

# Ticket Tutorial

Reference: <https://medium.com/@magnum6/replay-aptos-tutorial-episode-1-create-things-90920fcdf409>

# 사전 준비

1. Welldone 지갑 설치

( <https://docs.welldonestudio.io/ko/wallet/manual/how-to-install/> )

2. Aptos CLI 설치

( <https://aptos.dev/cli-tools/aptos-cli-tool/> )

aptos init --profile seller  
aptos init --profile buyer

.aptos/config.yaml 에  
계정 정보가 생성됨.

```
---  
profiles:  
  buyer:  
    private_key: "0xbcd03b6308302622a003d31eca3250fc4128d5e85f6a497179bad7ea73b82267"  
    public_key: "0x24edba1d064fd0eb3375a0700b97e44c810767979f801e14858545dc41a7a2fe"  
    account: a3e1df66286fc28b161a50eb0df6a290e5adfd040d27fce193f2f47d3f28612  
    rest_url: "https://fullnode.devnet.aptoslabs.com"  
    faucet_url: "https://faucet.devnet.aptoslabs.com"  
  seller:  
    private_key: "0xffc486b58d729d8e98061dc0f0a4040c55b5543598b79142dda67adea822cd0d"  
    public_key: "0xe25c40ec050715e1cdece4e38fee2cee1f683bb105fada95caab41d6e7c4daf2"  
    account: b1cd6d72f73f4b38ebe108ce6a7e47fdd86c983ce34709283f19ed34ab135719  
    rest_url: "https://fullnode.devnet.aptoslabs.com"  
    faucet_url: "https://faucet.devnet.aptoslabs.com"
```

<https://appdevtools.com/base58-encoder-dec>

Base58 Encoder / Decoder

Encode Decode

Treat Input As **HEX**

Input HEX

e4a2eb187299f74471aa228846da19dd7539acc90cb31c46563db0aeb3abfe93342bf957e54088b18dd52af4b27d6f456f5ebe5a96017bc21072275641f0d5d

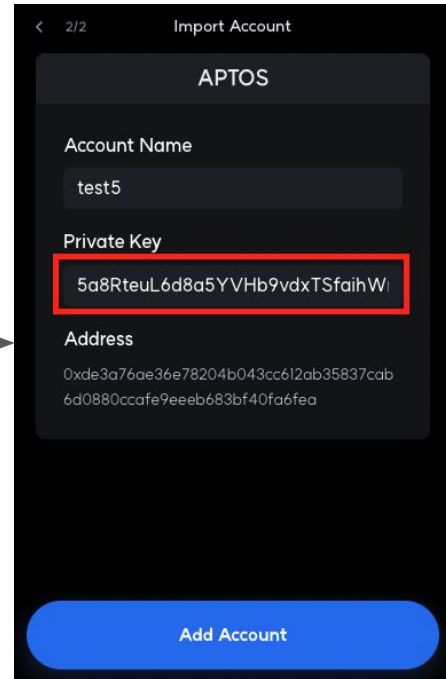
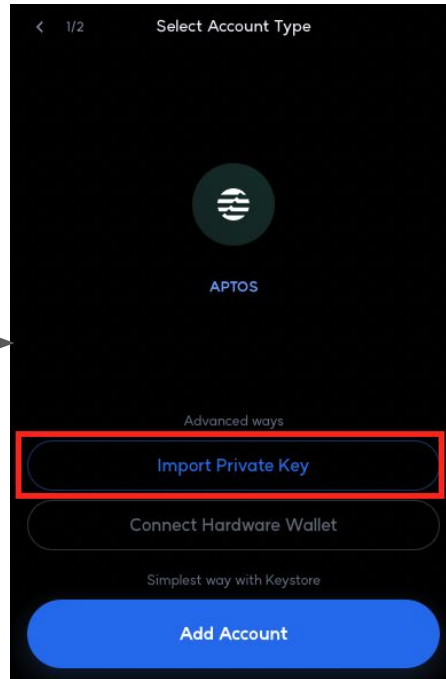
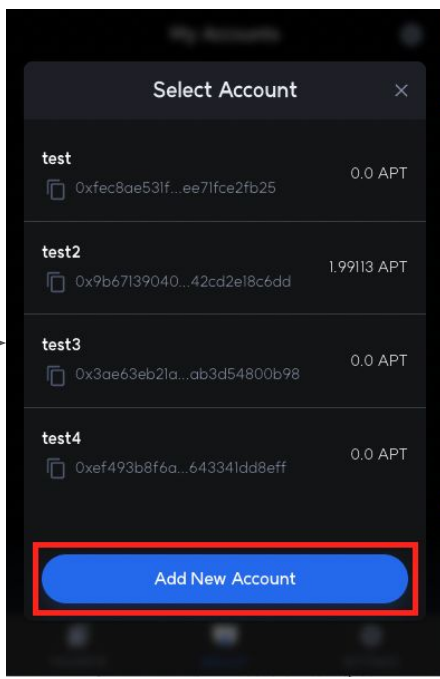
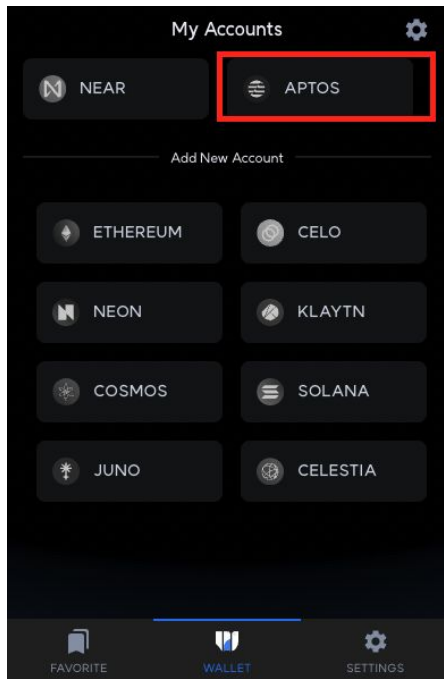
Private Key + Public Key

Output Base58

5a8RteuL6d8a5VYHb9vdxTSfaihWrUhUpaHdtbvRHL3G2vGcEfPFVkcfdH8ESqcBudKjPRJKgibnuhifZnU63Lz8

지갑에 계정을 추가하기 위해 Private Key 항목에 입력하는 값

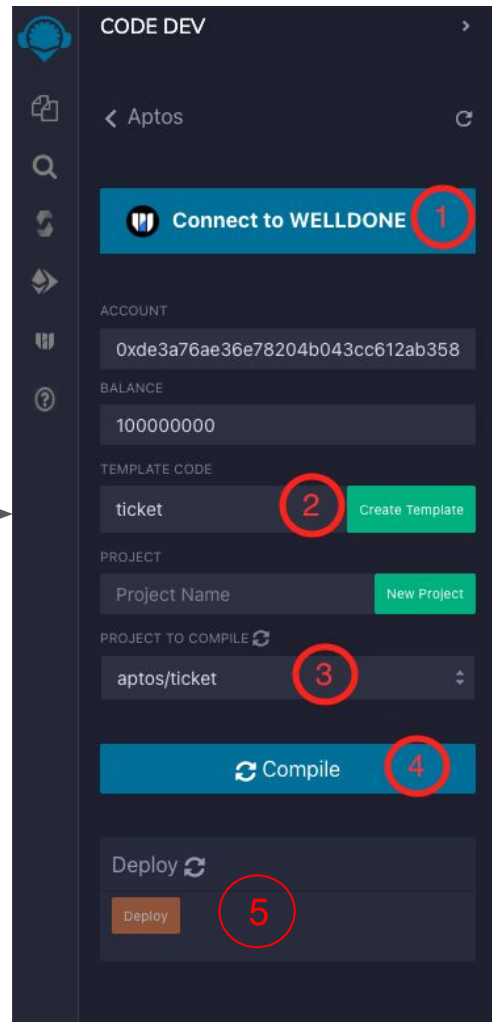
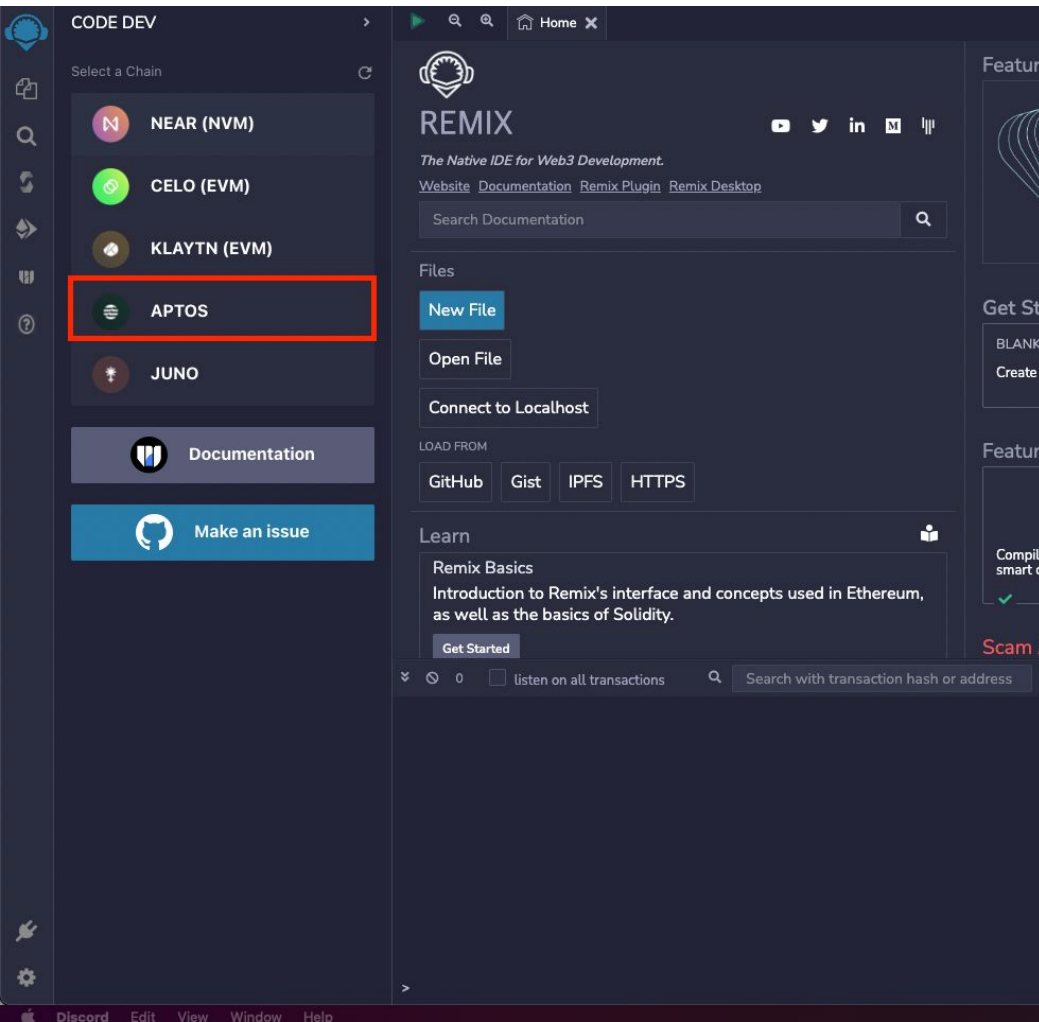
private key + public key 를 base58 로 변환한 값을 지갑 Import 단계에서 Private Key 에 입력



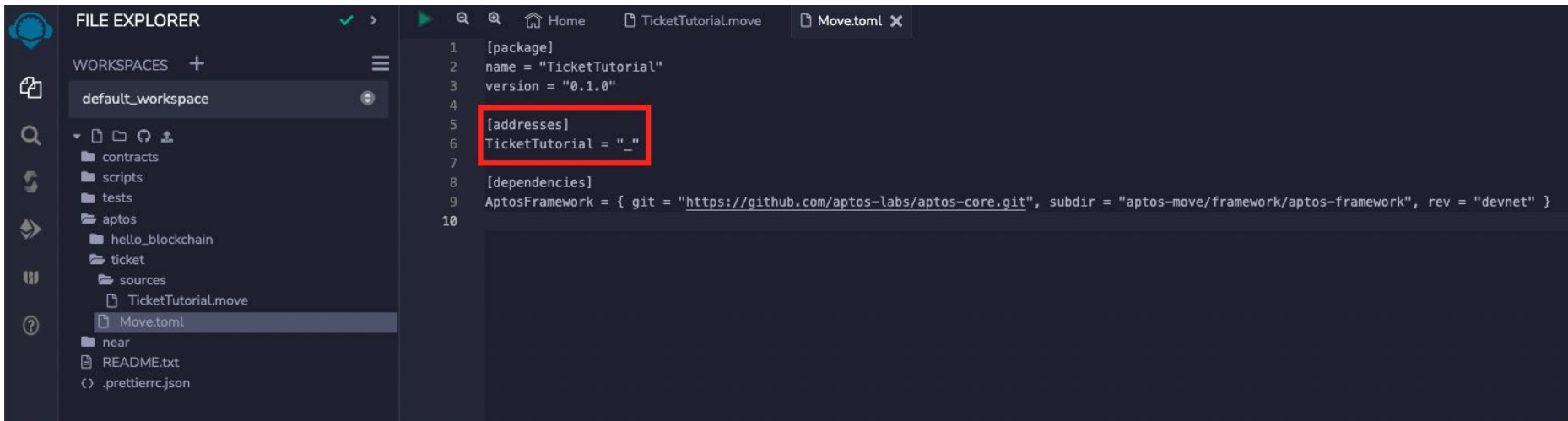
1. <https://remix.ethereum.org> 접속

2. CODE BY WELLDONE STUDIO 플러그인 추가

The image shows the Remix IDE interface. On the left, the 'PLUGIN MANAGER' sidebar is visible, listing several plugins. The 'CODE BY WELLDONE STUDIO' plugin is highlighted with a red box. Below it, other plugins like 'CONTRACT DEPLOYER', 'DEBUGGER', 'DEFI EXPLORER', and 'DEFI TUTORIALS' are listed. At the bottom of the sidebar, a red box highlights a 'Hand' icon. The main workspace area shows the Remix IDE homepage with sections for 'Featured', 'Get Started - Project Templates', and 'Featured Plugins'. A 'Scam Alert' banner is visible at the bottom of the main area.



Compile 전에  
Move.toml 에서  
실제 계정 주소를  
입력해야 함!!  
(다음 페이지 참조)



The image shows a screenshot of the Visual Studio Code editor. On the left, the 'FILE EXPLORER' sidebar is open, showing a project structure with folders like 'contracts', 'scripts', 'tests', 'aptos', and 'near'. The 'TicketTutorial.move' file is selected. The main editor area shows the contents of 'Move.toml' with the following code:

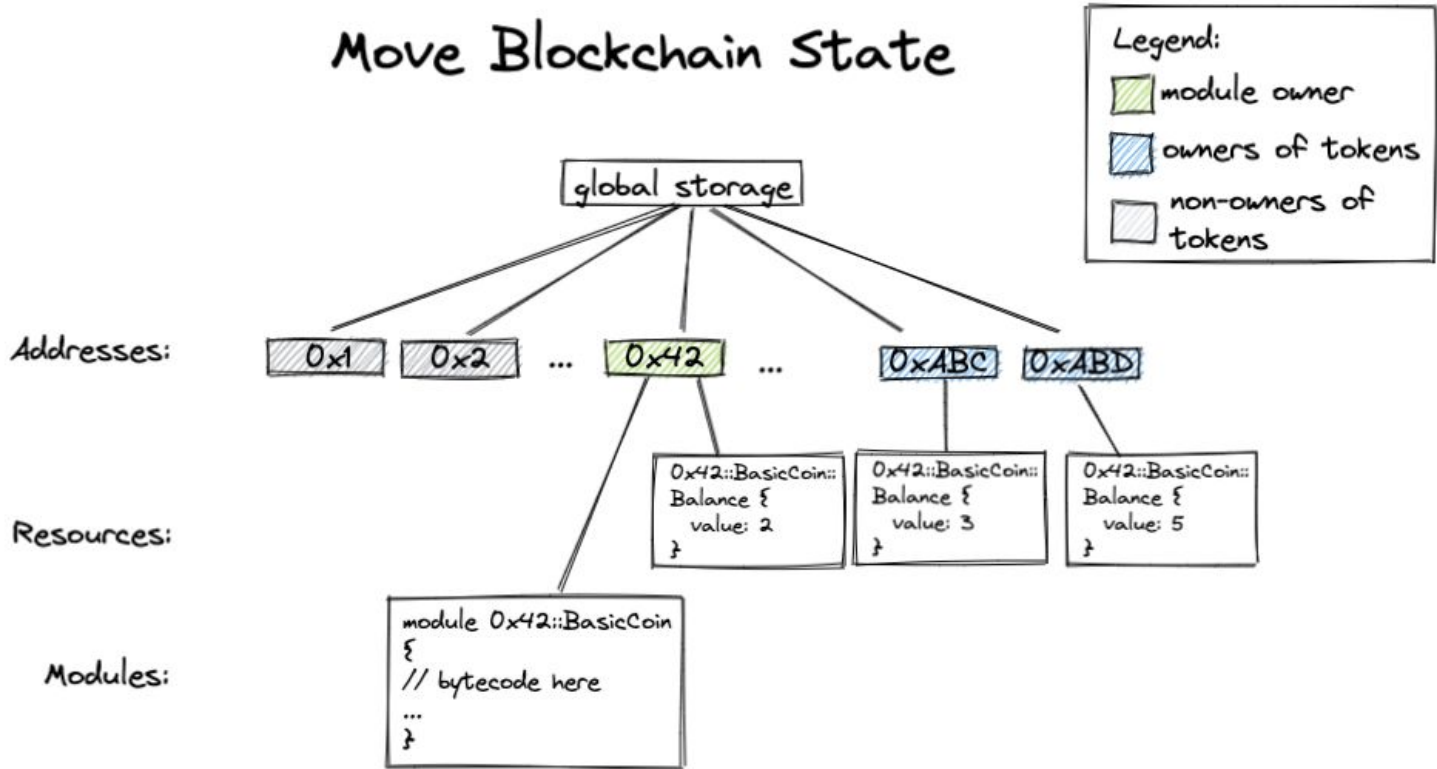
```
1 [package]
2 name = "TicketTutorial"
3 version = "0.1.0"
4
5 [addresses]
6 TicketTutorial = "_"
7
8 [dependencies]
9 AptosFramework = { git = "https://github.com/aptos-labs/aptos-core.git", subdir = "aptos-move/framework/aptos-framework", rev = "devnet" }
10
```

The line `TicketTutorial = "_"` is highlighted with a red box.

“\_” 로 설정된 Account 주소를 아래와 같이 실제 주소로 대체.

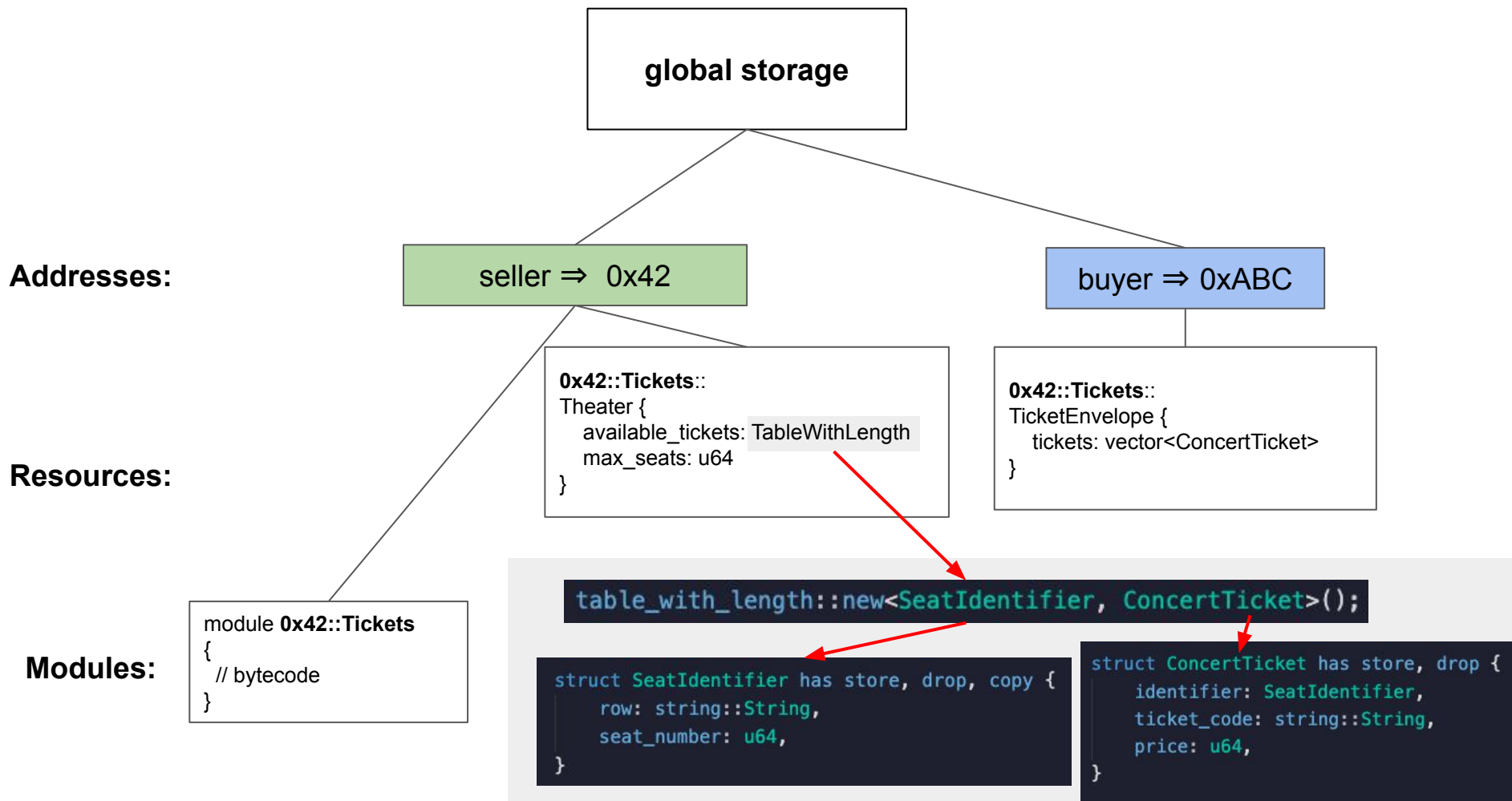
**TicketTutorial = “0xde3a76ae36e78204b043cc612ab35837cab6d0880ccafe9eeeb683bf40fa6fea”**

# Move Blockchain State



<https://github.com/move-language/move/tree/main/language/documentation/tutorial>





# 1. 최대 티켓 판매 개수 설정 ( seller )

```
public entry fun init_theater(  
    seller: &signer,  
    max_seats: u64,  
) {  
    let available_tickets = table_with_length::new<SeatIdentifier, ConcertTicket>();  
    move_to<Theater>(seller, Theater {available_tickets, max_seats});  
}
```

```
aptos move run --profile seller \  
--function-id seller::Tickets::init_theater \  
--args u64:4
```

```
yunsoo@yunsooui-MacBookPro ticket % aptos move run --profile default \  
--function-id default::Tickets::init_venue \  
--args u64:4  
Do you want to submit a transaction for a range of [69400 - 104100] Octas at a gas unit price of 100 Octas? [yes/no] >  
yes  
{  
  "Result": {  
    "transaction_hash": "0x90d2d81c2ed0d38dabd0a09f8712725f33d4e224f7919fc32b8e7a013d606426",  
    "gas_used": 694,  
    "gas_unit_price": 100,  
    "sender": "de3a76ae36e78204b043cc612ab35837cab6d0880ccafe9eeeb683bf40fa6fea",  
    "sequence_number": 1,  
    "success": true,  
    "timestamp_us": 1674635364937813,  
    "version": 3695555,  
    "vm_status": "Executed successfully"  
  }  
}
```

## 2. 티켓 생성 ( seller )


```
public entry fun create_ticket(
    venue_owner: &signer,
    row: string::String,
    seat_number: u64,
    ticket_code: string::String,
    price: u64,
) acquires venue {
    let venue_owner_addr = signer::address_of(venue_owner);
    assert!(exists<Venue>(venue_owner_addr), ENO_VENUE);
    let current_seat_count = available_ticket_count(venue_owner_addr);
    let venue = borrow_global_mut<Venue>(venue_owner_addr);
    assert!(current_seat_count < venue.max_seats, EMAX_SEATS);
    let identifier = SeatIdentifier { row, seat_number };
    let ticket = ConcertTicket {
        identifier,
        ticket_code,
        price,
    };
    table_with_length::add(&mut venue.available_tickets, identifier, ticket)
}
```

```
aptos move run --profile seller \
--function-id seller::Tickets::create_ticket \
--args \
string:A \
u64:18 \
string:AFHND \
u64:25
```


```
yoonsoo@yoonsooui-MacBookPro ticket % aptos move run --profile default \
--function-id default::Tickets::create_ticket \
--args \
string:A \
u64:18 \
string:AFHND \
u64:25

Do you want to submit a transaction for a range of [78800 - 118200] Octas at a gas unit price of 100 Octas? [yes/no] >
yes
{
  "Result": {
    "transaction_hash": "0x32905847920b33582efc98774a30cf87dfd56d4e31c3124f7ae35d04e68a7d92",
    "gas_used": 788,
    "gas_unit_price": 100,
    "sender": "de3a76ae36e78204b043cc612ab35837cab6d0880ccafe9eeeb683bf40fa6fea",
    "sequence_number": 2,
    "success": true,
    "timestamp_us": 1674635890207866,
    "version": 3699663,
    "vm_status": "Executed successfully"
  }
}
```

# Account

0xde3a76ae36e78204b043cc612ab35837cab6d0880ccafe9eeeb683bf40fa6fea 

0.99013 APT

Balance 

 Transactions

 Coins

 Tokens

 Resources

 Modules

 Info

EXPAND ALL | COLLAPSE ALL

Type:

0xde3a76ae36e78204b043cc612ab35837cab6d0880ccafe9eeeb683bf40fa6fea::Tickets::Venue 

```
{
  available_tickets: {
    inner: {
      handle: "0x92465df6bc11e0c738bcd0ce416d1f33844ebc05d610767cbf2363de87eafd16"
    }
    length: "1"
  }
  max_seats: "4"
}
```

POST <https://fullnode.devnet.aptoslabs.com/v1/tables/0x92465df6bc11e0c738bcd0ce416d1f33844ebc05d610767cbf2363de87eafd16/item>

Params Authorization Headers (9) **Body** Pre-request Script Tests Settings

none  form-data  x-www-form-urlencoded  raw  binary  GraphQL **JSON**

```
1  [
2  ... "key_type": "0xde3a76ae36e78204b043cc612ab35837cab6d0880ccafe9eeeb683bf40fa6fea::Tickets::SeatIdentifier",
3  ... "value_type": "0xde3a76ae36e78204b043cc612ab35837cab6d0880ccafe9eeeb683bf40fa6fea::Tickets::ConcertTicket",
4  ... "key": {
5  ... "row": "A",
```

Body Cookies (2) Headers (13) Test Results  Status: 200 OK Time: 696 ms

Pretty Raw Preview Visualize **JSON**

```
1  {
2  "identifier": {
3  "row": "A",
4  "seat_number": "18"
5  },
6  "price": "25",
7  "ticket_code": "AFHND"
8  }
```

```
curl --location --request POST
'https://fullnode.devnet.aptoslabs.com/v1/tables/0x92465df6bc11e0c738bcd0ce416d1f33844ebc05d610767cbf2363de87eafd16/item' \
--header 'Content-Type: application/json' \
--data-raw '{
  "key_type": "0xde3a76ae36e78204b043cc612ab35837cab6d0880ccafe9eeeb683bf40fa6fea::Tickets::SeatIdentifier",
  "value_type": "0xde3a76ae36e78204b043cc612ab35837cab6d0880ccafe9eeeb683bf40fa6fea::Tickets::ConcertTicket",
  "key": {
    "row": "A",
    "seat_number": 18 => "18"
  }
}'
```

```
struct SeatIdentifier has store, drop, copy {
  row: string::String,
  seat_number: u64,
}
```

### 3. 티켓 구매 ( buyer )

```
public entry fun purchase_ticket(
  buyer: &signer,
  venue_owner_addr: address,
  row: string::String,
  seat_number: u64
) acquires Venue, TicketEnvelope {
  let buyer_addr = signer::address_of(buyer);
  let target_seat_id = SeatIdentifier { row, seat_number };
  let venue = borrow_global_mut<Venue>(venue_owner_addr);
  assert!(table_with_length::contains(&venue.available_tickets, target_seat_id));
  let target_ticket = table_with_length::borrow(&venue.available_tickets, target_seat_id);
  coin::transfer<AptosCoin>(buyer, venue_owner_addr, target_ticket.price);
  let ticket = table_with_length::remove(&mut venue.available_tickets, target_seat_id);
  if (!exists<TicketEnvelope>(buyer_addr)) {
    move_to(buyer, TicketEnvelope{tickets: vector::empty()});
  };
  let envelop = borrow_global_mut<TicketEnvelope>(buyer_addr);
  vector::push_back(&mut envelop.tickets, ticket);
}
```

```
aptos move run --profile buyer \
--function-id seller::Tickets::purchase_ticket \
--args \
address:seller \
string:A \
u64:18
```

```
aptos move run --profile buyer \
--function-id
0xb1cd6d72f73f4b38ebe108ce6a7e47 added86c983ce34709283f19ed34ab135719::Tickets::purchase
_ticket \
--args \
address:0xb1cd6d72f73f4b38ebe108ce6a7e47 added86c983ce34709283f19ed34ab135719 \
string:A \
u64:18
```

```
yoonsoo@yoonsooui-MacBookPro ticket % aptos move run --profile buyer \
--function-id default::Tickets::purchase_ticket \
--args \
address:0xde3a76ae36e78204b043cc612ab35837cab6d0880ccafe9eeeb683bf40fa6fea \
string:A \
u64:18
```

```
Do you want to submit a transaction for a range of [126700 - 190000] Octas at a gas unit price of 100 Octas? [yes/no] >
yes
```

```
{
  "Result": {
    "transaction_hash": "0x1379ab9ffe167cab675261a02dad1910836bedf9e3943c70393d147bb961f50",
    "gas_used": 1300,
    "gas_unit_price": 100,
    "sender": "9183bbd1ba9e053604a366f19b9f64f78035f7e706bebbba2df77fc848da432ed",
    "sequence_number": 0,
    "success": true,
    "timestamp_us": 1674637728327209,
    "version": 3714069,
    "vm_status": "Executed successfully"
  }
}
```

# Account

0.99869975 APT

Balance ⓘ

0x9183bbd1ba9e053604a366f19b9f64f78035f7e706bebba2df77fc848da432ed 📄

☰ Transactions

💰 Coins

🏷️ Tokens

📁 Resources

⚙️ Modules

📄 Info

EXPAND ALL | COLLAPSE ALL

Type: 0x1::account::Account

Type: 0xde3a76ae36e78204b043cc612ab35837cab6d0880ccafe9eeeb683bf40fa6fea::Tickets::TicketEnvelope

```
{
  tickets : [
    0 : {
      identifier : {
        row : "A"
        seat_number : "18"
      }
      price : "25"
      ticket_code : "AFHND"
    }
  ]
}
```

Type: 0x1::coin::CoinStore<0x1::aptos\_coin::AptosCoin>

## 구현 예정

- 프로젝트 내부 서브 프로젝트 선택



# Tip. Move Prover 설치 잘 안될때

<https://aptos.dev/cli-tools/install-move-prover/>

가이드대로 했을때 관련 .NET SDK 디펜던시 다운로드가 너무 느려 꿀깁.

▼ Prover macOS installation

macOS

💡 TIP

These instructions have been tested on macOS Monterey (12.6)

1. Ensure you have `brew` installed <https://brew.sh/>.
2. Ensure you have `git` installed <https://git-scm.com/book/en/v2/Getting-Started-Installing-Git>.
3. Clone the Aptos core repo: `git clone https://github.com/aptos-labs/aptos-core.git`.
4. Change directory into `aptos-core`: `cd aptos-core`
5. Run the dev setup script to prepare your environment: `./scripts/dev_setup.sh -yp`
6. Source the profile file: `source ~/.profile`.

📘 INFO

Note that you have to include environment variable definitions in `~/.profile` into your shell. Depending on your setup, the `~/.profile` may be already automatically loaded for each login shell, or it may not. If not, you may need to add `~/.profile` to your `~/.bash_profile` or other shell configuration manually.

7. You can now run the Move Prover to prove an example:

```
aptos move prove --package-dir aptos-move/move-examples/hello_prover/
```

아래 링크를 사용해서 .NET SDK 다운로드 및 설치

<https://dotnet.microsoft.com/ko-kr/download/dotnet/thank-you/sdk-6.0.405-macos-arm64-installer>

`$HOME/.dotnet` 에 설치되어 있지 않다면 해당 경로로 이동.

# Reference

- <https://github.com/move-language/move/tree/main/language/documentation/tutorial>
- <https://github.com/MystenLabs/awesome-move>
- <https://cookbook.starcoin.org/docs/move/move-prover/mvp-tutorial/>
- <https://pontem.network/posts/defi-on-aptos-20-dapps-you-should-know>
- <https://imcoding.online/tutorials/how-to-publish-and-mint-nft-on-aptos>
- <https://medium.com/@ThounyBreasty/code-in-move-2-resource-account-on-aptos-d4d1971d0bd5>
- [https://medium.com/code-community-command/were-picking-up-where-we-left-off-at-the-last-episode-so-if-t  
his-is-your-first-time-here-check-394ddb8950f0](https://medium.com/code-community-command/were-picking-up-where-we-left-off-at-the-last-episode-so-if-t<br/>his-is-your-first-time-here-check-394ddb8950f0)