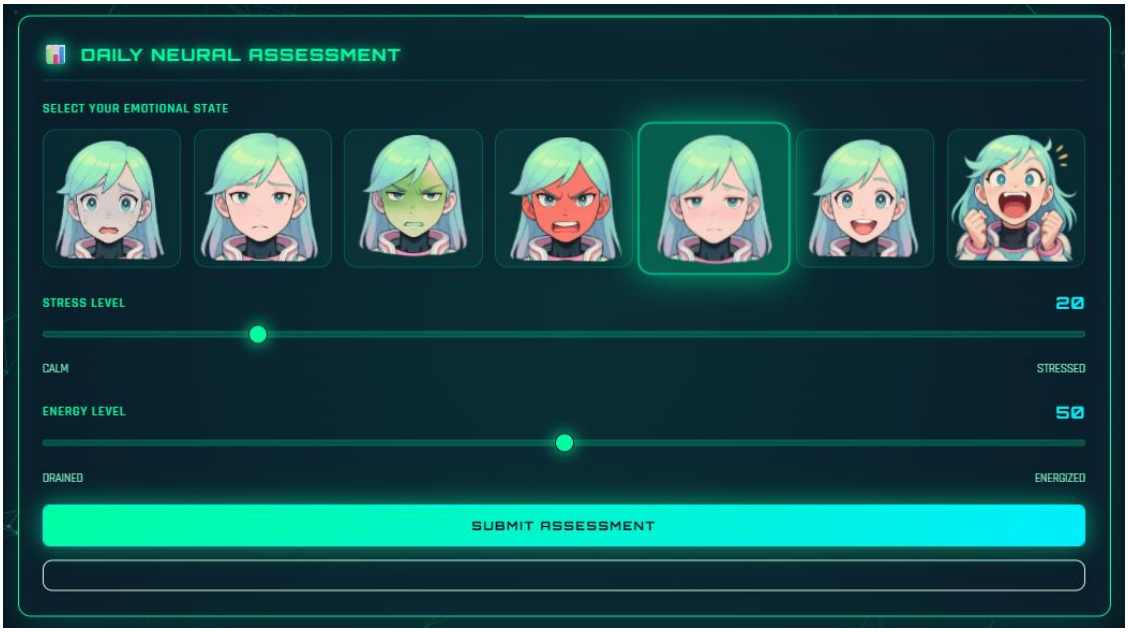
After User clicks Connect Neural Link, they can now Select any Character (Male/Female):

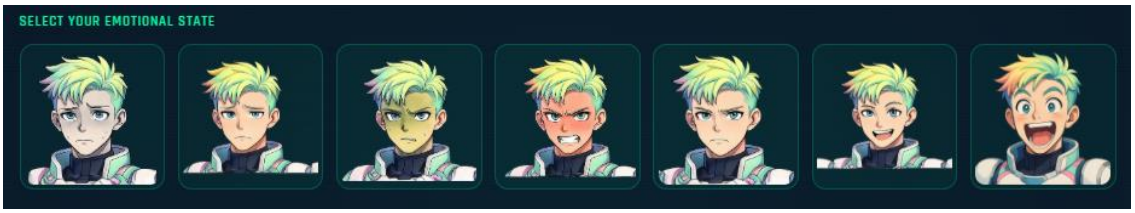


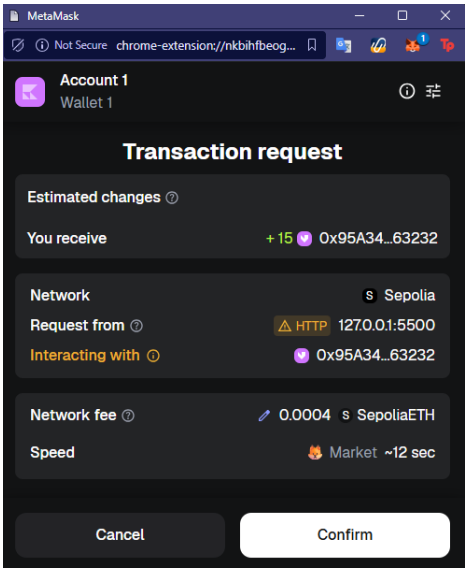
4.2. Custom Function: Daily Neural Assessment

This demonstrates the core utility of the dApp, executing the custom minting function (submitMoodAssessment).

- **Input:** The user selects an emotional state and sets Stress/Energy levels.

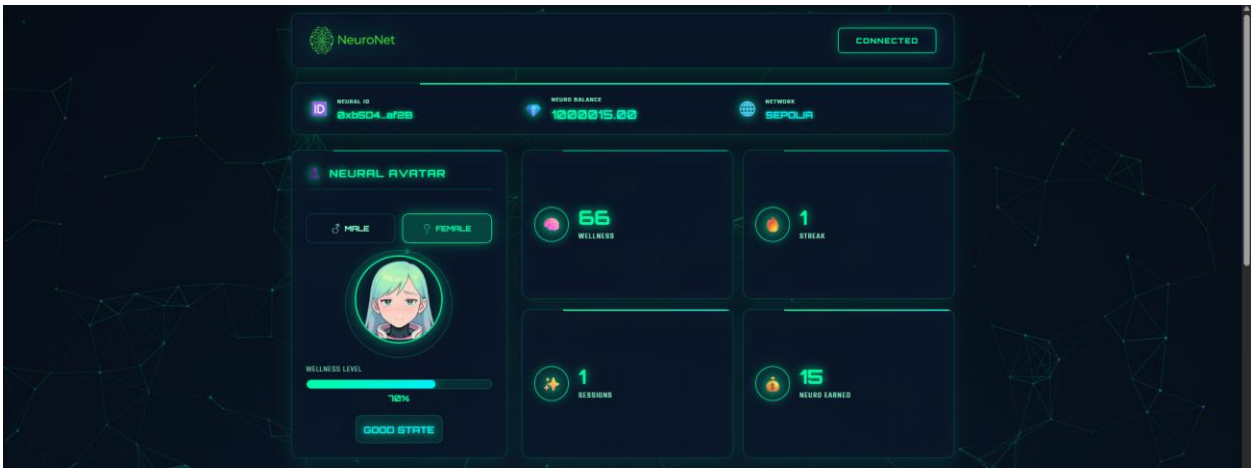






State Change Proof: Upon confirmation of the blockchain transaction, the following stats are updated via a call to getUserStats:

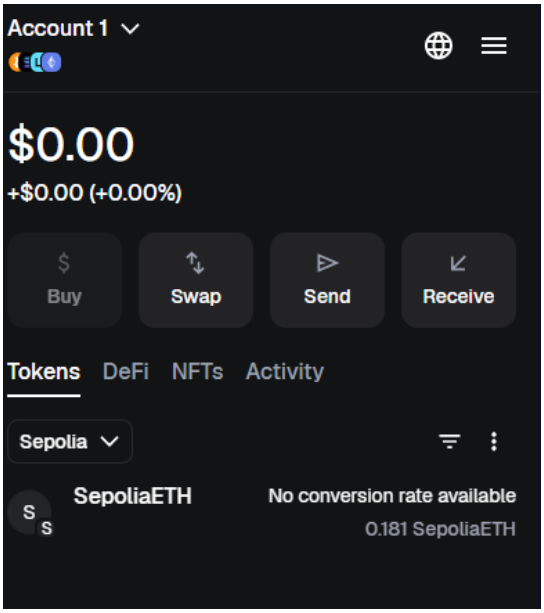
- NEURO BALANCE increases (token reward minted).
- STREAK increases (demonstrating successful daily compliance).
- WELLNESS SCORE updates based on the inputs.
- The NEURAL AVATAR changes state to reflect the new currentMood.

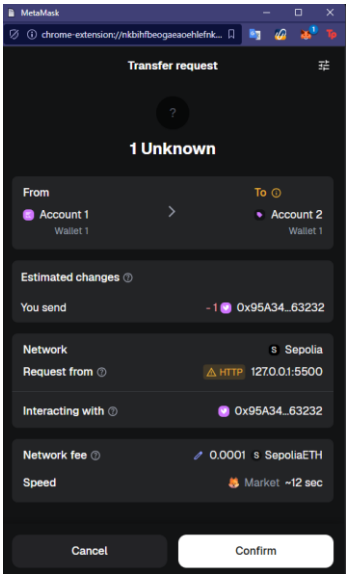


4.3. ERC-20 Feature: Token Transfer

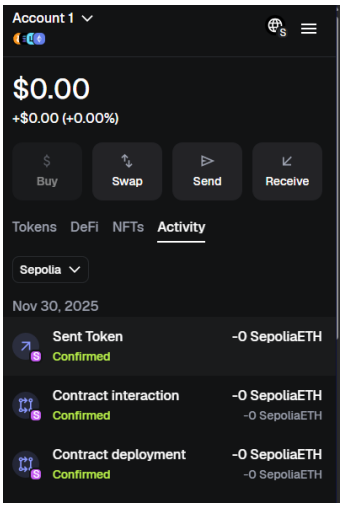
This validates the standard ERC-20 transfer function, allowing users to move their earned tokens.

- **Input:** Recipient address and amount are entered.



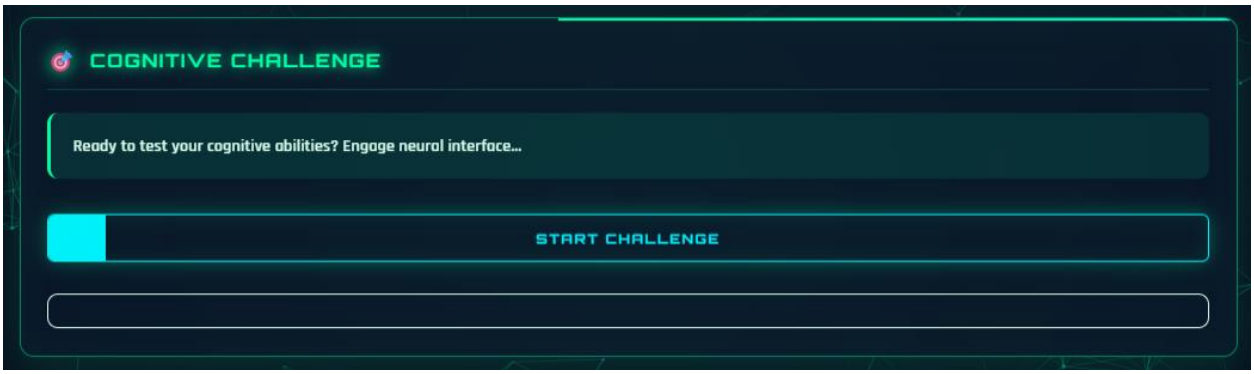


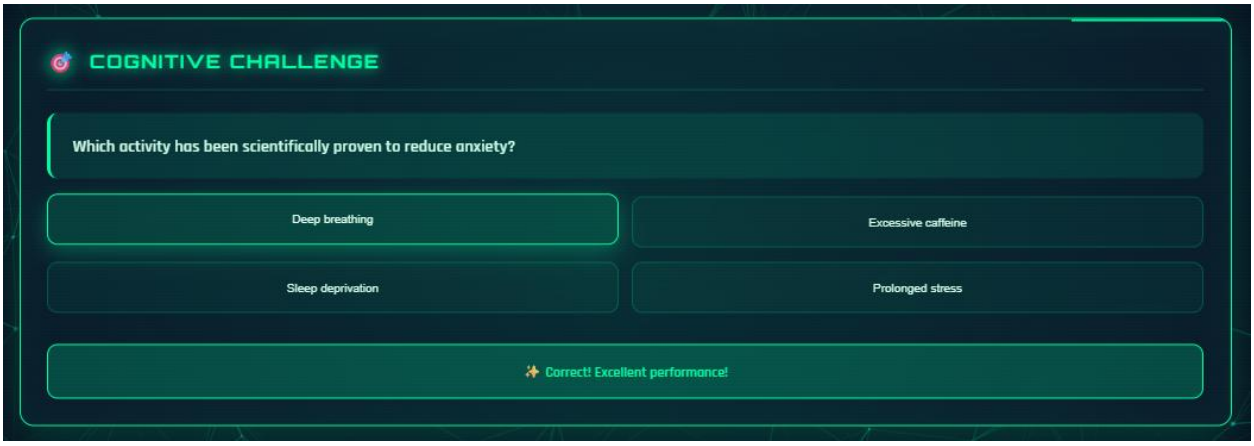
- **Execution:** The transaction is broadcast, and the main dashboard reflects the decreased balance immediately upon confirmation.



4.4. Additional Feature: Cognitive Challenge (Quiz)

The "Cognitive Challenge" provides a simple, interactive way to further engage the user with the Cyberpunk theme.





(Note: Although this is a transaction screenshot, placing it here demonstrates the contract interaction for the custom core logic.)

Thank you :)