Solidity with React Best Practices

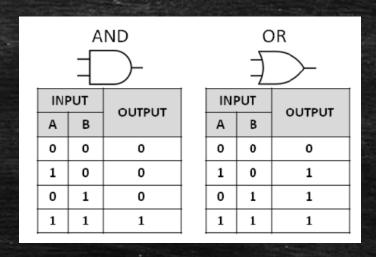
By: Timothy Mendez Feliciano

Simple Code changes that help improve code and interaction.

- Small Gas Optimization Techniques.
- Proper Event Management and Declaration
- Using Hooks correctly for Smart Contracts.
- Benefits of SPA Structure to avoid constant MetaMask Sign In.

Solidity Best Practices

- Place most likely Output result first inside an If Statement.
- Using Require(), Assert() to catch events on UI.
- Use Proper Function Declarations.
 - Pure, View, Fallback.
- Public vs External
- Only import used functions of Interface.



Pure: Do not read nor

modifies State.

View: Will not modify

state. Can Read.

React Best Practices

- useContract vs useEffect Hook.
 - UseContract makes code reusability easier.
- Watching Events.
 - Inside UseEffect
- Placing useEagerConnect at the Highest Level
 - Prevents having to SignIn on every page. Consumes less resources.
- Benefits of SPA Structure.
 - Less Loading and having to sign in.

```
// 6000

const bestPracticeAccessContract = useContract(process.env.NEXT_PUBLIC_BEST_PRACTICE_ACCESS_ADDRESS as string, BestPracticeAccessABI)

const bestPracticeContract = useContract(process.env.NEXT_PUBLIC_BEST_PRACTICE_ADDRESS as string, BestPracticeAccessABI)

// BAD

const [badContract, setBadContract] = useState()

useEffect( effect () => {
    // Requires MetaMask installed
    if (typeof window !== "undefined") {
        // Figure out the signer or provider.
        const result = new ethers.Contract(process.env.NEXT_PUBLIC_BEST_PRACTICE_ACCESS_ADDRESS as string, BestPracticeAccessABI, signerOrProvides {}})

setBadContract(result)

}, deps [])
```

Typechain and ABI

- Create a contracts folder in UI.
- Import ABI's.
- Install TypeChain.
- Create command:
 "compile-contract types": "typechain target ethers-v5 --out dir './contracts/types'
 './contracts/*.json'"
- Yarn compile-contracttypes

Reference Links

- https://dev.to/tawseef/require-vs-assert-in-solidity-5e9d
- https://www.tutorialspoint.com/solidity/solidity_function_modifiers.htm
- https://ethereum.stackexchange.com/questions/1938o/external-vs-public-best-practices
- https://docs.ethers.org/v5/api/contract/contract/#Contract--creating
- ProjectRepo: https://github.com/TimothyMendezFeliciano/HolbertonPresentation

Thanks for Watching