Solana Marketplace contract

Objective

The key objective for this contract is to enable users through our platform to create NFTs.

Features

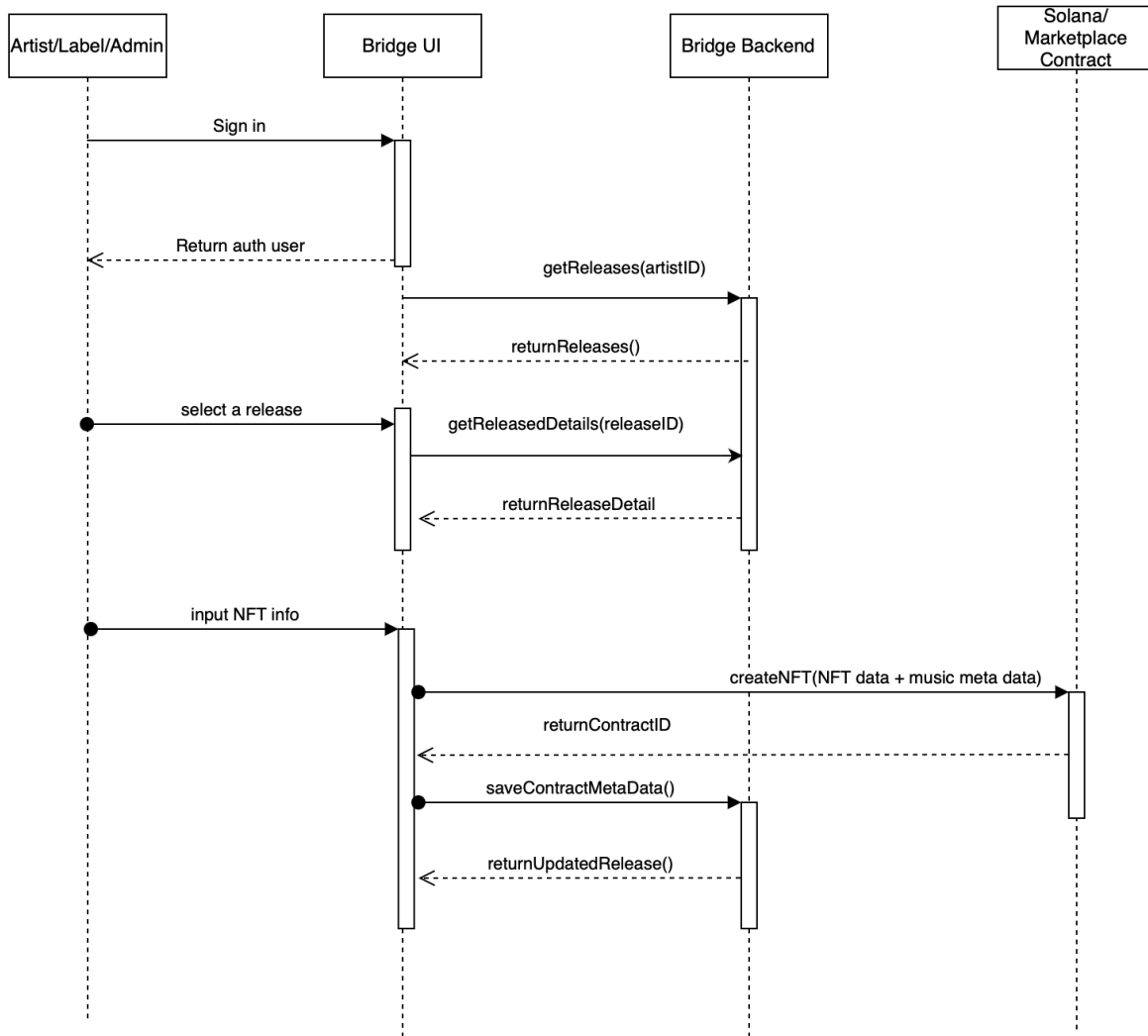Need to be able to create an NFT with the following:

- **Token Standard:** NFT must adhere to token standard stipulated by Meta Plex and have all appropriate functions/meta data. Data will be passed to the contract function

- **Primary sale:**

  - Sale window: Primary sales will have a start date/time and an end date/time

  - Sales cannot happen until the start date/time

  - Primary sales will be completed once end date/time has elapsed

  - Multiple users can get paid on primary sale

- **Editions:** Flexibility in creating NFT editions

- Fixed Editions: Editions can be fixed for each NFT (1, 10, 20 etc.. it will be up to users to determine)

- Minimum/Maximums: There can be minimums or maximums for each NFT

  - Minimums: For NFTs with minimum editions, primary sale will remain open until minimum has been achieved. Even if end date/time has been reached

  - Maximum: Once max editions is reached no more primary sales can occur even if end date has not been reached

- Open Editions: Open editions will create an unlimited amount of edition. Any number of editions can be sold as long as its within the sale window

- **Pricing:** Price will be fixed, no auctions

- **Editable:** NFTs must be editable

- **Whitelists:** pre-allocated reservation to guarantee ability to mint for a user

  - Whitelist users are limited to a specified number of editions/user. This amount should be configurable

- **Staggered minting functionality** (i.e. wave 1 of minting for team/advisors at 1pm and wave 2 for public at 3pm)

- **Music:** Need to hold music (url to music file)

  - Music can be one or more songs

  - Music should be playable in Phatom wallet

- **Music Meta data:** Need to store reference to music meta data (this can be url to an external link or hash).

- **Utilities:** Ability to add utilities to the NFT

- **Secondary sales:** Tokens can be resold

- **Contract Data:** Need to be able to query contract data

  - Total amount of Editions minted

  - Owners of each edition

- **Additional functions**

- **Compatibility:** Contract needs to include all the standard functions to be compliant with any marketplace for sale/resale

- **Contract Data:** Ability to query all contract data

- **Withdraw** Need to be able to withdraw funds from primary sale

- **Transfer:** Users can transfer their edition to another wallet as long a they are the owner of that NFT

- **Token balance**: need to be able to view the amount in the token/contract

- **Total Editions:** Total amount of editions sold

- **Owners:** Owners of each edition

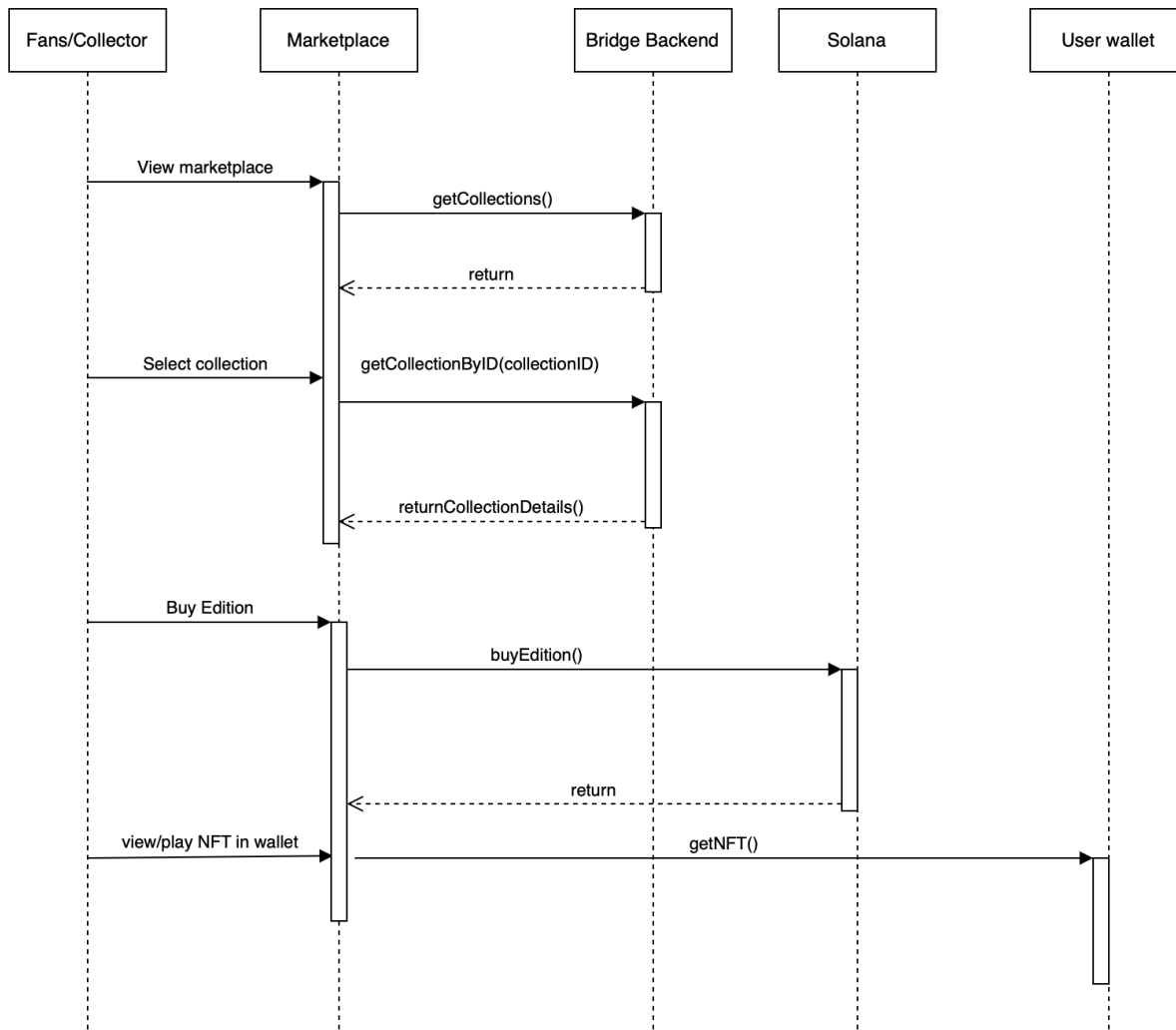- **Re-entrancy attacks:** Safeguard against reentrancy attacks

Flows

NFT Creation flow

The diagram shows a sequence diagram with participants: **Artist/Label/Admin**, **Bridge UI**, **Bridge Backend**, **Solana/ Marketplace Contract**.

- Sign in (Artist/Label/Admin → Bridge UI)
- Return auth user (Bridge UI → Artist/Label/Admin)
- getReleases(artistID) (Bridge UI → Bridge Backend)
- returnReleases() (Bridge Backend → Bridge UI)
- select a release (Artist/Label/Admin → Bridge UI)
- getReleasedDetails(releaseID) (Bridge UI → Bridge Backend)
- returnReleaseDetail (Bridge Backend → Bridge UI)
- input NFT info (Artist/Label/Admin → Bridge UI)
- createNFT(NFT data + music meta data) (Bridge UI → Solana/Marketplace Contract)
- returnContractID (Solana/Marketplace Contract → Bridge UI)
- saveContractMetaData() (Bridge UI → Bridge Backend)
- returnUpdatedRelease() (Bridge Backend → Bridge UI)

1. users are authenticated on the Bridge platform

2. Once authenticated the user's existing releases/music will be fetched from the backend

3. User will select a release/music they want to create an NFT for

4. Release will be fetched

5. User fill NFT info and submit data

   a. Collection name

   b. Description

   c. Pricing

    d. Edition type/Editions

    e. Sale period

    f. Utilities

    g. Primary sale addressees (addresses that will split primary sales) and splits

    h. Royalty/Secondary sale creators/splits

6. System will append Music meta data to the user inputted info

7. NFT will be created and and relevant data will be returned

8. NFT data will be saved to the back end

Fan purchase flow

This flow assumes wallet is connected, fan must connect wallet to purchase NFT. We are also looking at alternative ways for user to purchase NFT that may not have a wallet.

1. User will head to the marketplace

2. Collections will be pulled (either from backend or Solana contract) - **TBD**

3. User can selected a specific collection to view details

4. Collection details will be returned from backend

5. User can purchase NFTs that are eligible for sale (based on requirements above, start/end date, total supply etc.)

6. Once purchases is completed user can view/play NFT in their Wallet