Count on NEAR

Our counter example is a friendly decentralized app that stores a number and exposes methods toincrement ,decrement , andreset it.

Obtaining the Counter Example

You have two options to start the Counter Example.

1. You can use the app throughGitHub Codespaces
2. , which will open a web-based interactive environment.
3. Clone the repository locally and use it from your computer.

Codespaces Clone locally https://github.com/near-examples/counters

Structure of the Example

The example is divided in two main components:

1. The smart contract, available in two flavors: Rust and JavaScript
2. The frontend, that interacts with an already deployed contract.
3. JavaScript
4. Rust

┌── sandbox-ts # sandbox testing | ├── src | | └── main.ava.ts | ├── ava.config.cjs | └── package.json ├── src # contract's code | └── contract.ts ├── package.json # package manager ├── README.md └── tsconfig.json # test script ┌── sandbox-ts # sandbox testing | ├── src | | └── main.ava.ts | ├── ava.config.cjs | └── package.json ├── src # contract's code | └── lib.rs ├── build.sh # build script ├── Cargo.toml # package manager ├── README.md └── rust-toolchain.toml

Frontend

The counter example includes a frontend interface designed to interact seamlessly with an existing smart contract that has been deployed. This interface allows users to increase or decrease the counter as needed.

Running the Frontend

To start the frontend you will need to install the dependencies and start the server.

cd frontend yarn yarn start Go ahead and login with your NEAR account. If you don't have one, you will be able to create one in the moment. Once logged in, use the+ and- buttons to increase and decrease the counter. Then, use the Gameboy buttons to reset it and make the counter blink an eye!

Frontend of the Counter

Understanding the Frontend

The frontend is composed by a single HTML file (/index.html). This file defines the components displayed in the screen.

The website's logic lives in/index.js , which communicates with the contract through/near-wallet.js . You will notice in/index.js the following code:

- JavaScript

frontend/index.js loading ... See full example on GitHub It indicates our app, when it starts, to check if the user is already logged in and execute eithersignedInFlow() orsignedOutFlow() .

Smart Contract

The contract presents 4 methods:get_num ,increment ,decrement , andreset . The methodget_num retrieves the current value, and the rest modify it.

- JavaScript
- Rust

contract-ts/src/contract.ts loading ... See full example on GitHub contract-rs/src/lib.rs loading ... See full example on GitHub

Testing the Contract

The contract readily includes a set of unit and sandbox testing to validate its functionality. To execute the tests, run the following commands:

- JavaScript
- Rust

cd contract-ts yarn yarn test cd contract-rs ./test.sh tip Theintegration tests use a sandbox to create NEAR users and simulate interactions with the contract.

Deploying the Contract to the NEAR network

In order to deploy the contract you will need to create a NEAR account .

- JavaScript
- Rust

Optional - create an account

near create-account --useFaucet

Deploy the contract

cd contract-ts yarn build near deploy ./build/counter.wasm

Optional - create an account

near create-account --useFaucet

Deploy the contract

cd contract-rs ./build.sh near deploy ./target/wasm32-unknown-unknown/release/counter.wasm tip To interact with your contract from thefrontend , simply replace the variableCONTRACT_NAME in theindex.js file.

CLI: Interacting with the Contract

To interact with the contract through the console, you can use the following commands

Get the current number of the counter

near view counter.near-examples.testnet get_num

Increment the counter

Replace with your account ID

near call counter.near-examples.testnet increment --accountId

Decrement the counter

Replace with your account ID

near call counter.near-examples.testnet decrement --accountId

Reset the counter to zero

Replace with your account ID

near call counter.near-examples.testnet reset --accountIdtip If you're using your own account, replacecounter.near-examples.testnet with youraccountId .

Moving Forward

A nice way to learn is by trying to expand the contract. Modify it by adding a parameter toincrement anddecrement , so the user can choose by how much to change the value. For this, you will need to use knowledge from theanatomy andstorage sections. Edit this page Last updatedonFeb 21, 2024 bySam Snowman(赵正中) Was this page helpful? Yes No

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