**SettleMint Assignment**

**NFT**

Non-Fungible Token(NFT) are used here to represent ticket for festival. Each ticket is having a unique identifier, ticket ID.

Used Ethereum token standard ERC-721 as it allows creating tokens that are unique and can have different values.

NFT can be minted only by the organizers of festival.

**FT**

Each Fungible Token(FT) represents currency token for transacting with the tickets. For fungible currency token, used Ethereum token standard ERC-20.

FT can be minted only the Exchange Admin.

**Process:**

**SettleMint Festival**

**Scenario 1- User buy ticket from organizer**

* End user can register on the SettleMint Festival website. Once registered, she can login using her email ID.
* On the home page, user can see *list of tickets owned by user* and has two options

1. Buy Ticket from organizer at fixed price
2. Buy token from Exchange Admin by specifying amount

**Scenario 2 – Organizer approve ticket**

* Organizer can login into SettleMint Festival website and track and trace all tickets (sold and remaining)
* “Approve” Ticket so that those tickets can be sold in secondary market place and he can get commission for each ticket sale.

**Scenario 3 – Organizer mint ticket**

* Organizer can login into SettleMint Festival website and track and trace all tickets (sold and remaining)
* “Mint” Ticket for creation of tickets for festival so users can buy ticket

**Scenario 3- User/Anyone buy token**

* Anyone who wants to buy token can login in the Festival portal
* “Buy Token” from Exchange Admin by specifying the amount

**Secondary Market Place**

**Scenario 1 – User Buy Ticket**

* User can login (no need to register again here) and see **list of all available tickets in secondary market**.
* She can choose ticket from the list and suggest new price for ticket and *buy the ticket.* Price of ticket cannot be greater than 110% of the current price.

**Scenario 2 – User Sell Ticket**

* User clicks on sell button, lands up on page showing tickets owned by her
* She can either sell directly to recipient, if his email ID is known

**Scenario 3 – User Approve Ticket**

* User clicks on sell button, lands up on page showing tickets owned by her
* She can approve ticket to enter them in secondary market sales and from there anyone can buy it ,same as in Scenario-1 above

Whenever ticket is being sold from secondary Market (**approved account**) to someone else, commission is given from **Secondary Market Admin to the actual owner of ticket**. Commission is not valid on ticket resale.

**Assumptions:**

1. **Fixed price for buying ticket from organizer is 1 token for 1 ticket.**
2. **The festival has been named as “SettleMint”**
3. **Initilization :**

At the time of chaincode initialization, following records are created in blockchain-

1. Organizer for SettleMint festival - org101@gmail.com
2. festival is created for SettleMint with max no of tickets as 1000
3. ExchangeOperator user - exchange101@gmail.com
4. SecondaryMarketAdmin user - secondary101@gmail.com
5. Mint 2000 tokens by Exchange Operator
6. Organizer minting 10 ticktets for festival to get started
7. **The token value stored in the blockchain is having 8 digits in total**
8. **If 1000 tickets has been minted for SettleMint festival, organizer cannot mint further**
9. Commission is assumed to be 2% of the ticket price.

**Participants in the Network**

* Organizer
* Secondary Market Admin
* Exchange Currency Operator
* Users

**CouchDB**

URL : http://localhost:7984/\_utils

Credentials for couchDB

Username : admin

Password : adminpw

**SettleMint front end** :  http://localhost:3001/

**Secondary Market front end** : <http://localhost:3001/secondaryMarket>

**Rest service**  <http://localhost:9085>  Check by hitting "http://localhost:9085/ping" in browser or by trying out requests in postman collection

**Demo of Assignment**

Attached in README.md

**All REST API’s endpoints and sample request**

Attached in the Postman Collection

**For testing chaincode**

Refer peer commands in TestChaincode.txt