Coding Assignment:

Concept:

Create a smart contract called 'Mock Fund' that allows users to:

1. Deposit a stablecoin (e.g., a custom token like USDC) into the fund
2. The fund swaps a portion of the deposits (50%) into another tokens via Uniswap (e.g., DAI, WETH, LINK)
3. Retains the rest as base liquidity in the fund
4. Mints the user a "fund share token" which represents user's proportional share of the fund
5. Allow users to withdraw their share in part or in full, redeeming in stablecoin in exchange for fund share token
6. Optionally implement management fees and basic NAV logic

Tech stack:

1. Use Basic React for front end or any technology you are comfortable with. This is not a front-end test but you must allow user to perform following actions via front end:
   a. Connect wallet
   b. View fund composition
   c. Deposit and withdraw funds
   d. See value of their shares

2. Use Solidity for smart contracts and where necessary stick to established ERC standards – eg: ERC 20 for stablecoin
3. Use GitHub for your repo and share it once completed
4. Use Hardhat for development environment

Please create a readme file with proper documentation. Any material you are submitting should be part of the repo.