

1. 完成课程中的pallet功能，在本地可以编译通过，运行。

2. KittyIndex不在pallet中指定，而是在runtime里面绑定

3. 扩展存储，能得到一个账号拥有的所有kitties

4. create和breed需要质押一定数量的token，在transfer的时候能转移质押。

5. 通过polkadot js可以成功调用pallet里面的功能

(1) 创建猫咪

- Alice创建了4只猫咪



• Bob创建了2只猫咪

The screenshot shows the Substrate Dev UI interface for submitting a transaction. The top navigation bar includes 'Development node-template/100 #25', '账户', '网络', '开发者', and '设置'. The main area is titled 'Submission' and shows the transaction details for 'kittiesModule.create'. The transaction is submitted by account 'BOB'. The encoded call data is '0x0b00'. The encoded call hash is '0xf2472a3093ba21e07c3ed2938da1158e3d03d1f9527b2085180288a80437a21'. The transaction is confirmed with a green checkmark and the message 'kittiesModule.create inblock'. The transaction details show the call index '0b00' and the link '#/extrinsics/decode/0'. The transaction is submitted by account 'BOB'.

(2) 查看帐号下拥有的所有猫咪

The screenshot shows the Substrate Dev UI interface for viewing the storage state of 'kittiesModule'. The top navigation bar includes 'Development node-template/100 #56', '账户', '网络', '开发者', and '设置'. The main area is titled '链状态' and shows the storage state for 'kittiesModule'. The storage state is 'owner2Kitties(AccountId32): Option<Vec<u32>>'. The storage state is 'Owner2Kitties'. The storage state is 'BOB'. The storage state is 'blockhash to query at 0x...'. The storage state is 'encoded storage key 0x35fb8a5d82ead9da9b70d5f91f0cd60c21cdd5daa0b438f812d84b1527db5de4f9aea1afa791265fae359272badc1cf8eaf04151687736326c9fea17e25fc5287613693c912909cb226aa4794f26a48'. The storage state is 'encoded key details module 35fb8a5d82ead9da9b70d5f91f0cd60c21cdd5daa0b438f812d84b1527db5de method 4f9aea1afa791265fae359272badc1cf8eaf04151687736326c9fea17e25fc5287613693c912909cb226aa4794f26a48'. The storage state is 'kittiesModule.owner2Kitties: Option<Vec<u32>> [4 5] Bob'. The storage state is 'kittiesModule.owner2Kitties: Option<Vec<u32>> [0 1 2 3] Alice'.

(3) 查看猫咪主人

The screenshot shows the Substrate Dev UI interface for viewing the storage state of 'kittiesModule'. The top navigation bar includes 'Development node-template/100 #40', '账户', '网络', '开发者', and '设置'. The main area is titled '链状态' and shows the storage state for 'kittiesModule'. The storage state is 'kittyOwner(u32): Option<AccountId32>'. The storage state is 'KittyOwner'. The storage state is 'u32 3'. The storage state is 'blockhash to query at 0x...'. The storage state is 'encoded storage key 0x35fb8a5d82ead9da9b70d5f91f0cd60cd6e7292b5346f85e63a66f36e72675de18007c0afadc771c45bf719bc7fe5103000000'. The storage state is 'encoded key details module 35fb8a5d82ead9da9b70d5f91f0cd60c21cdd5daa0b438f812d84b1527db5de method dde7292b5346f85e63a66f36e72675 Blake2_128Concat(u32) de18007c0afadc771c45bf719bc7fe5103000000'. The storage state is 'kittiesModule.kittyOwner: Option<AccountId32> 5FhneW46xGXgs5mUiveU4sbTyGBzmstUspZC92UhjJM694ty 3-> Bob'. The storage state is 'kittiesModule.kittyOwner: Option<AccountId32> 5GrwvaEF5zXb2Fz9rcQpDWS57CtERHpNehXCPcNoHGKutQY 0-> Alice'.

(4) 繁殖猫咪

Development
node-template/100
#55

账户 ▾ 网络 ▾ 开发者 ▾ 设置

交易

Submission Decode

使用已选的账户
ALICE

提交下面的外部信息
kittiesModule bread(kittyId1, kittyId2) bread

kittyId1: u32 (KittyIndex)
0

kittyId2: u32 (KittyIndex)
3

encoded call data
0x0b010000000003000000

encoded call hash
0xbe4e93b8d48e2eac53184a2d40874b39add151c6a1d833c77de30e150efce4d

encoding details
callIndex 0b01
kittyId1 00000000
kittyId2 03000000
link #/extrinsics/decode/0x0b010000000003000000

提交未签名 提交交易

Development
node-template/100
#60

账户 ▾ 网络 ▾ 开发者 ▾ 设置

链状态

存储 常数 原始存储

查询所选状态
kittiesModule kittyOwner(u32): Option<AccountId32> KittyOwner

u32
5 包括选项

blockhash to query at
0x...

encoded storage key
0x35fb8a5d82ead9da9b70d5f91f0cd60cdd6e7292b5346f85e63a66f36e72675969e061847da7e84337ea78dc577cd1d05000000

encoded key details
module 35fb8a5d82ead9da9b70d5f91f0cd60c
method dd6e7292b5346f85e63a66f364e72675
Blake2_128Concat(u32) 969e061847da7e84337ea78dc577cd1d05000000

kittiesModule.kittyOwner: Option<AccountId32>
5GrwvaEF5zXb26Fz9rcQpDWS57CtERHpNehXCPcNoHGKutQY 5->Alice

kittiesModule.kittyOwner: Option<AccountId32>
5FHneW46xGXgs5mUiveU4sbTyG8zmstUspZC92UhjJM694ty

kittiesModule.kittyOwner: Option<AccountId32>
5GrwvaEF5zXb26Fz9rcQpDWS57CtERHpNehXCPcNoHGKutQY

(5) 转移猫咪

• 无转移权限

Development
node-template/100
#73

账户
网络
开发者
设置

kittiesModule.transfer
inblock

交易
Submission
Decode

使用已选的账户
ALICE

提交下面的外部信息
kittiesModule
transfer(kittyId, newOwner)
transfer

kittyId: u32 (KittyIndex)
3

newOwner: AccountId32
EVE
SHGjWAEFDFFCWPsjFQdVV2Msvz2XtMktvgocEZCcJ68kUMaw

encoded call data
0x0b0203000000e659a7a1628cdd93fbc04a4e0646ea20e9f5f0ce097d9a0...
290d4a9e054df4e

encoded call hash
0x24c7f079fe247938b31216b52b7b9a69db1f554fa28e35ffe7d4ba14f6b75...
186

encoding details
callIndex 0b02
kittyId 03000000
newOwner e659a7a1628cdd93fbc04a4e0646ea20e9f5f0ce097d9a05290d4a9e054df4e
link #/extrinsics/decode/0x0b0203000000e659a7a1628cdd93feb...

提交未签名
提交交易

• 转移给EVE

Development
node-template/100
#79

账户
网络
开发者
设置

kittiesModule.transfer
inblock

交易
Submission
Decode

使用已选的账户
ALICE

提交下面的外部信息
kittiesModule
transfer(kittyId, newOwner)
transfer

kittyId: u32 (KittyIndex)
5

newOwner: AccountId32
EVE
SHGjWAEFDFFCWPsjFQdVV2Msvz2XtMktvgocEZCcJ68kUMaw

encoded call data
0x0b0205000000e659a7a1628cdd93fbc04a4e0646ea20e9f5f0ce097d9a0...
290d4a9e054df4e

encoded call hash
0x4secf7aad069d00616257f8490730df866cd6383da4c4cb94e9805a04c7e...
290

encoding details
callIndex 0b02
kittyId 05000000
newOwner e659a7a1628cdd93fbc04a4e0646ea20e9f5f0ce097d9a05290d4a9e054df4e
link #/extrinsics/decode/0x0b0205000000e659a7a1628cdd93feb...

提交未签名
提交交易

Development
node-template/100
#83

账户
网络
开发者
设置

链状态
存储
常数
原始存储

查询所选状态
kittiesModule
kittyOwner(u32): Option<AccountId32>
KittyOwner
+

u32
5
包括选项

blockhash to query at
0x...

encoded storage key
0x35fb8a5d82ead9da9b70d5f91f0cd60cdd6e7292b5346f85e63a66f36...
e72675969e061847da7e84337ea78dc577cd1d05000000

encoded key details
module 35fb8a5d82ead9da9b70d5f91f0cd60c
method d6e7292b5346f85e63a66f364e72675
Blake2_128Concat(u32) 969e061847da7e84337ea78dc577cd1d05000000

kittiesModule.kittyOwner: Option<AccountId32>
SHGjWAEFDFFCWPsjFQdVV2Msvz2XtMktvgocEZCcJ68kUMaw
5->EVE

kittiesModule.kittyOwner: Option<AccountId32>
5FHneW46xGqs5mUiveU4sbTyGBzmstUspZC92UhjJM694ty

kittiesModule.kittyOwner: Option<AccountId32>
5GrwvaEF5zXb26Fz9rcQpDWS57CtERHpNehXCPcNoHGKutQY