Fusion Finance

Project: Fusion Finance
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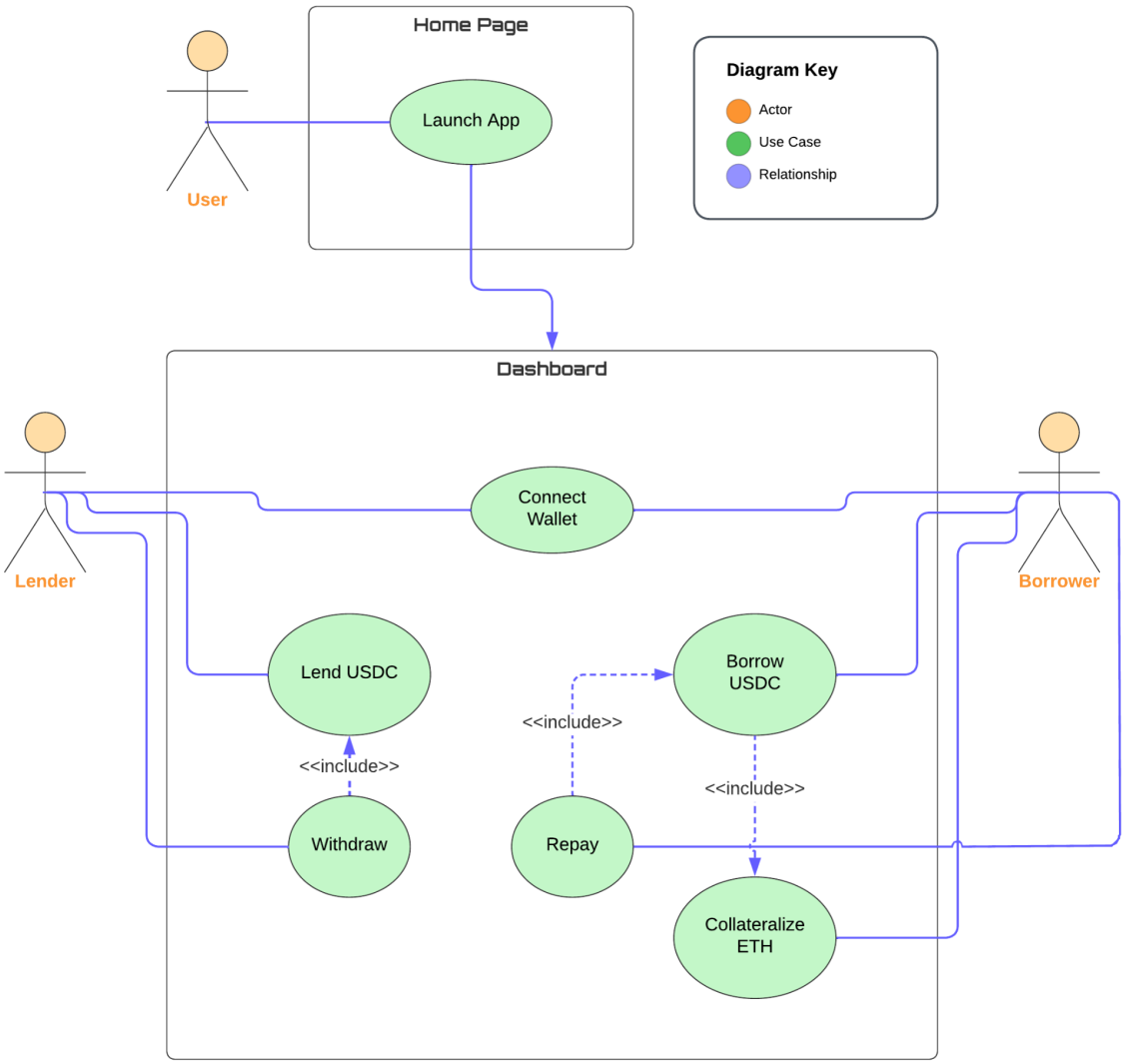
Overview:

A decentralized lending and borrowing protocol for users to lend and borrow USDC. A completely trustless environment for both lenders and borrowers, built on top of Ethereum and Ethereum L2 solutions. Lenders supply the protocol with USDC and in return earn interest. A portion of lender's USDC gets sent to AAVE USDC pool where it collects interest before the user decides to withdraw and the other portion gets sent to the Liquidity Pool, in addition to that Lenders are going to earn yield in a form of $FUSN tokens, protocol's native governance token. Thanks to lenders, our protocol will have liquidity to supply the borrowers with USDC. In order for borrowers to borrow they will have to collateralize ETH, our protocol works in an over-collateralized model, meaning borrower's ETH collateral amount > USDC amount they can borrow. The borrowers pay interest to the protocol in order to maintain it, the interest will be deducted from ETH collateral when the borrower repays the full debt. In case of liquidation, meaning when the borrower's ETH collateral amount < USDC borrowed + liquidation rate, our protocol keeps the borrower's ETH collateral and rewards the liquidator.

Deliverables:

1. Web App: A user-friendly web application that allows users to:
    a. Connect their wallets.
    b. Supply USDC
    c. Borrow USDC

d. Collateralize ETH
e. Withdraw USDC
f. Repay USDC
g. Explore the following information:
    i. Protocol's name
    ii. User's wallet address.
    iii. User's ETH and $FUSN balance.
    iv. USDC % APY
    v. Current supplied or borrowed amounts, if any.
h. UML Use Case Diagram:



2. Smart Contract(s): A set of smart-contracts to perform everything on-chain to maintain transparency.
    a. FusionCore contract:
        i. Mapping of lender to amount of USDC provided.
        ii. Mapping of borrower to amount of USDC borrowed.
        iii. Mapping of borrower to amount of ETH collateralized.
        iv. Lend function - sends user's provided amount of USDC to the protocol => sends a portion of USDC to AAVE Pool to earn interest
        v. Lender's withdraw function - withdraws user's USDC from AAVE Pool and sends USDC + interest earned to lender (2.5% APY) => calculates amount of $FUSN tokens earned and sends it to lender.
        vi. Collateralize ETH function - sends ETH to protocol => calculates borrow limit.
        vii. Borrow function - check if the user has collateralized ETH => calculate liquidation point => send the user amount of USDC provided inside the borrow limit.
        viii. Borrowers repay function - check if amount to repay equals full debt? Yes => Transfers the protocol USDC amount => calculate interest (3% APR) => deduct interest from ETH collateral => send ETH collateral to the user. No => Deduct debt amount => recalculate liquidation point.
        ix. Liquidate function(any user including the deployer can execute a liquidation function) - check if the liquidation point has been passed => liquidate position => send the liquidator 1.25% of borrower's ETH collateral as reward.
        x. Calculate Price of ETH function - Using Chainlink's price oracle calculates and returns the price of ETH in USDC.
        xi. Calculate Borrow limit function - get the price of ETH in USDC => (ETH price * ETH collateral) * borrow rate (70%) .
        xii. Calculate Liquidation point - get the price of ETH in USDC => (ETH price * ETH collateral) + liquidation rate (10%).

b. Fusion $FUSN token:
    i. ERC20 token
    ii. Rewarded to lenders for providing liquidity(USDC)