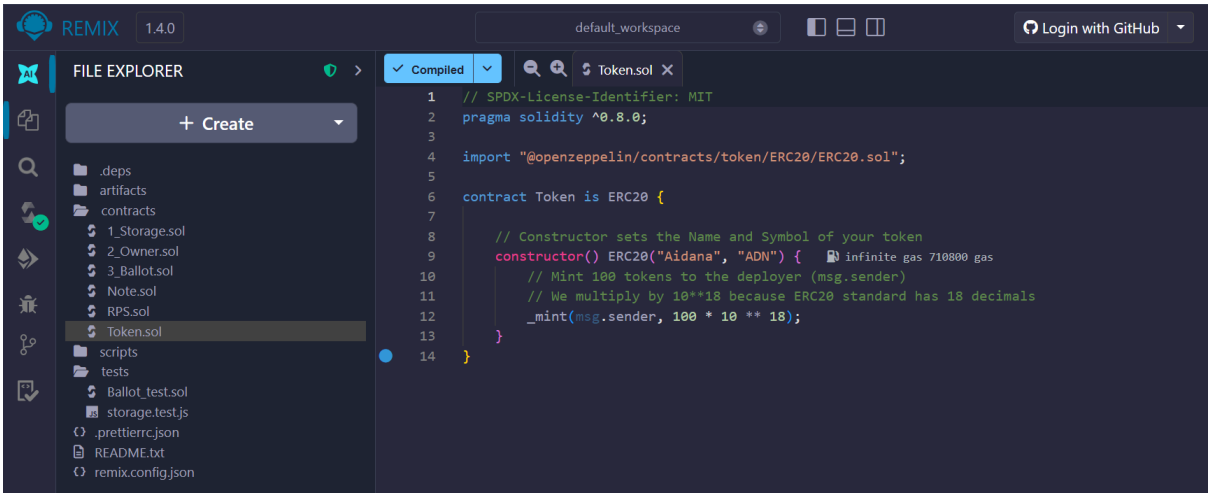
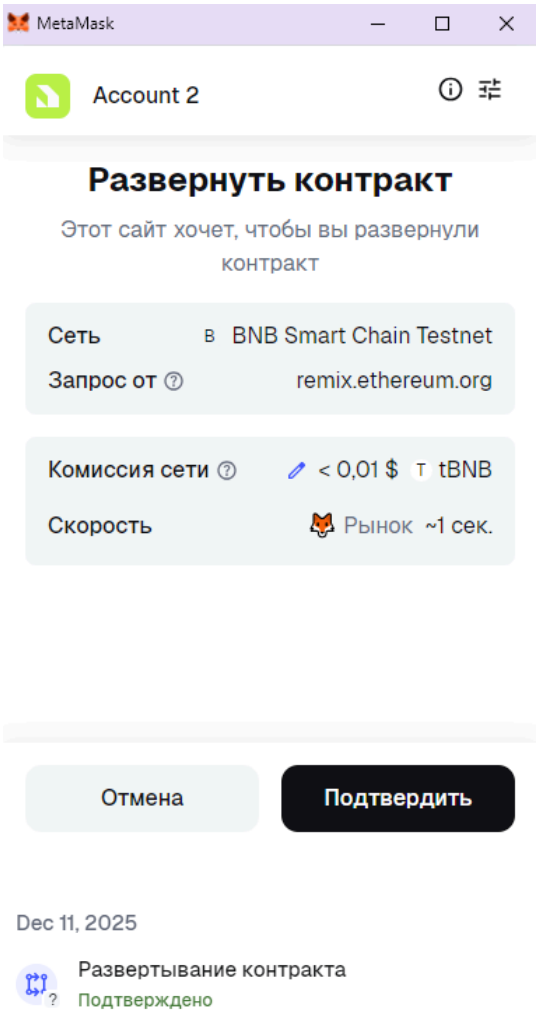
Assignment 11

Part 1: Create Your Own Cryptocurrency (ERC20)

1. I created a "Token.sol" file in Remix IDE, pasted the provided code, compiled it, then deployed it and confirmed the transaction in MetaMask.
   The contract was deployed successfully.



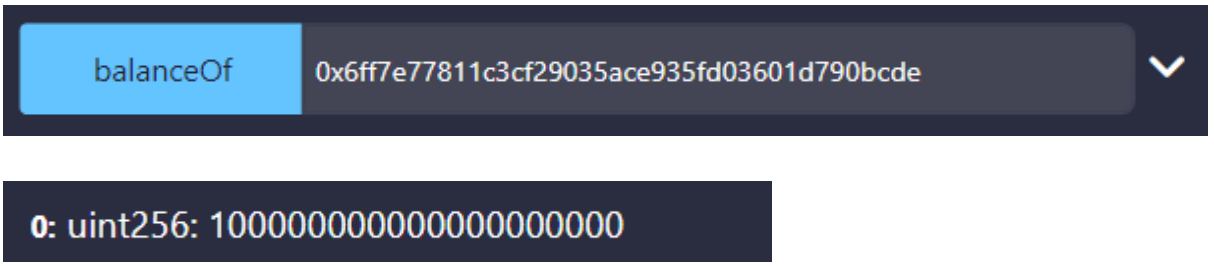


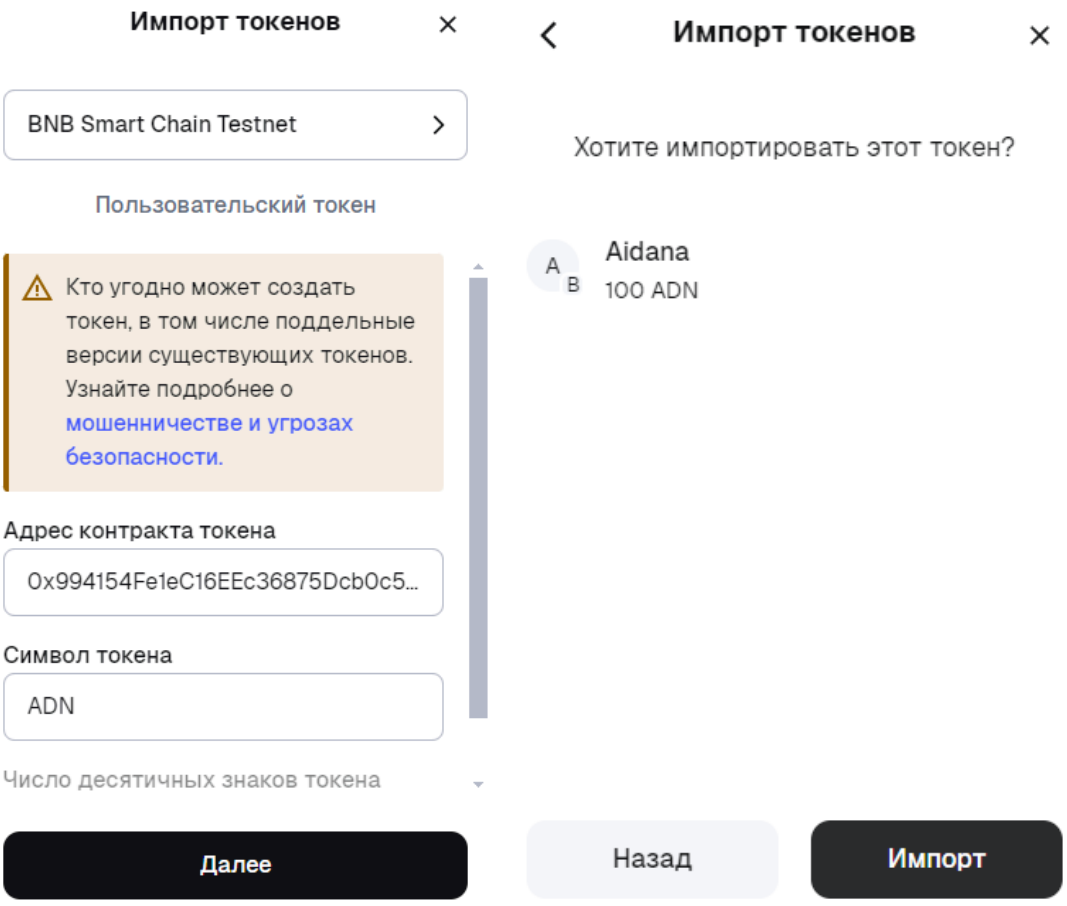
https://testnet.bscscan.com/tx/0x3cb912d9ce217cde2131f295c95ec8b31823e3065514334fe7b33e4ff39500ab

Contract Address: 0x994154Fe1eC16EEc36875Dcb0c5AF06b8BCCa031

2. To check that my wallet received 100 tokens, I used the **balanceOf** function.

   MetaMask wallet address → 0x6ff7e77811c3cf29035ace935fd03601d790bcde

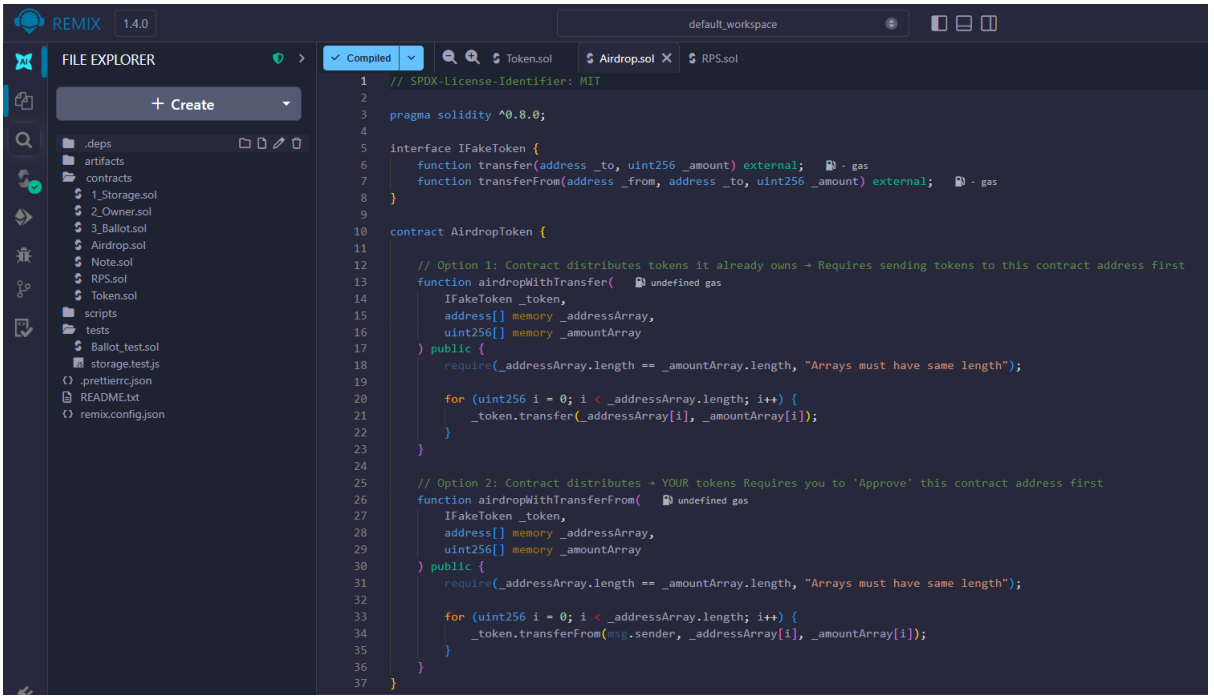


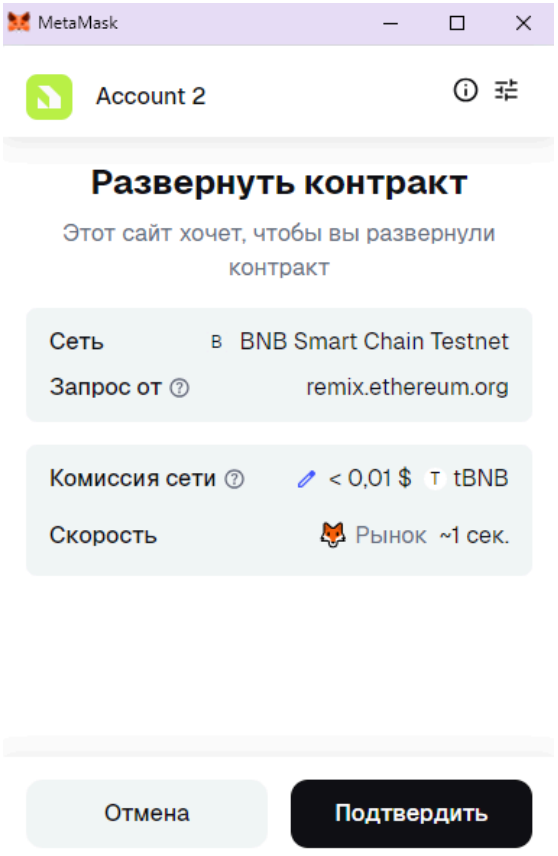


I also imported my token (ADN) into MetaMask to verify that my wallet had received 100 tokens.

Part 2: Token Distribution (Airdrop System)

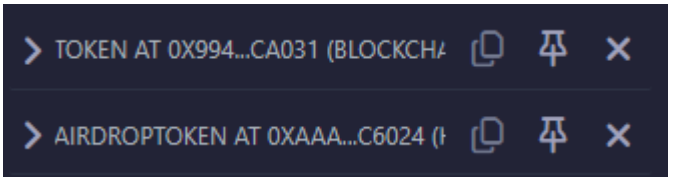
1. I created a "Airdrop.sol" file, pasted the provided code into it, compiled it, then deployed it and confirmed it in MetaMask.





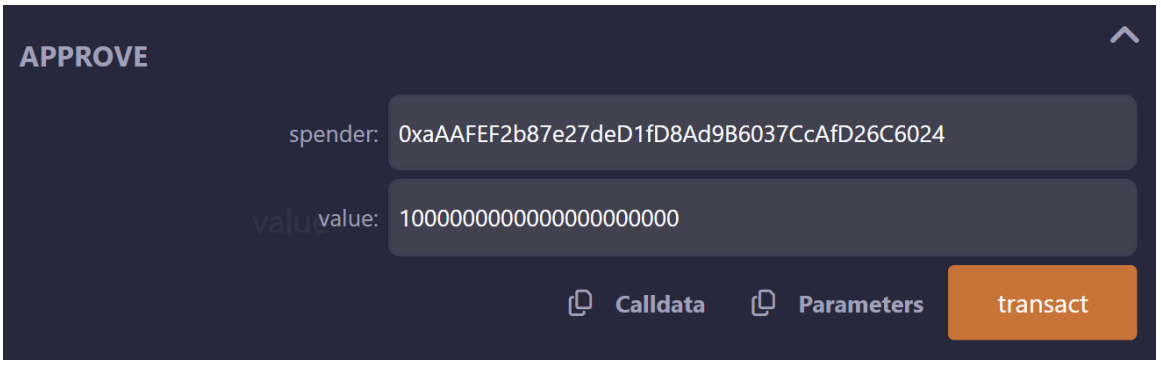
https://testnet.bscscan.com/tx/0xb4b13eb29d57b041c69481a2e93a177a83e61976bcfb5ede778326ed1c614764

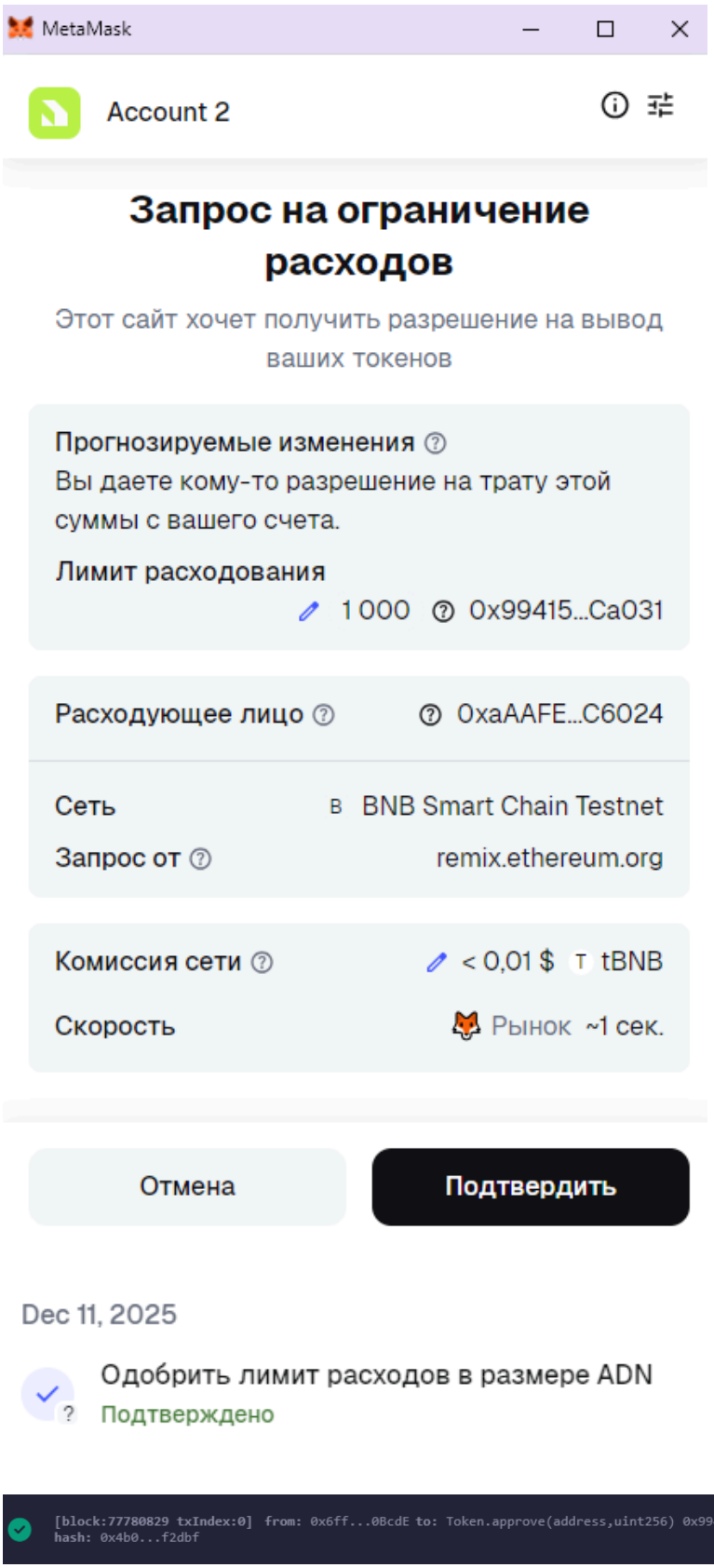
Contract Address: 0xaAAFEF2b87e27deD1fD8Ad9B6037CcAfD26C6024



2. To approve the contract, I go back to my deployed "Token" contract from Part 1 and find the **approve** function.
    - **spender**: 0xaAAFEF2b87e27deD1fD8Ad9B6037CcAfD26C6024 ("Airdrop" contract address)
    - **value:** 100000000000000000000 (maximum allowance to spend my tokens)

    Then I clicked "Transact" to submit the approval.

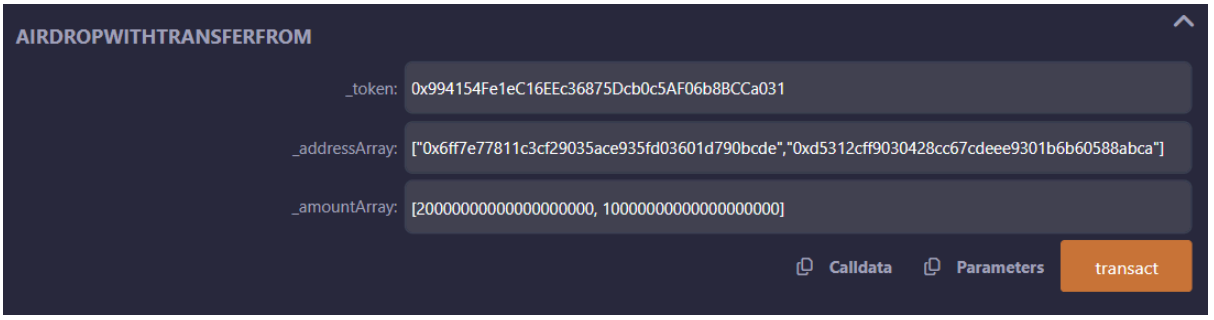


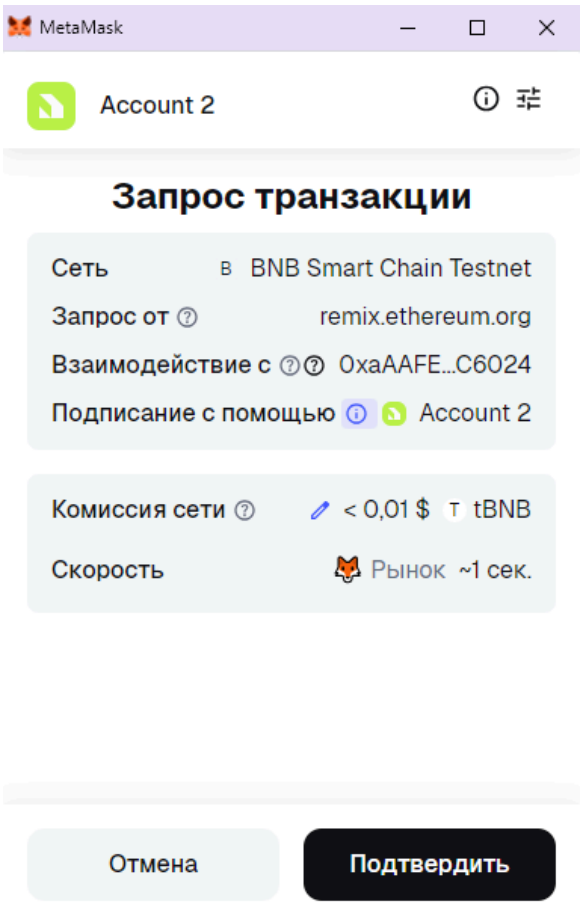


https://testnet.bscscan.com/tx/0xaa0e02f9bcb0858f9cba0a2c9687f505ccd595596389704ddf6f72236fe4f1f4

3. To execute the "Airdrop" contract , I go to the "Airdrop" contract and use the **airdropWithTransferFrom** function.
    - **_token:** 0x994154Fe1eC16EEc36875Dcb0c5AF06b8BCCa031 ("Token" Address)
    - **_addressArray:** ["0x6ff7e77811c3cf29035ace935fd03601d790bcde","0xd5312cff9030428cc67cdeee9301b6b60588abca"] → my MetaMask wallet addresses
    - **_amountArray:** [20000000000000000000, 10000000000000000000] → (20 and 10 tokens)

    Then I clicked "Transact".





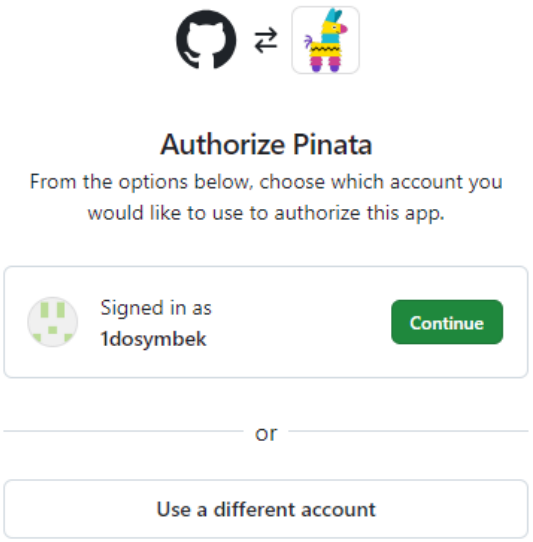
https://testnet.bscscan.com/tx/0x91dba155f2c3a104fea414369132c3c45a3b7ee88fe9b4a862d20899f93e1a0e

My token (ADN) balance went down from 100 ADN to 90 ADN (-10 token)

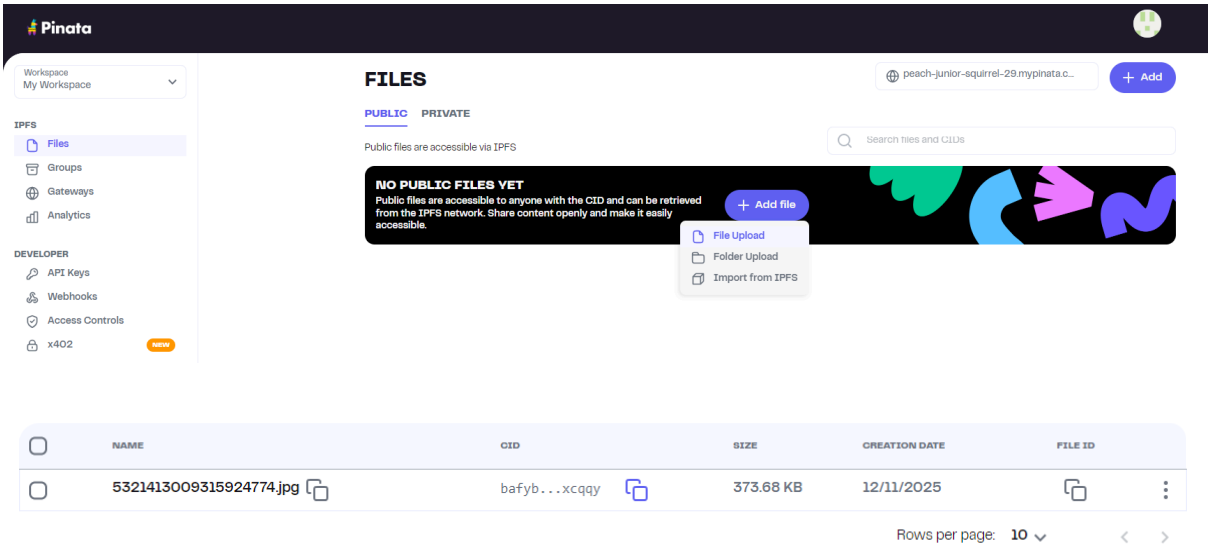
Part 3: NFT Collection with Metadata (ERC721 + IPFS)

Step A: Preparing IPFS Metadata (Crucial Step)

1. Pinata registration via GitHub.

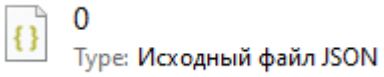


2. I clicked "Add file", picked a JPEG image, and uploaded it.



3. CID: **bafybeic3nscabf566bmhku7vllnnxrhxgdcs3pd6xfykvfddl2bc7xcqqy**

4. I created a file called "0.json" and pasted the code into it and added the image CID I copied from Pinata.

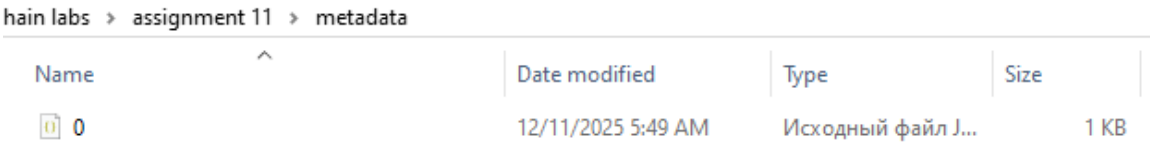


assignment 11 > metadata > 0.json > ...

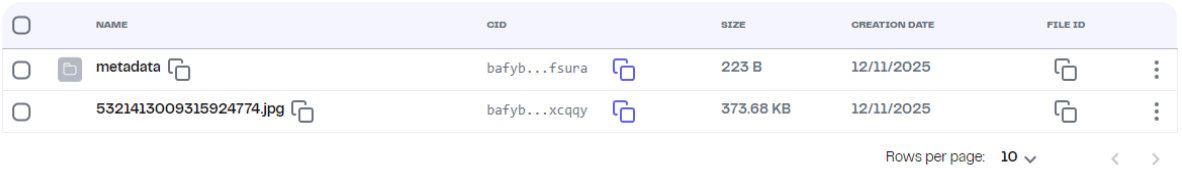
```
{
    "name": "Aidana NFT #0",
    "description": "My first practical NFT work",
    "image": "ipfs://bafybeic3nscabf566bmhku7vllnnxrhxgdcs3pd6xfykvfddl2bc7xcqqy"
}
```

5. I put "0.json" into a folder named "metadata".

metadata



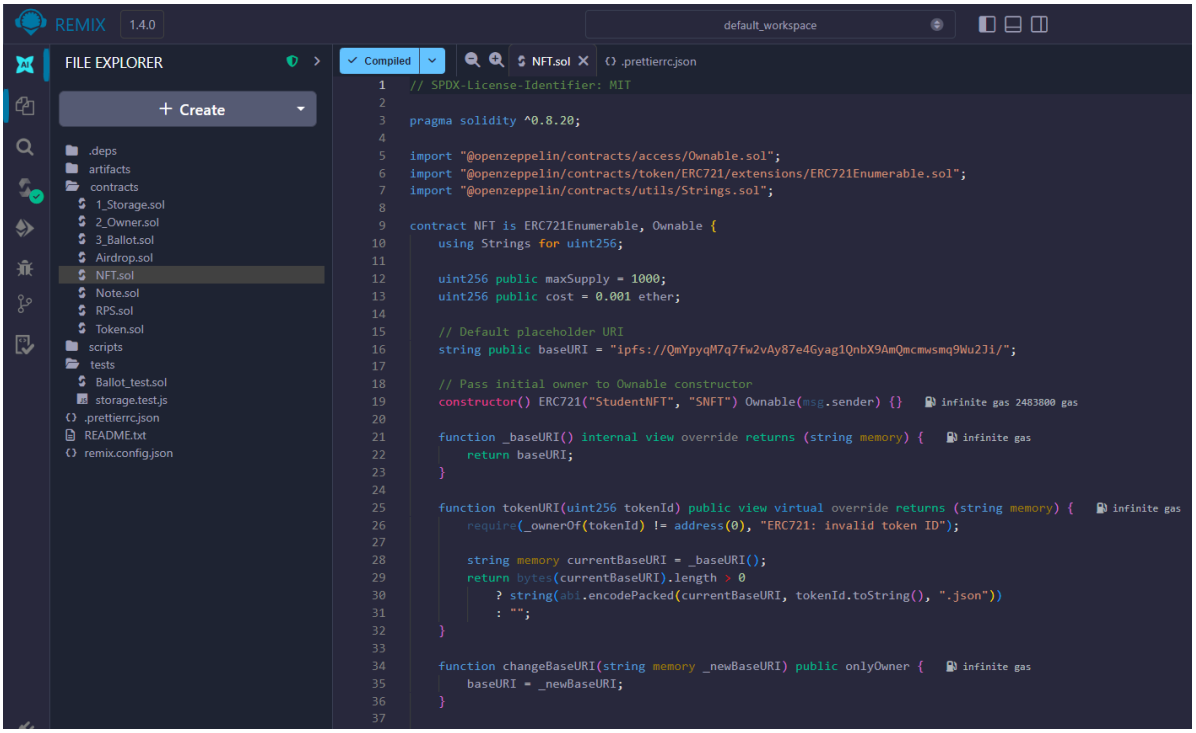
6. Next, I uploaded "metadata" to Pinata and copied its CID.

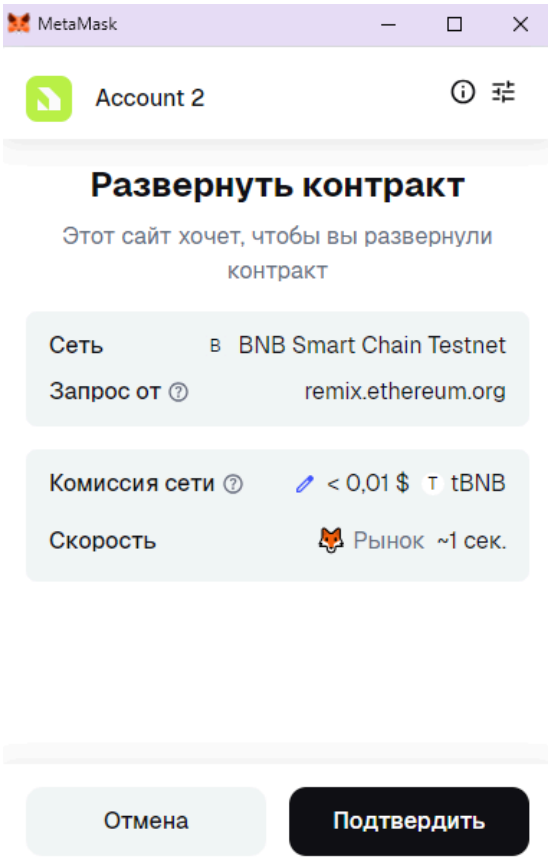


CID: **bafybeigffjj3t5fpq6unnb55f4f3n7zmslpfocmob3jeesebbqyanfsura**

Step B: Smart Contract Deployment

1. I created "NFT.sol", pasted the provided code into it, compiled and deployed it, and also confirmed it in MetaMask.



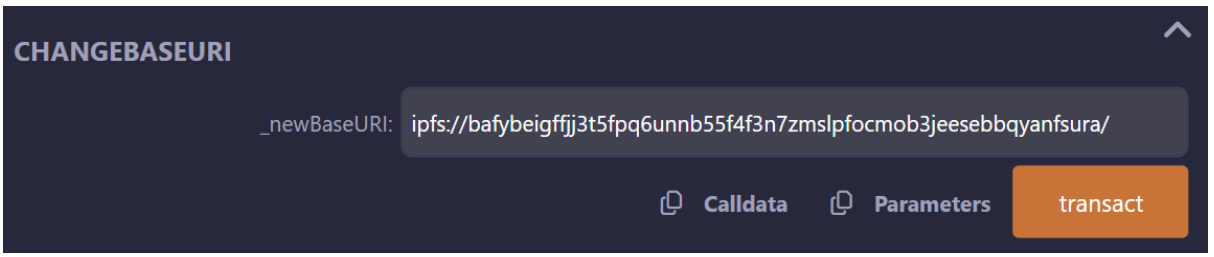


https://testnet.bscscan.com/tx/0x6e6569aa7bbe236f4ff135714e76d802cc03f9b466c6a8f87b025ca624669cd4

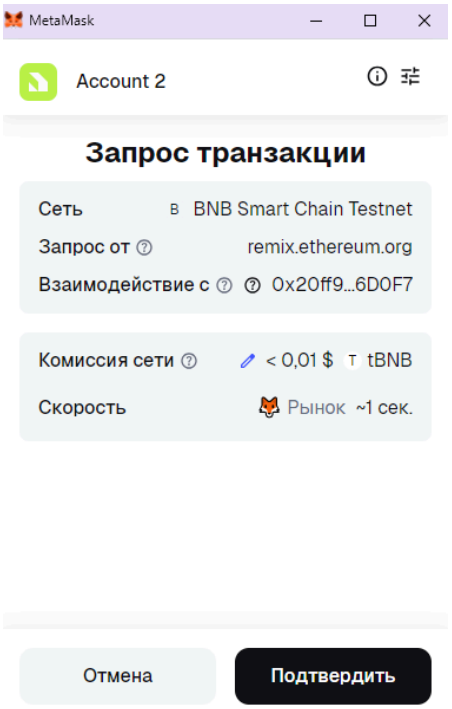
NFT Contact Address: 0x20ff997ce78ab748588EFbC51255C9525496D0F7

Step C: Linking and Minting

1. **changeBaseURI** function → **ipfs://bafybeigffjj3t5fpq6unnb55f4f3n7zmslpfocmob3jeesebbqyanfsura/**

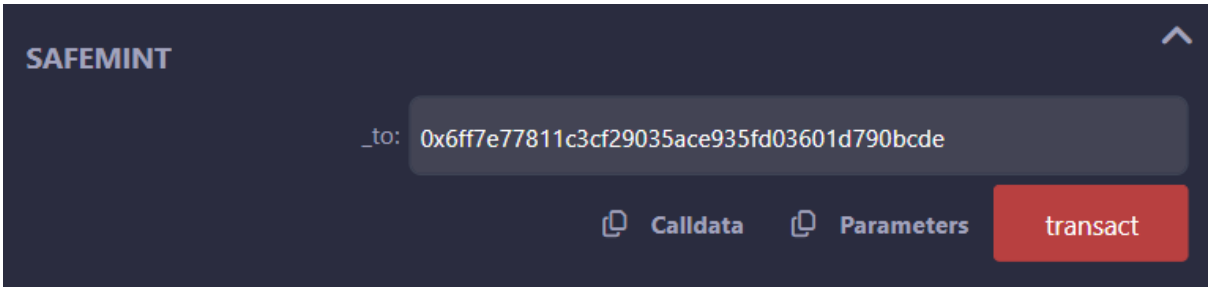


Then, I clicked "Transact" and confirmed it in MetaMask.



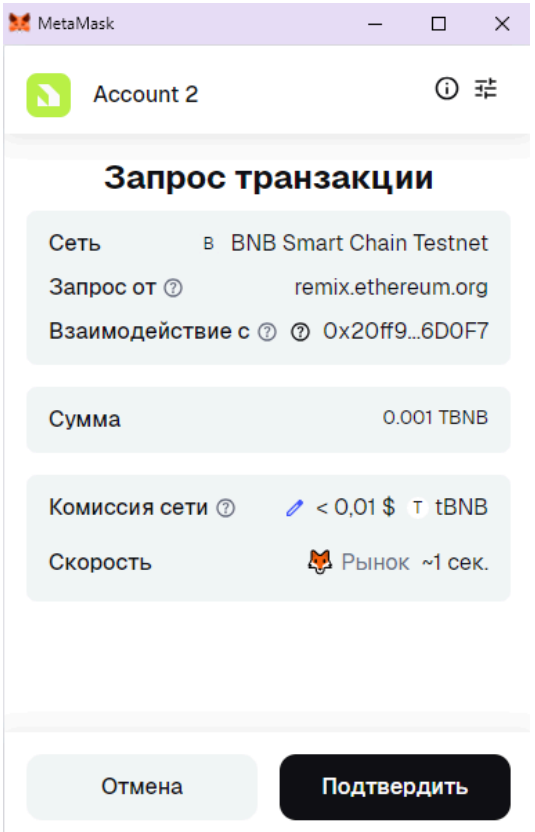
https://testnet.bscscan.com/tx/0xe688b79c859409517c5896aa5db7526d9af66fa0c7bdbefd831cd1f8ea946cc1

2. **safeMint** function → 0x6ff7e77811c3cf29035ace935fd03601d790bcde (MetaMask Account Address)



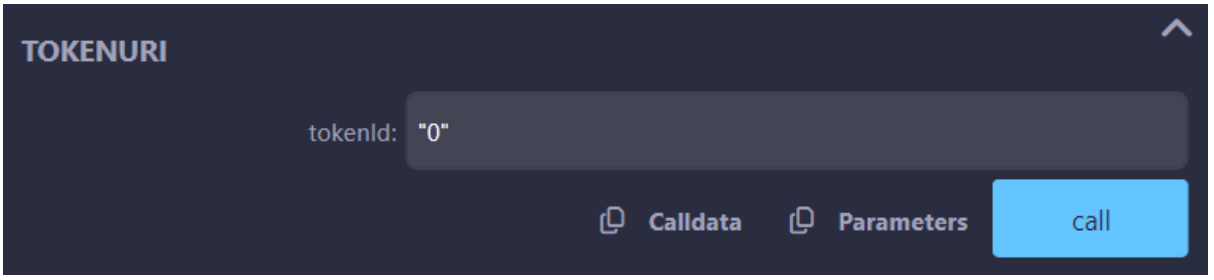
the "value" field → 1000000 Gwei = 0.001 Ether → "Transact".

I confirmed the transaction request in MetaMask.

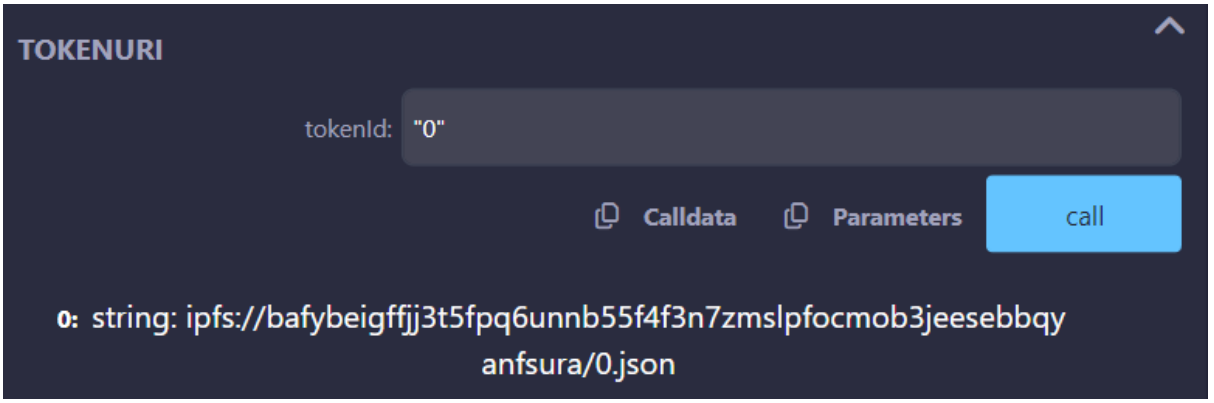


https://testnet.bscscan.com/tx/0x97b0991775502db8b2acf579f30be44024b169c5a46769c186fe863066a81342

3. **tokenURI** function with **"ID 0"** returned:

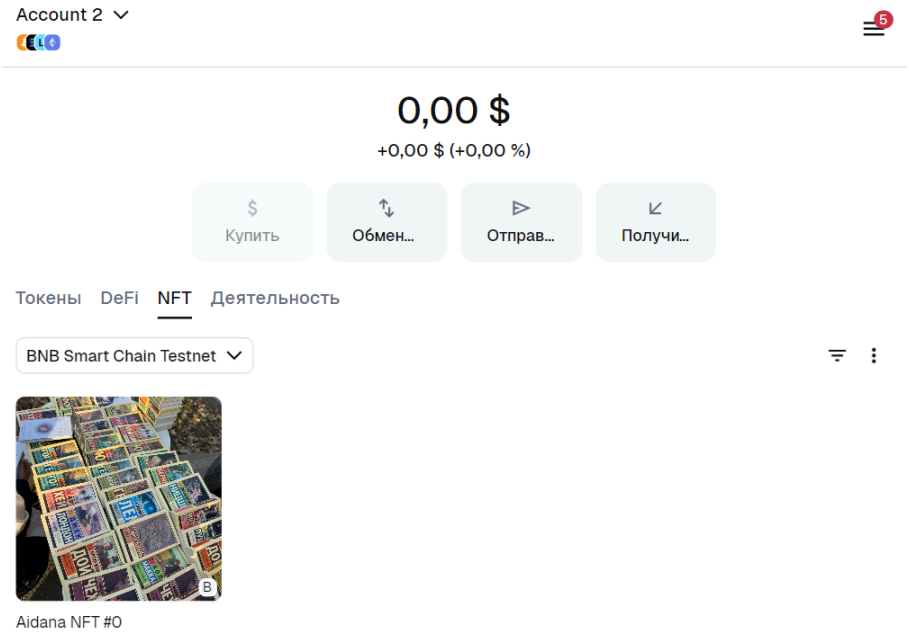


string: ipfs://bafybeigffjj3t5fpq6unnb55f4f3n7zmslpfocmob3jeesebbqyanfsura/0.json



https://gateway.pinata.cloud/ipfs/bafybeigffjj3t5fpq6unnb55f4f3n7zmslpfocmob3jeesebbqyanfsura/0.json

NFT displaying in MetaMask:



Aidana NFT #0

Aidana NFT #0

My first practical NFT work

Адрес контракта	0x20ff9...6D0F7
ID токена	0
Стандарт токена	ERC721

Отказ от ответственности: MetaMask извлекает медиафайл из исходного URL. Этот URL иногда изменяется торговой площадкой, на которой был выполнен минтинг NFT.