



# Sui Move 学习：Task 5 Swap

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这次的 task5 是交换task2中铸造的两个coin，这里后续用A代指 FUNNYYANNE COIN，B 代指 FUNNYYANNE\_FAUCET\_COIN

资金池：在task4也使用到的 pool，是存储代币的一个地方，当

1. 查看余额 `sui client balance` ，也可以使用 `sui client balance --with-coins` 查看该钱包地址coin的详细信息。

```

/Developer/web3project/move_cli/letsmove/mover/funnyanne/code/tasks -git.[funnyanne]
sui client balance
[warn] Client/Server api version mismatch, client api version : 1.37.1, server api version : 1.37.1

Balance of coins owned by this address

  coin                                balance (raw)  balance
  Sui                                16677855940    16.67 SUI
  FUNNYYANNE_FAUCET_COIN             1200           0.00 FUNNYYANNE_FAUCET_COIN
  FUNNYYANNE_FAUCET_COIN            113002200      0.11 FUNNYYANNE_FAUCET_COIN
  FUNNYYANNE COIN                     2000000        0.00 FUNNYYANNE COIN
  Funnyanne                           20000000000     2.00 FUNNYYANNE COIN
  FUNNYYANNE_FAUCET_COIN            20000000000     2.00 FFC

```

## 2. 查看coin A

```
sui client object 0xa7824ffbe6e1d0fc12915b9206a78a4343b0316c302d144e7a409bdfef1d6b969 --json
```

[illegible]

### 3. 加入交易池

```
public entry fun add_liquidity( pool: &mut Pool, coin_a: Coin<FUNNYYANNE_COIN>, coin_b: Coi
    let a_amount = coin::value(&coin_a);
    let b_amount = coin::value(&coin_b);

    assert!(a_amount > 0 && b_amount > 0, E_ZERO_AMOUNT);

    balance::join(&mut pool.coin_a, coin::into_balance(coin_a));
    balance::join(&mut pool.coin_b, coin::into_balance(coin_b));

    event::emit(LiquidityEvent
    {
        provider: tx_context::sender(ctx),
        coin_a_amount: a_amount,
        coin_b_amount: b_amount,
        coin_a_type: string::utf8(b"FUNNYYANNE_COIN"),
        coin_b_type: string::utf8(b"FUNNYYANNE_FAUCET_COIN"),
        timestamp: tx_context::epoch(ctx),
    })
}
```

```
sui client call --gas-budget 500000000 --package <packageid> --module swap --function add
```

Transaction Block Events

EventID: 6EU3b8h7bUTcPrZP1yUDfe2iCwoSJYXwF7aJxfEGmn9:0  
PackageID: 0x01e6897eaf9ace491c0a04cc4471d8842ac5317c2453495e700735ad11450262  
Transaction Module: swap  
Sender: 0x4f7deae55c7bc52393269bf7e9ed4be4709b519bd44e902c746ec9b54011328f  
EventType: 0x1e6897eaf9ace491c0a04cc4471d8842ac5317c2453495e700735ad11450262::swap::LiquidityEvent  
ParsedJSON:

coin_a_amount	100000
coin_a_type	FUNNYYANNE_COIN
coin_b_amount	1200
coin_b_type	FUNNYYANNE_FAUCET_COIN
provider	0x4f7deae55c7bc52393269bf7e9ed4be4709b519bd44e902c746ec9b54011328f
timestamp	552

此时这两个coin 已经加入资金池，被delete掉了。

Digest: 5UA1ewYZeZBOUVQMdAVdXBSfHRHXBSUDPU6TTr4prDCQ

Deleted Objects:

ID: 0x19dce56b4d982ddef54aa9744d9e0a384bef003394b639eaa59eff02299a6b03  
Version: 106565102  
Digest: 7gyGAp71YXQRoxmFBaHxofQXAipvgHyBKPymdSJxyvz

ID: 0xb2fd3e1ee9f5eedaa9b306e50dfb6dec23cb4a3dd02a2d79d2d0388ce8babda0  
Version: 106565102  
Digest: 7gyGAp71YXQRoxmFBaHxofQXAipvgHyBKPymdSJxyvz

用的是这两个coin ，后续再查阅持有的coin 已经无法找到了。

FUNNYYANNE_FAUCET_COIN: 1 coin, Balance: 1200 (0.00 FUNNYYANNE_FAUCET_COIN FUNNYYANNE_FAUCET_COIN)		
coinId	balance (raw)	balance
0xb2fd3e1ee9f5eedaa9b306e50dfb6dec23cb4a3dd02a2d79d2d0388ce8babda0	1200	0.00 FUNNYYANNE_FAUCET_COIN

FUNNYYANNE_FAUCET_COIN: 9 coins, Balance: 113002200 (0.11 FUNNYYANNE_FAUCET_COIN FUNNYYANNE_FAUCET_COIN)		
coinId	balance (raw)	balance
0xb737421850dd670936d40d18be12ffc5a4c766d82a5a74841ef683e47e35068e	100000000	0.10 FUNNYYANNE_FAUCET_COIN
0x4290ed3ae36c45cfdb0caf0e8d554d3b171ba8d92a917869d9026466ba139256	2400000	0.00 FUNNYYANNE_FAUCET_COIN
0x9590ab9af1c097678c06c18376729f25b5870c57b764ccc007950c43401cee7d	2400000	0.00 FUNNYYANNE_FAUCET_COIN
0xc03e9ad9e1ce8f5ccbf0b9b3522247881630b93ba604e378c2f7b3d8959fb1c0	2400000	0.00 FUNNYYANNE_FAUCET_COIN
0xea3fd65a6732ba21e749857c51b11d37ce4c2c795d40ec12d62037ea05063312	2400000	0.00 FUNNYYANNE_FAUCET_COIN
0xf4a5eec4cf69c7495396dd0cee8283172a0c3bb34d675c28102eeeff7dfde545	2400000	0.00 FUNNYYANNE_FAUCET_COIN
0x92d02ee7bb3a41ca6ba8d8fa2b49c87a209a278514617708c08abaa012d28c90	1000000	0.00 FUNNYYANNE_FAUCET_COIN
0x1cbc2aadb1c2a668f3a8d39841fd73fa8e3c8ddd9c05125da4d22c3c48345c3e	1200	0.00 FUNNYYANNE_FAUCET_COIN
0x40fb5a65686bf469e7f517386cada3df1f053e0cdf5f63c6b346e9acf0e6e5bf	1000	0.00 FUNNYYANNE_FAUCET_COIN

FUNNYYANNE COIN: 4 coins, Balance: 2000000 (0.00 FUNNYYANNE COIN FUNNYYANNE COIN)		
coinId	balance (raw)	balance
0xccea05ab2e788348b8345ee1bfedfb7b0f4a7af8b2d894758368e9d4682a56a0	1000000	0.00 FUNNYYANNE COIN
0x5ab48f1b5486274273be28f2ebf9d17bb762ad29fc9ea098e7fdb9cc3d9d49dd	900000	0.00 FUNNYYANNE COIN
0x19dce56b4d982ddef54aa9744d9e0a384bef003394b639eaa59eff02299a6b03	100000	0.00 FUNNYYANNE COIN
0x13cbc3915002f05d5a72fbd28e7080ec4c869dc8dff30f18f049d7a8c228b3b2	0	0.00 FUNNYYANNE COIN

3.swap A to B

```
public entry fun swap_a_to_b( pool: &mut Pool, coin_a_in:Coin<FUNNYYANNE_COIN>,ctx: &mut TxContext) {
    let a_amount = coin::value(&coin_a_in);
    assert!(a_amount > 0,E_ZERO_AMOUNT);

    let b_reserve = balance::value(&pool.coin_b);
    assert!(b_reserve > 0, E_INSUFFICIENT_LIQUIDITY);

    let a_reserve = balance::value(&pool.coin_a);
    let b_out = (a_amount * b_reserve) / (a_reserve + a_amount);

    assert!(b_out > 0 && b_out <= b_reserve, E_INSUFFICIENT_LIQUIDITY);

    // change
    balance::join(&mut pool.coin_a, coin::into_balance(coin_a_in));
    let coin_b_out = coin::take(&mut pool.coin_b, b_out, ctx);
    transfer::public_transfer(coin_b_out, tx_context::sender(ctx));

    event::emit(SwapEvent {
        sender: tx_context::sender(ctx),
        coin_in_amount: a_amount,
        coin_out_amount: b_out,
        coin_in_type: string::utf8(b"FUNNYYANNE_COIN"),
    })
}
```

```
        coin_out_type: string::utf8(b"FUNNYYANNE_FAUCET_COIN"),
        timestamp: tx_context::epoch(ctx),
    });
}
```

```
sui client call --gas-budget 50000000 --package <packageid> --module swap --function swap_a_to_b --args <pool> <coin A>
```

Balance Changes

Owner: Account Address ( 0x4f7deae55c7bc52393269bf7e9ed4be4709b519bd44e902c746ec9b54011328f )  
CoinType: 0x2::sui:SUI  
Amount: -1144932

Owner: Account Address ( 0x4f7deae55c7bc52393269bf7e9ed4be4709b519bd44e902c746ec9b54011328f )  
CoinType: 0x46fccdd5bc998cde5e22834e64ce8a512ae519a5e69793a3d1ba0f33246c0653::funnyyanne\_faucet\_coin::FUNNYYANNE\_FAUCET\_COIN  
Amount: 1080

Owner: Account Address ( 0x4f7deae55c7bc52393269bf7e9ed4be4709b519bd44e902c746ec9b54011328f )  
CoinType: 0xa7824ffbe6e1d0fc12915b9206a78a4343b0316c302d144e7a409bdfe1d6b969::funnyyanne\_coin::FUNNYYANNE\_COIN  
Amount: -900000

annelo@AnnedeMacBook-Pro funnyvanne %

Funnyvanne

输出事件：

Transaction Block Events

EventID: yXiCYwvptv6ux1bSwmp2nNf7wWjg2Y9of2bXB7NEdGu:0  
PackageID: 0x01e6897eaf9ace491c0a04cc4471d8842ac5317c2453495e700735ad11450262  
Transaction Module: swap  
Sender: 0x4f7deae55c7bc52393269bf7e9ed4be4709b519bd44e902c746ec9b54011328f  
EventType: 0x1e6897eaf9ace491c0a04cc4471d8842ac5317c2453495e700735ad11450262::swap::SwapEvent  
ParsedJSON:

coin_in_amount	900000
coin_in_type	FUNNYYANNE_COIN
coin_out_amount	1080
coin_out_type	FUNNYYANNE_FAUCET_COIN
sender	0x4f7deae55c7bc52393269bf7e9ed4be4709b519bd44e902c746ec9b54011328f
timestamp	552

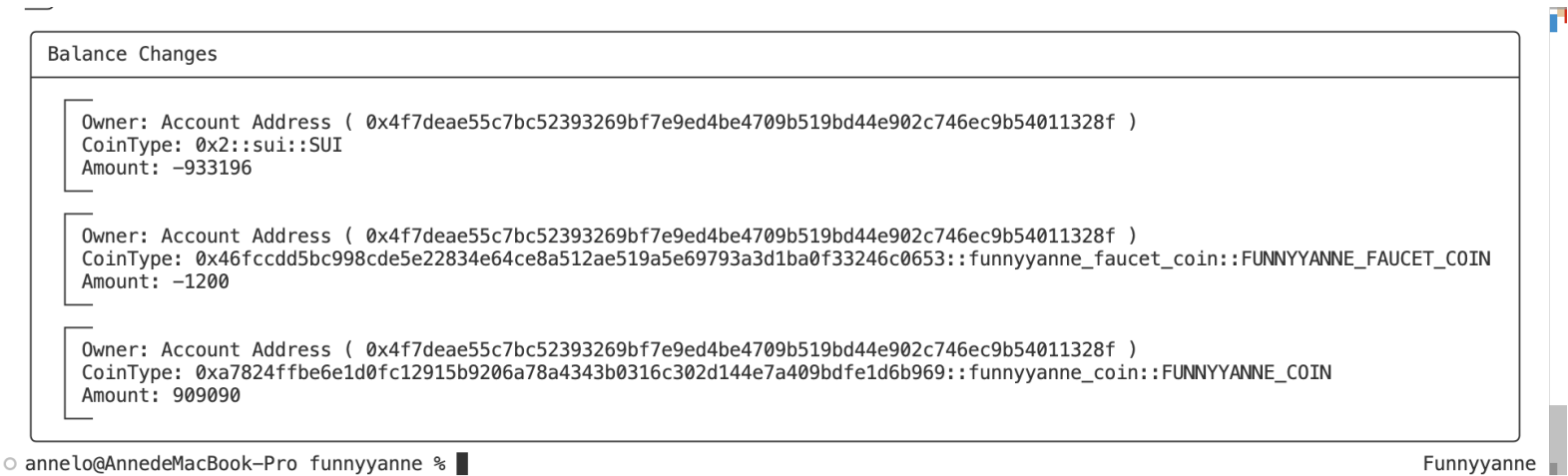
4. 同理b换a

Transaction Block Events

EventID: 4szy1rW4ESQoNAd1UHvUS17Wvxkdz2GggosbNEnP3PDb:0  
PackageID: 0x01e6897eaf9ace491c0a04cc4471d8842ac5317c2453495e700735ad11450262  
Transaction Module: swap  
Sender: 0x4f7deae55c7bc52393269bf7e9ed4be4709b519bd44e902c746ec9b54011328f  
EventType: 0x1e6897eaf9ace491c0a04cc4471d8842ac5317c2453495e700735ad11450262::swap::SwapEvent  
ParsedJSON:

coin_in_amount	1200
coin_in_type	FUNNYYANNE_FAUCET_COIN
coin_out_amount	909090
coin_out_type	FUNNYYANNE_COIN
sender	0x4f7deae55c7bc52393269bf7e9ed4be4709b519bd44e902c746ec9b54011328f
timestamp	552

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⚠️ 需要注意 coin id 必须使用部署在相同环境下，同一个packageid 下铸造的coin 。

你可以 mint 一个 coin，把这个 coin 拆分多个进行测试，也可以 mint 多个 coins。

一个 coin 在一次函数调用就会被使用，然后 delete。引用的一个合约地址，指定了一个 packadeid 后，别的包铸造的coin会找不到。

触发类似这样的错误：

```
#Error 1 是引用了别的合约所铸造的coin id导致的
Error executing transaction '6mPBUnEyHm7TtkFxcYSQLavfoTsx2rG6WbPZedJhXFP': CommandArgumentError

#Error2 这个coin 已经被使用了。
Object 0xb2fd3e1ee9f5eedaa9b306e50dfb6dec23cb4a3dd02a2d79d2d0388ce8babda0 does not exist
```