

Remix IDE: Loading, Compiling, and Interacting with Smart Contracts With Simple Counter Example

This document explains how to use the Remix IDE to work with smart contracts. It shows how to:

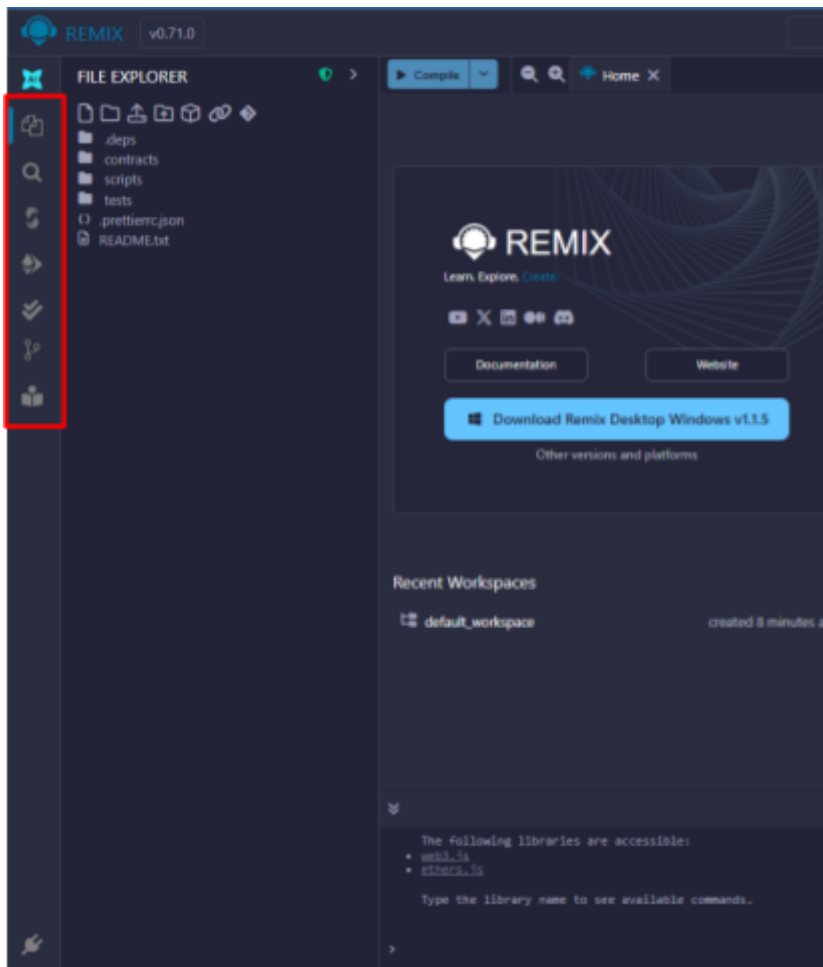
- Load a contract into Remix and compile it,
- Select MetaMask as the environment
- Load a contract using its address so you can interact with it.

Prerequisites

- The smart contract code and address of the deployed smart contract
- A MetaMask account with the Sepolia Testnet added.
- Some Sepolia test tokens in your MetaMask wallet to interact with the contract.

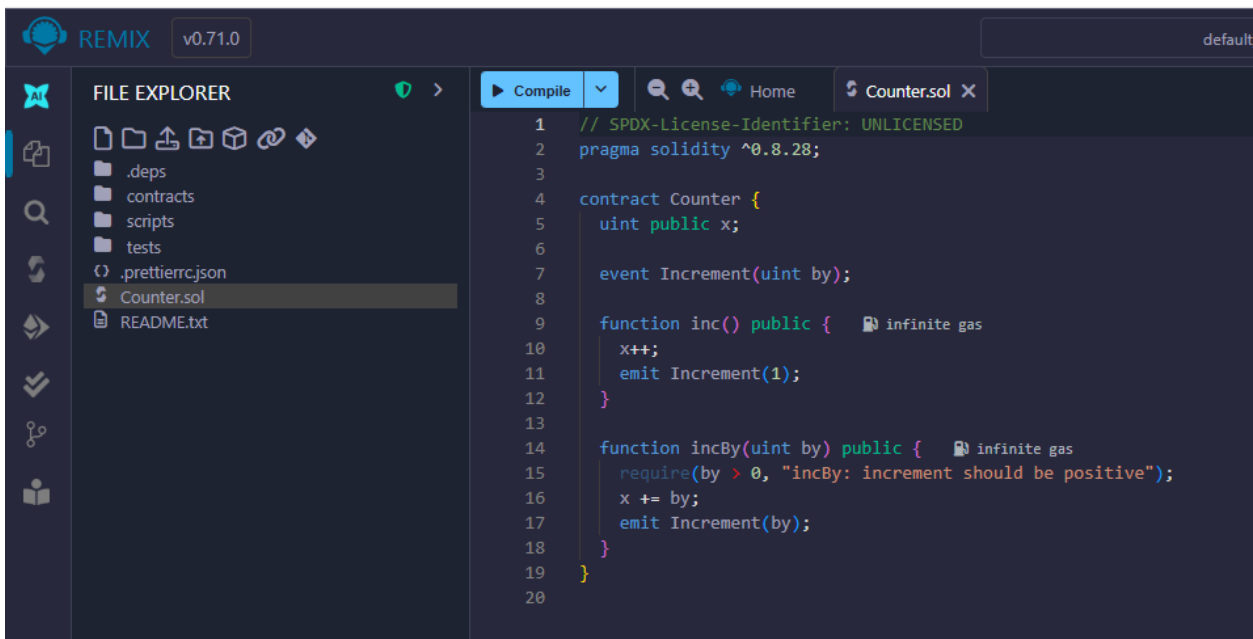
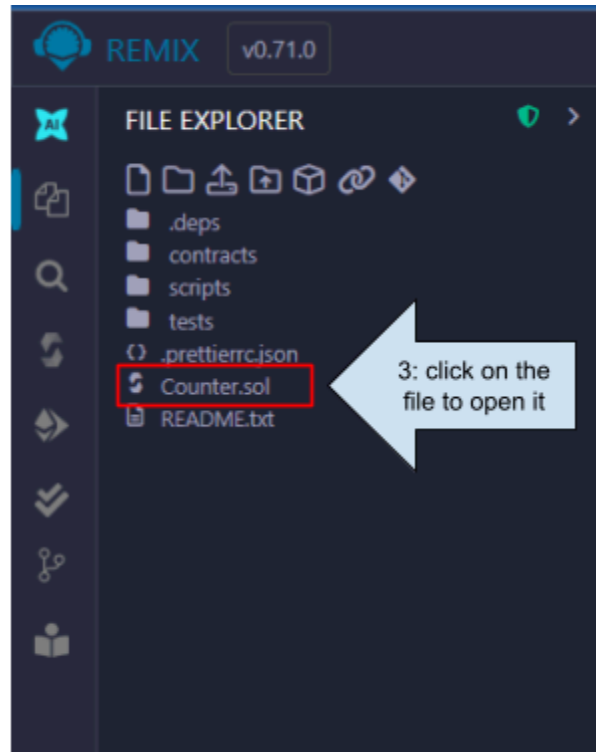
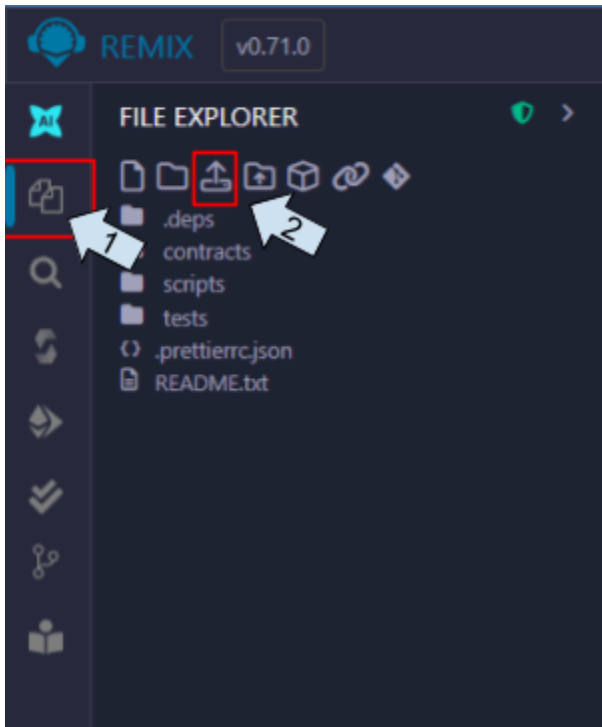
Step1 : Open Remix IDE

- Open a web browser and go to <https://remix.ethereum.org/>.
- The Remix IDE will load. Most of the tools you'll use are in the **left-hand panel**. (highlighted in red)



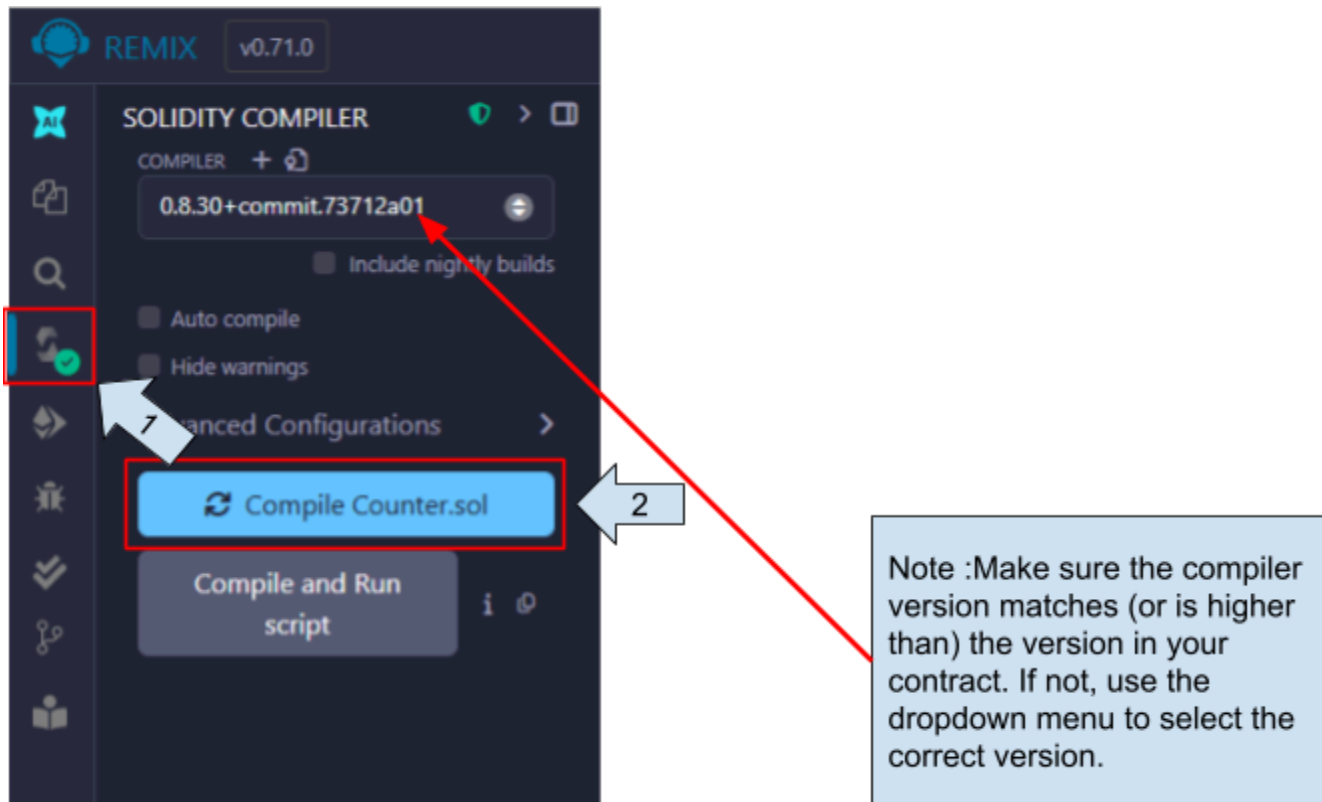
Step2 : Load the Solidity Contract

1. Click the **File Explorer** icon on the left sidebar.
2. Use the **upload button** to select a file from your computer.
3. Once the file appears in Remix, click on it to open and view it.



Step3: Compile the Contract

1. Compile the smart contract by clicking on the **Solidity Compiler** icon on the left sidebar of Remix IDE.
2. Then click the **Compile ERC20.sol** button. You should see a green checkmark once the file is successfully compiled.



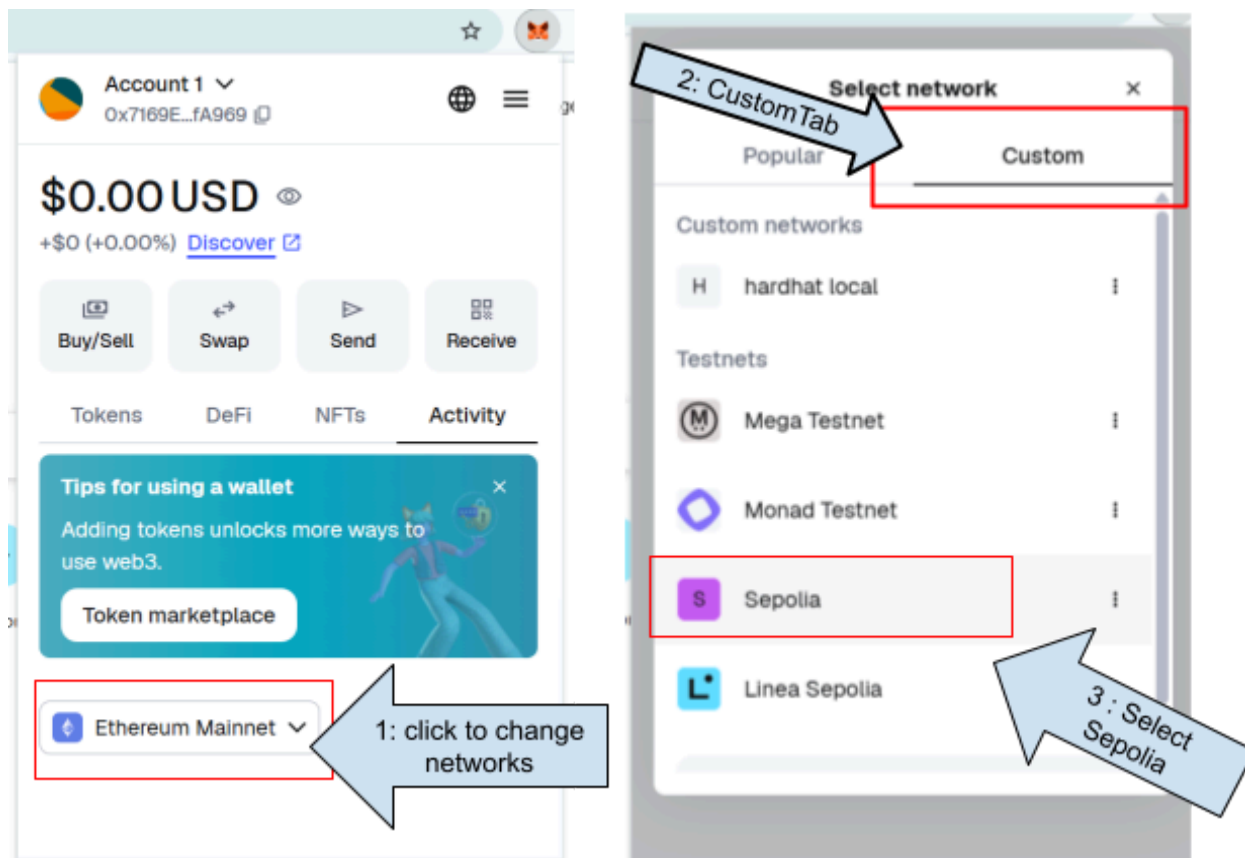
For this contract, the compiler version is **0.8.30**, which is higher than the contract's version **0.2.28**, so it's okay to use.

```
1 // SPDX-License-Identifier: UNLICENSED
2 pragma solidity ^0.8.28;
```

Step4 : Load a Contract from Its Address

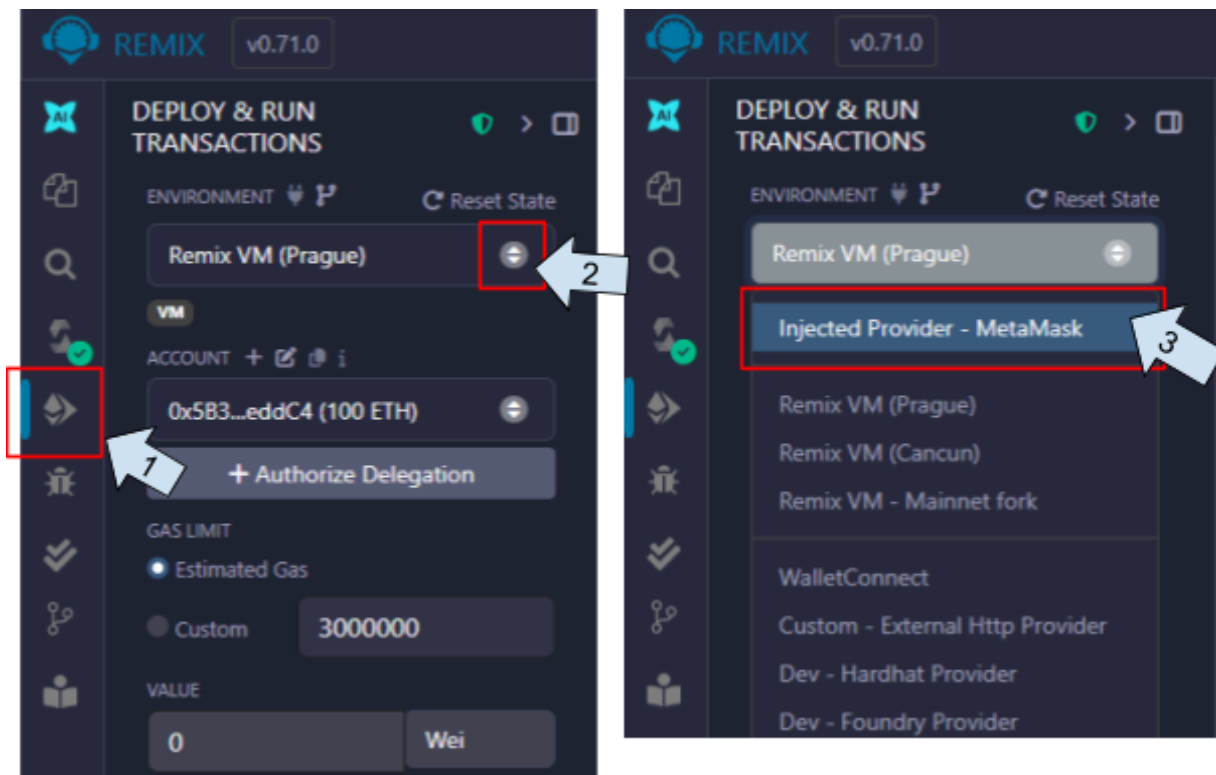
Step 4.1 Ensure MetaMask is on Sepolia Testnet

- We first need to switch the network to **Sepolia** in the MetaMask extension.
- On the MetaMask home screen, click on the current network name at the bottom-left corner (e.g., "Ethereum Mainnet").
- This will open the **Select Network menu**. In the menu, click on the **Custom** tab.
- From the list, select **Sepolia Testnet** and exit back to the homepage.

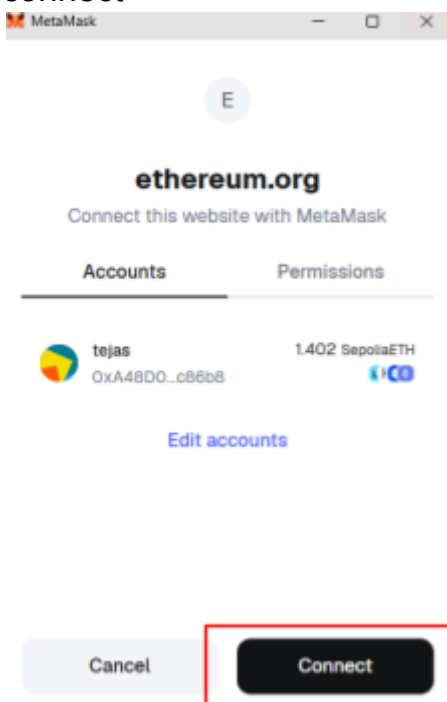


Step 4.2 Connect Remix to MetaMask and Load the Contract

1. Once the smart contract has been compiled without any errors (step 3) , select the **Deploy & Run Transactions** tab located on the left-hand sidebar.
2. Click the **Environment** dropdown menu.
3. Choose **Injected Provider - MetaMask** to connect Remix to your MetaMask wallet.



4. Metamask might ask you to connect the website with metamask , if prompted click on connect



5. To load an already deployed contract, enter the contract's **address** in the **At Address** field and click the **Load** button.

DEPLOY & RUN TRANSACTIONS

ENVIRONMENT ▾

Injected Provider - MetaMask

Sepolia (11155111) network

ACCOUNT + ▹ ▹

0xA48...c86b8 (1.402462690...)

+ Create Smart Account

GAS LIMIT

Estimated Gas

Custom 3000000

VALUE

0 Wei

CONTRACT

Counter - Counter.sol

evm version: prague

Deploy

☐ Publish to IPFS

At Address Load contract from Address

Transactions recorded 0 i >

Your **Deploy & Run Transactions** tab should now show **Injected Provider - MetaMask** as the selected environment.

If connected successfully, your MetaMask account should also appear under **Account**.

Enter the contract's address in the field and click **on the button** to access it's function on Remix.

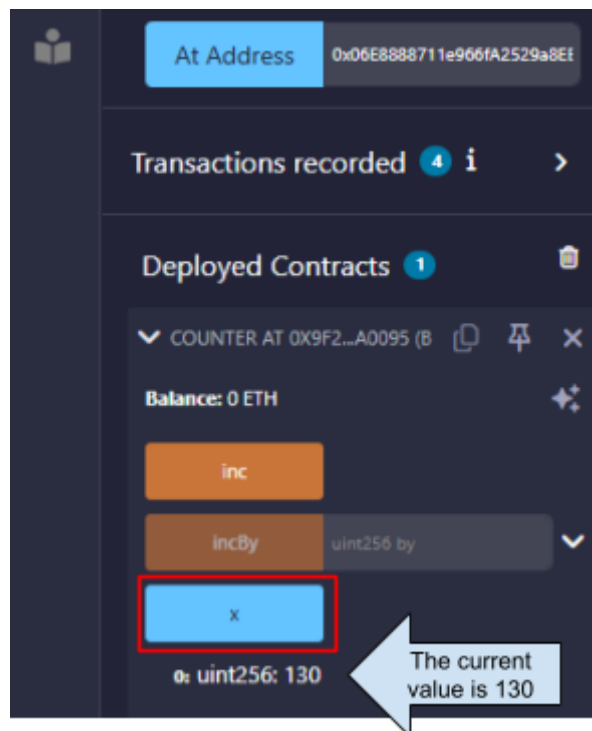
Step 4.3: Interact with the Contract

1. You can now see your contract listed under the **Deployed Contracts** section.
2. To explore all the functions available in the contract, click the **arrow** next to the contract's name to expand it and view the full list of functions you can interact with.

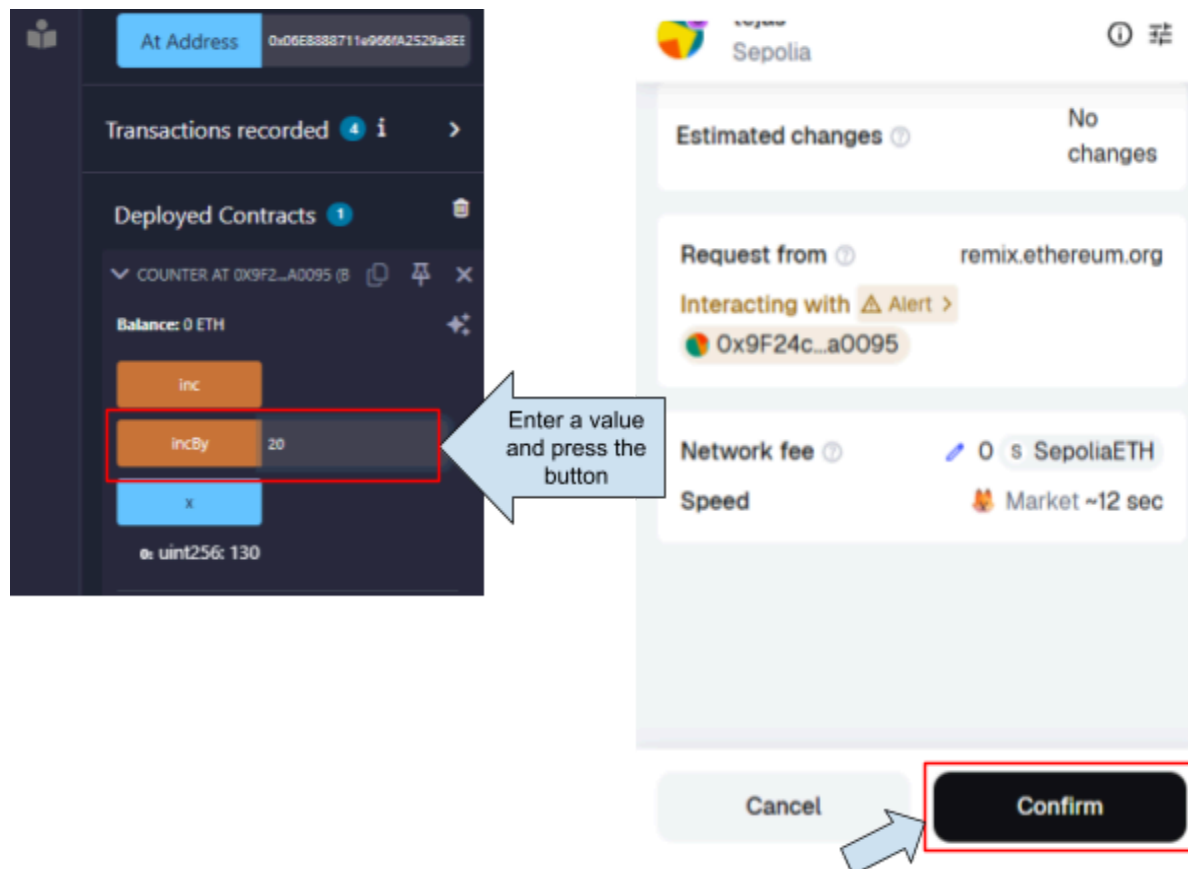
The image shows the Remix IDE interface. On the left, the 'Deployed Contracts' section is visible, listing a contract named 'COUNTER AT 0XBBC...257FF (B1)'. A red box highlights the expand arrow next to the contract name, with a blue arrow pointing to it and the text 'Click To expand it'. On the right, the 'DEPLOY & RUN TRANSACTIONS' panel is shown, displaying the expanded contract details. The panel includes a 'Balance: 0 ETH' section and a list of functions: 'inc', 'incBy', and 'x'. A blue arrow points to this panel with the text 'You can now interact with the contracts functions'.

Step: 5 Interacting with the counter contract

1. Under the **Deployed Contracts** section, you will see the contract's functions and parameters.
2. To view the current value of **x**, click the button next to it — the value will be displayed.



1. To increase **x**, type the number you want to add in the input field, then click the **incBy** button. This will call the smart contract function.
2. A **MetaMask popup** should appear — click **Confirm** to approve the transaction.



- After the transaction is complete, the value of **x** will update (for example, from 130 to 150), showing that the change was successful.

