

03-第三节 ERC721 合约

实验目的

- 掌握 ERC721 的实现原理;
- 掌握图床的使用

实验环境

- Chrome/Microsoft Edge 等浏览器;
- MetaMask 插件钱包;
- Remix IDE: <https://remix.ethereum.org/> ;
- OKT Chain 测试网 (RPC: <https://exchaintestrpc.okex.org> , Chain ID: 65, Currency Symbol: OKT)
- OKT Chain 测试网代币领取: [OKTC 测试网水龙头](#)
- OKT Chain 测试网浏览器: <https://www.okx.com/cn/explorer/oktc-test>
- OKT Chain 官方仓库: [okx/exchain](#)

参考代码: [nibbstack/erc721: The reference implementation of the ERC-721 non-fungible token standard. \(github.com\)](#)

实验内容

1. 准备好三个账户， 以下是示例

账户A: 0x03C6FcED478cBbC9a4FAB34eF9f40767739D1Ff7

账户B: 0x1aE0EA34a72D944a8C7603FfB3eC30a6669E454C

账户C: 0x0A098Eda01Ce92ff4A4CCb7A4fFFb5A43EBC70DC

2. 上传自己的头像（或其他图片）到图床（自己搜索合适的图床）， 并拿到图片地址；

3. 部署合约：

- 部署 NFTTokenMetadataEnumerableMock 合约， 名字为自己姓名全拼及其缩写

4. 部署合约到本地或者教学测试网；

DEPLOY

NAME_: LiangPeili

SYMBOL_: LPL



Calldata



Parameters

transact



Publish to IPFS

OR

At Address

Load contract from Address

Transactions recorded

21



Deployed Contracts



LPL AT 0X236...B00D8 (MEMORY)



5. mint一个tokenId为1的nft到账户A;

mint

_to:


0x03C6FcED478cBbC9a4FAB34i


_tokenId:

1

_uri:

https://sample.com

 Calldata

 Parameters

transact

6. 查看账户A的余额;

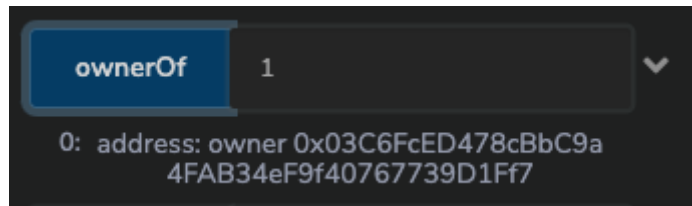
balanceOf

0x03C6FcED478cBbC9a4FAB

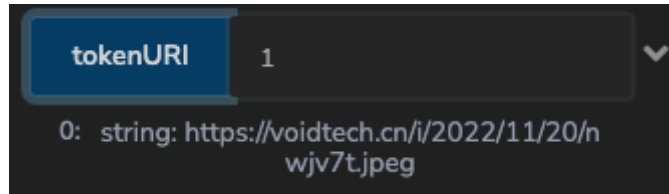
▼

0: uint256: 1

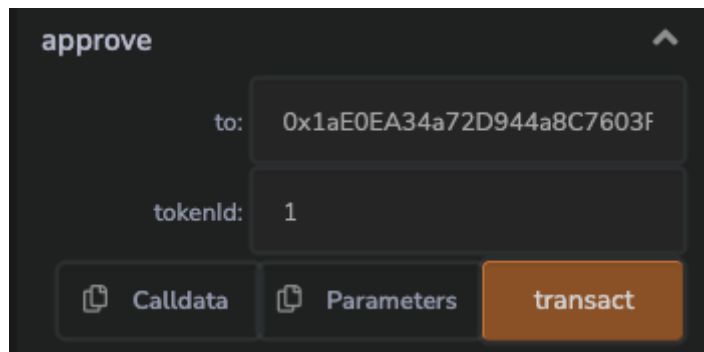
7. 查看tokenId为1的owner



8. 查看tokenId为1的tokenURI



9. 使用账户A对账户B进行approve



10. 调用getApproved, 查看tokenId为1的返回值

getApproved

tokenId: 1

Calldata Parameters call

0: address: 0x1aE0EA34a72D944a8C7603
FfB3eC30a6669E454C

11. 使用账户B调用transferFrom，把tokenId为1的NFT从账户A转到账户C；

safeTransferFrom

from: 0x03C6FcED478cBbC9a4FAB34

to: 0x0A098Eda01Ce92ff4A4CCb7,

tokenId: 1

Calldata Parameters transact

12. mint tokenId为2 的nft到账户A；

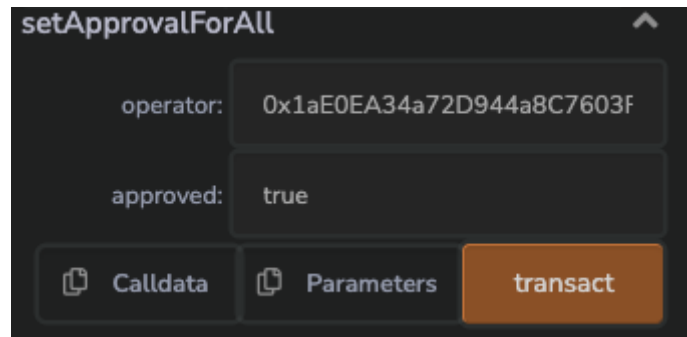
mint

to: 0x03C6FcED478cBbC9a4FAB34

tokenId: 2

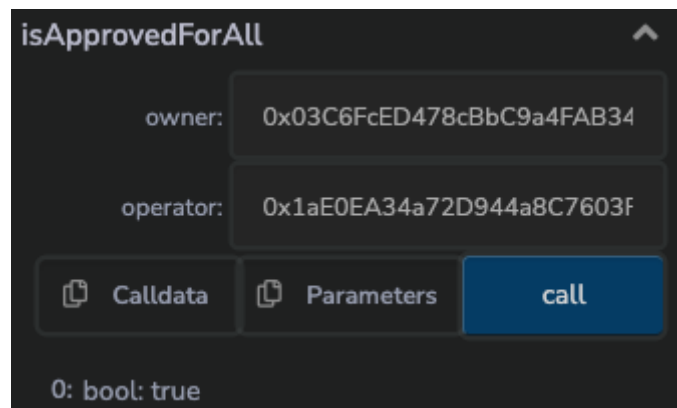
Calldata Parameters transact

13. 使用账户A调用setApprovalForAll, 对账户B进行approve



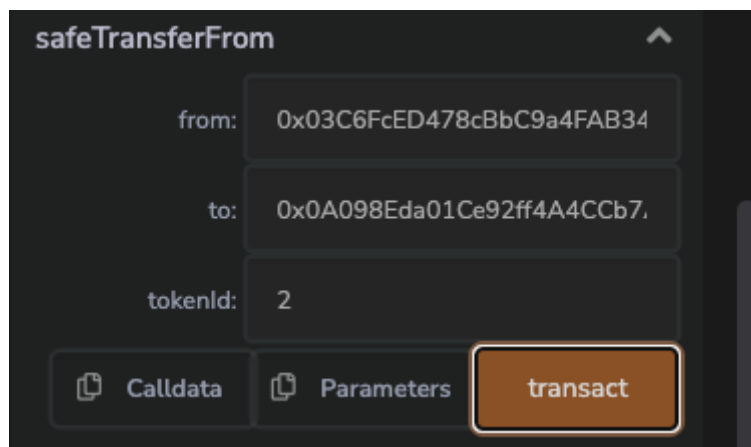
The screenshot shows a transaction interface for the `setApprovalForAll` function. It has two input fields: `operator:` with the value `0x1aE0EA34a72D944a8C7603f` and `approved:` with the value `true`. At the bottom, there are three buttons: `Calldata`, `Parameters`, and `transact` (which is highlighted in orange).

14. 调用isApprovedForAll, 查看授权状态

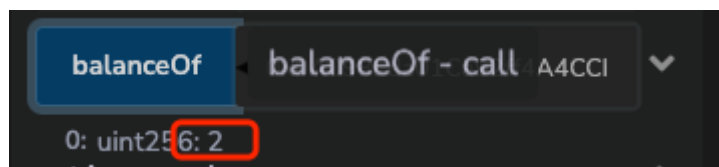


The screenshot shows a transaction interface for the `isApprovedForAll` function. It has two input fields: `owner:` with the value `0x03C6FcED478cBbC9a4FAB34` and `operator:` with the value `0x1aE0EA34a72D944a8C7603f`. At the bottom, there are three buttons: `Calldata`, `Parameters`, and `call` (which is highlighted in blue). Below the buttons, the output is displayed as `0: bool: true`.

15. 使用账户B, 转移tokenId为2的NFT到账户C;



16. 查看账户C的余额



17. 修改合约代码，使得只有owner才可以mint；

截图自己修改后的代码放到这里；

18. 对比erc20和erc721 transfer事件的异同，并阐述原因；

19. 对比erc20和ERC721 approval 事件的异同，并阐述原因；

实验报告内容

按上面要求进行截图以及回答问题，连同合约代码一起发送邮箱；

在实验报告开头中写明：姓名/学号/班级，内容参考上面实验报告示例；

实验报告提交方式

实验报告完成后发送到邮箱 cbireport@163.com ， 标题为 [学号-班级-姓名-第三次实验报告](#)