Substrate

River

Interaction-002

Transferring a Kitty

https://substrate.dev/substrate-collectables-workshop/#/3/transferring-a-kitty

转移要更新的存储内容

1- 更新Kitty的owner

KittyOwner get(owner_of): map T::Hash => Option<T::AccountId>;

2- 改变每个用户拥有Kitty的数量

OwnedKittiesCount get(owned_kitty_count): map T::AccountId => u64;

3- 改变拥有的kitty的index

OwnedKittiesIndex: map T::Hash => u64;

4- 改变kitty拥有者的map

OwnedKittiesArray get(kitty_of_owner_by_index): map (T::AccountId, u64) => T::Hash;

Swap and Pop 交换和弹出

```
let new_owned_kitty_count_from = owned_kitty_count_from.checked_sub(1)
            .ok_or("underflow subing a new kitty from the AccountId")?;

let kitty_index = <OwnedKittiesIndex<T>>::get(kitty_id);

if kitty_index != new_owned_kitty_count_from {
    let last_kitty_id = <OwnedKittiesArray<T>>::get((from.clone(),
new_owned_kitty_count_from));
    <OwnedKittiesArray<T>>::insert((from.clone(), kitty_index), last_kitty_id);
    <OwnedKittiesIndex<T>>::insert(last_kitty_id, kitty_index);
}
```

A中有2只Kitty，转移第一只Kitty给B

kitty_index => 0

new_owned_kitty_count_from => 1

last_kitty_id => A001

A,0 => A001

A001 => 0

A	=> index	=> kitty_id
2	0	A000
	1	A0001

A	=> index	=> kitty_id
1	0	A0001

Swap and Pop 交换和弹出

A => B
2 3

index_A => index_B
0 0
1 1
2

kitty_id_A => kitty_id_B
A000 B000
A001 B001
B002

转移A的第一只Kitty给B

A => B
1 4

index_A => index_B
0 0
1
2
3

kitty_id_A => kitty_id_B
A001 B000
B001
B002
A000

You Turn!

- transfer()

- transfer_from()

- 测试

总结：

- 4个存储的更新

- Swap and Pop

- KittyOwner get(owner_of): map T::Hash => Option<T::AccountId>;

- OwnedKittiesArray get(kitty_of_owner_by_index): map (T::AccountId, u64) => T::Hash;
- OwnedKittiesCount get(owned_kitty_count): map T::AccountId => u64;
- OwnedKittiesIndex: map T::Hash => u64;

视频：

转移前
Alice
- 0 **0xd5f41938f073631353c8e9c6aefc16ea7bbe25de08f322eba86028a7c39b428e**

- 1 0x847641f6994bf5592bffd2309220dd44988aa052173f2cc84ee6400b379e4176

Bob

- 0 0x831126a19e78084aad9ec5b2acf2fdd5841558001b516951b0a5d0348c6630d4
- 1 0x5b5054ac9049bddd126952eb2f766e5ee60242a130b109cb9da9007b872cdb2a

转移后
Alice
- 0 **0x847641f6994bf5592bffd2309220dd44988aa052173f2cc84ee6400b379e4176**

Bob

- 0 0x831126a19e78084aad9ec5b2acf2fdd5841558001b516951b0a5d0348c6630d4
- 1 0x5b5054ac9049bddd126952eb2f766e5ee60242a130b109cb9da9007b872cdb2a
- 2 **0xd5f41938f073631353c8e9c6aefc16ea7bbe25de08f322eba86028a7c39b428e**

Substrate

River

Thanks