klaytn

NFT Collect
Master Game
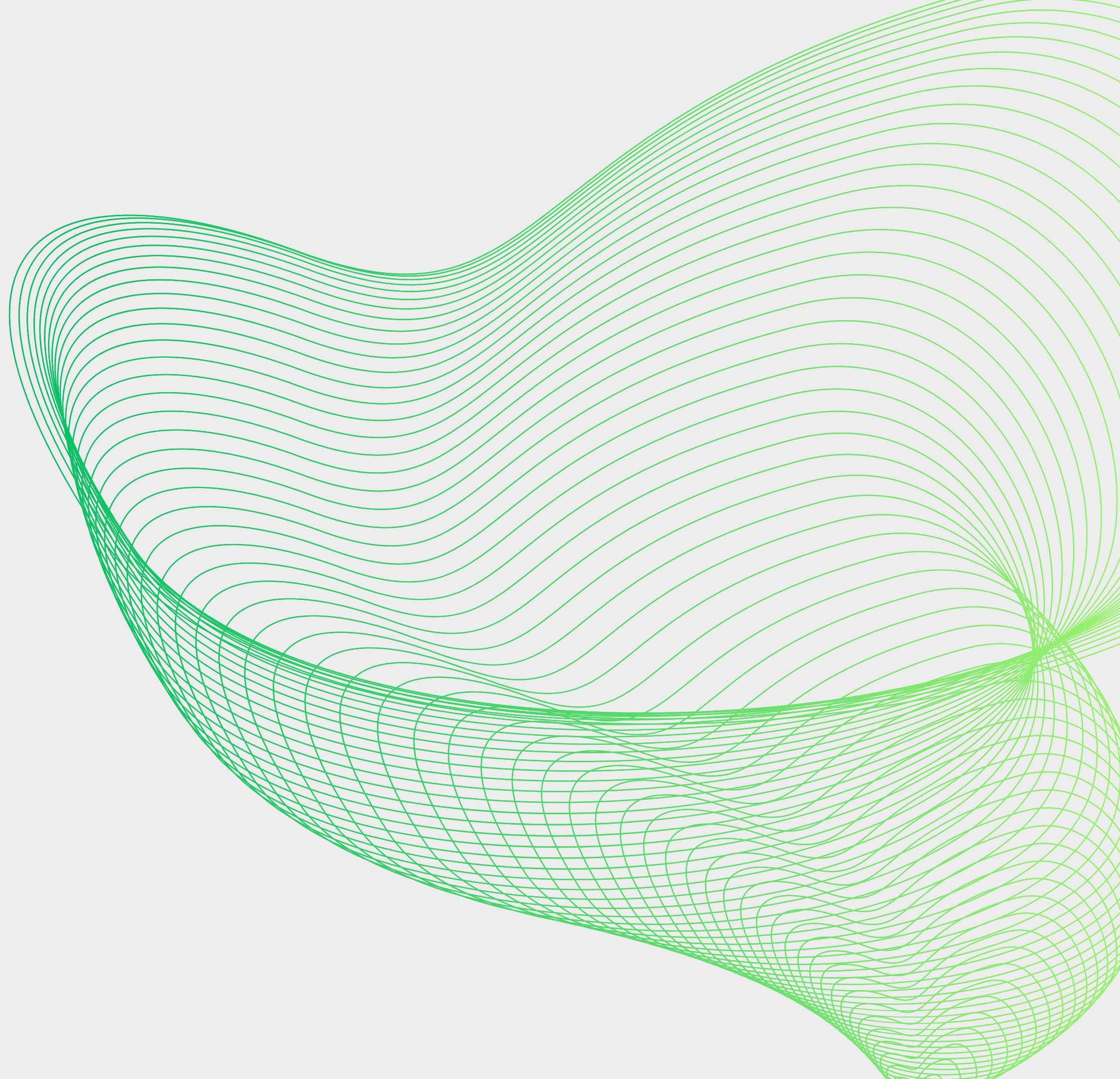
Created by

FutureV Team
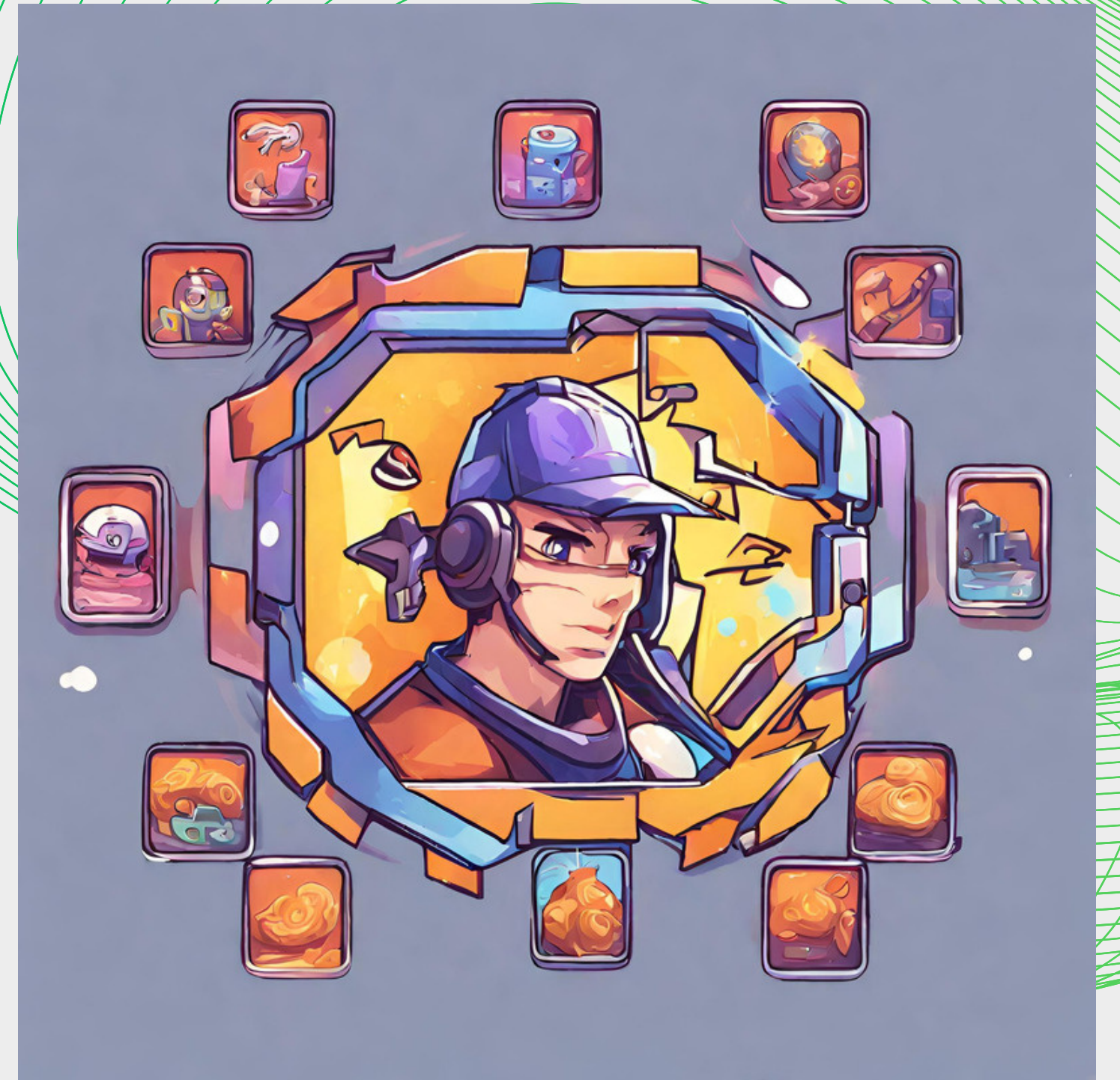
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NFT Collect Master Game

Our project is a blockchain web game developed on the Klaytn chain, emphasizing the strategic collection of unique ERC721 NFT pieces to complete a larger picture.

Actors and Features

Players

- Connect Metamask Wallet.
- View games that are ongoing for play.
- Play game by minting new NFT pieces.
- Sell or Unsell their own NFTs.
- Purchase NFTs on marketplace.
- Claim Reward if you are the winner - the first one to get all big picture pieces.

Game Creator

- Create a new game (which is a big picture).
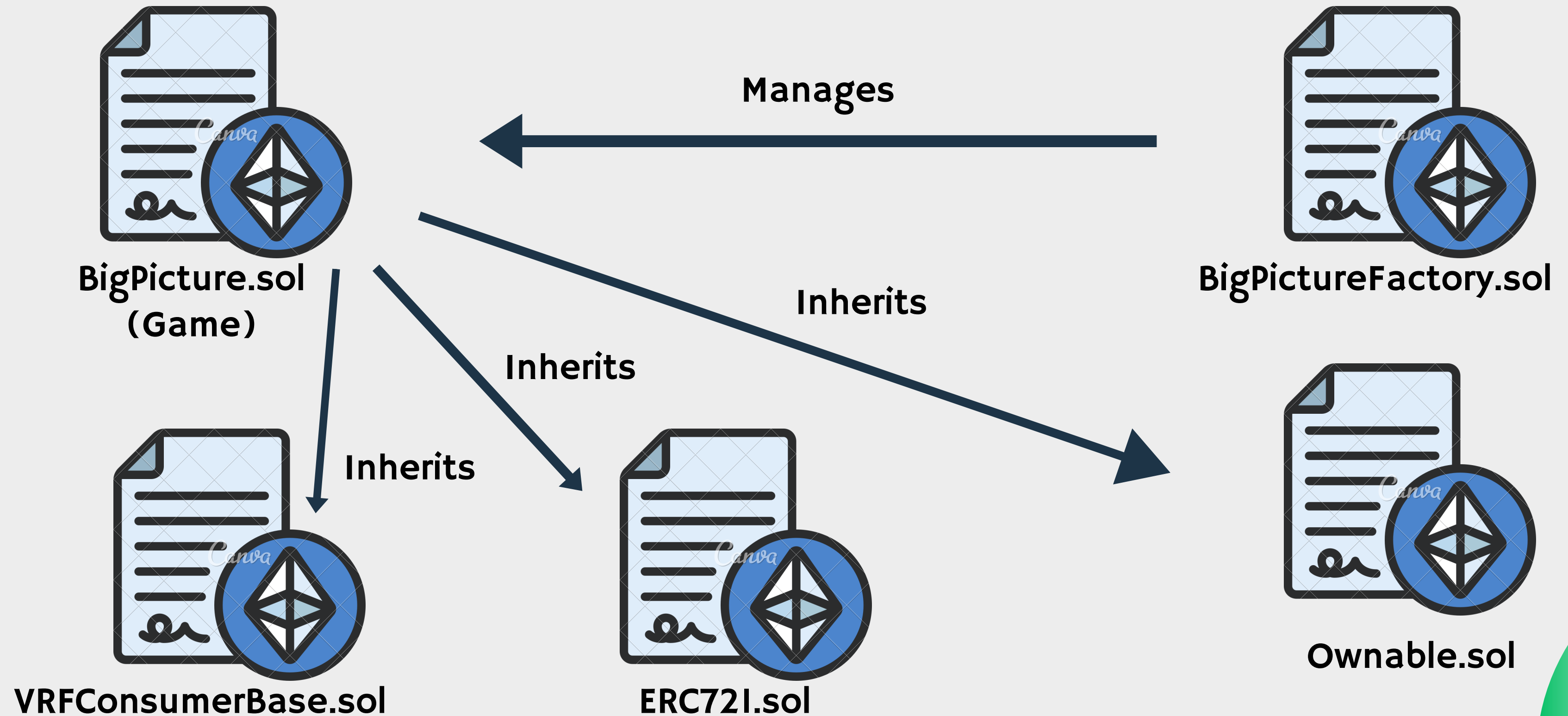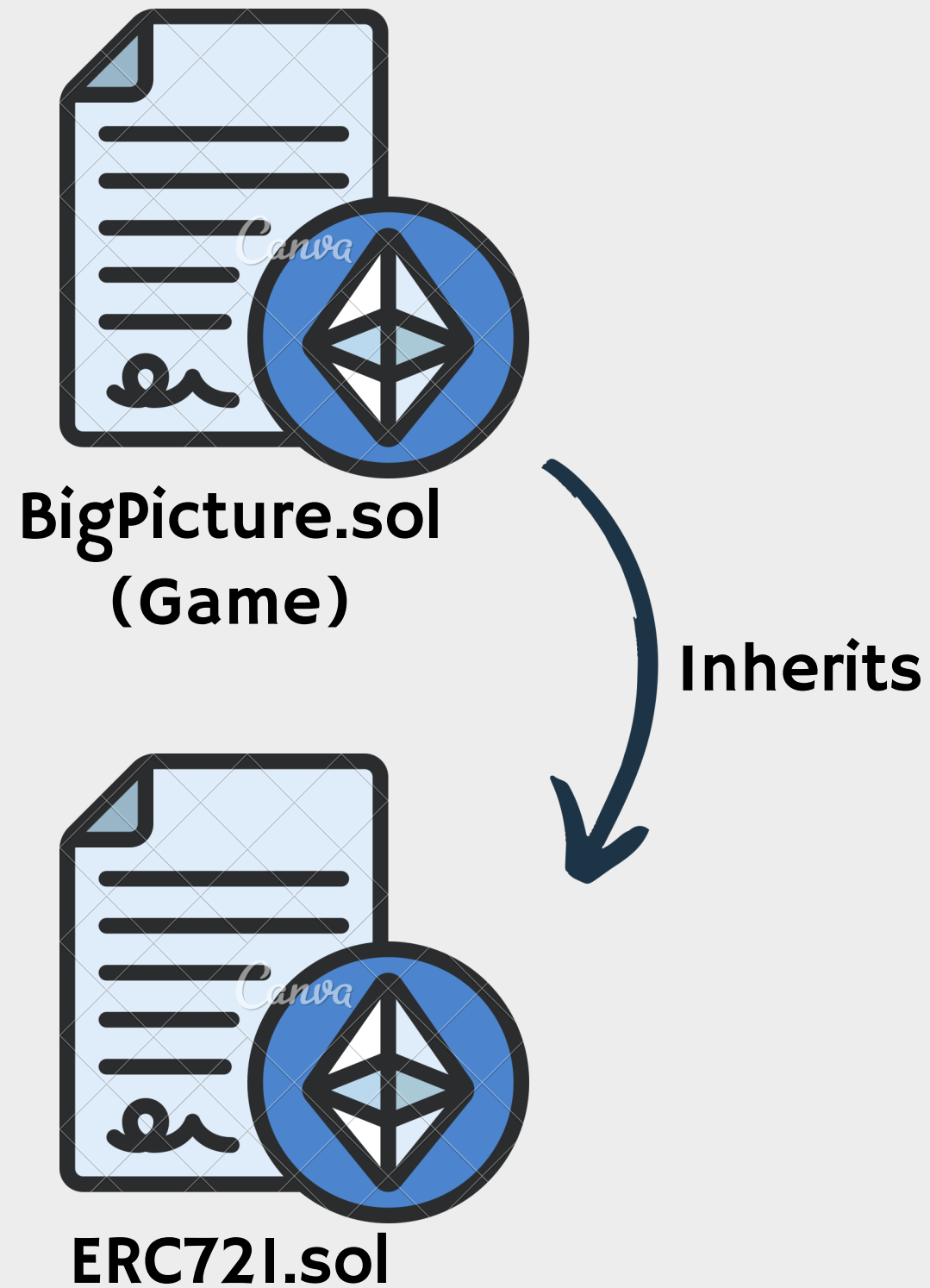- Deposit into the BigPicture contract the Reward Price.

Solidity & Smart Contracts

Smart-contracts

BigPicture.sol
(Game)

Manages

BigPictureFactory.sol

Inherits

Inherits

Inherits

VRFConsumerBase.sol

ERC721.sol

Ownable.sol

Explanation

BigPicture.sol
(Game)

Inherits

ERC721.sol

When the 'BigPicture.sol' contract inherits 'ERC721.sol', ERC721 is a standard for representing ownership of non-fungible tokens, that is, where each token is unique.

We use ERC721 to track each picture piece NFT owned by each player in our game, which will have their own unique attributes.

Whenever one player clicks "Mint", a random picture piece NFT will be minted and sent to them. Players are free to keep their token or trade it with other people.

Explanation

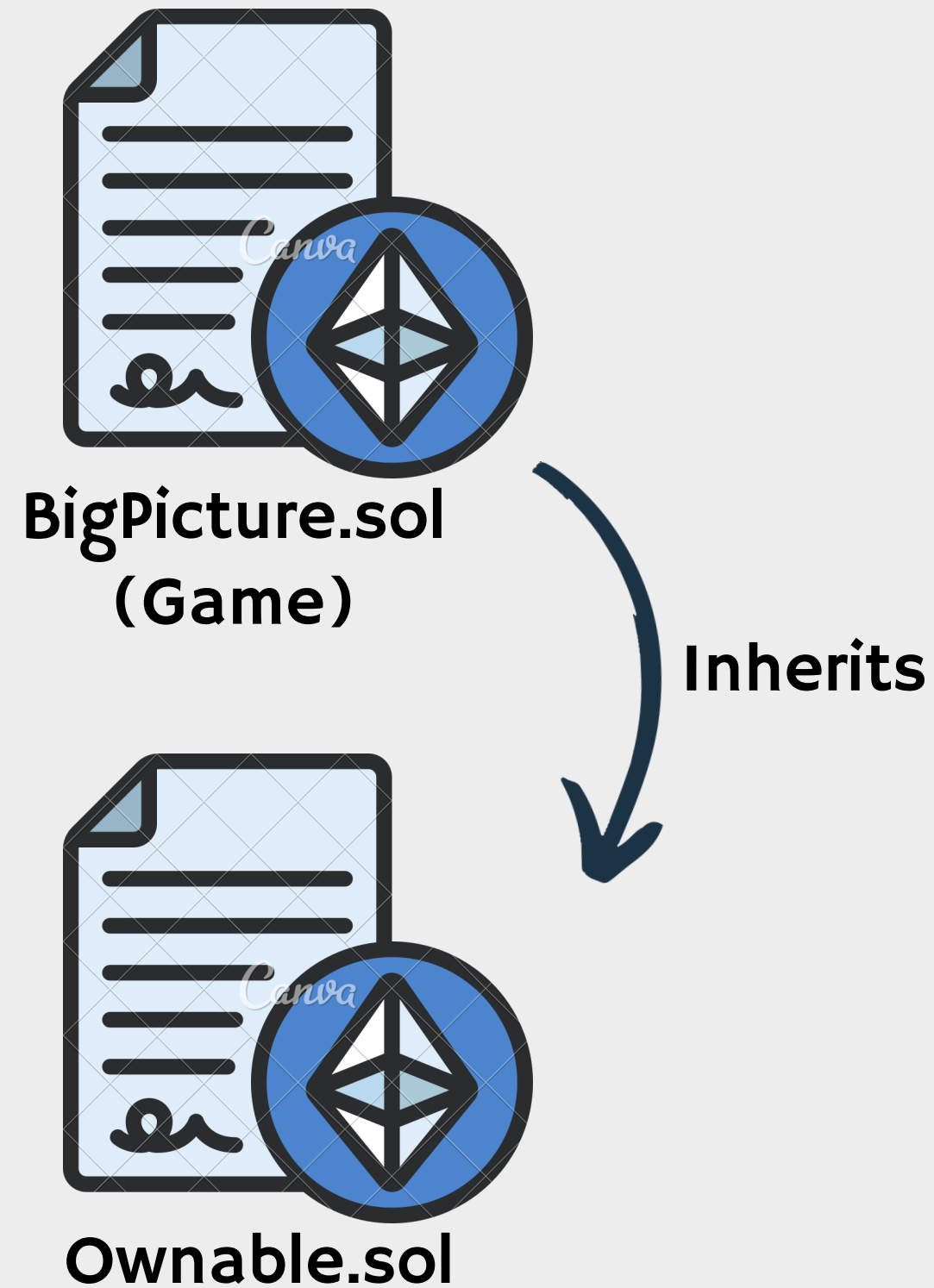BigPicture.sol
(Game)

Inherits

VRFConsumerBase.sol
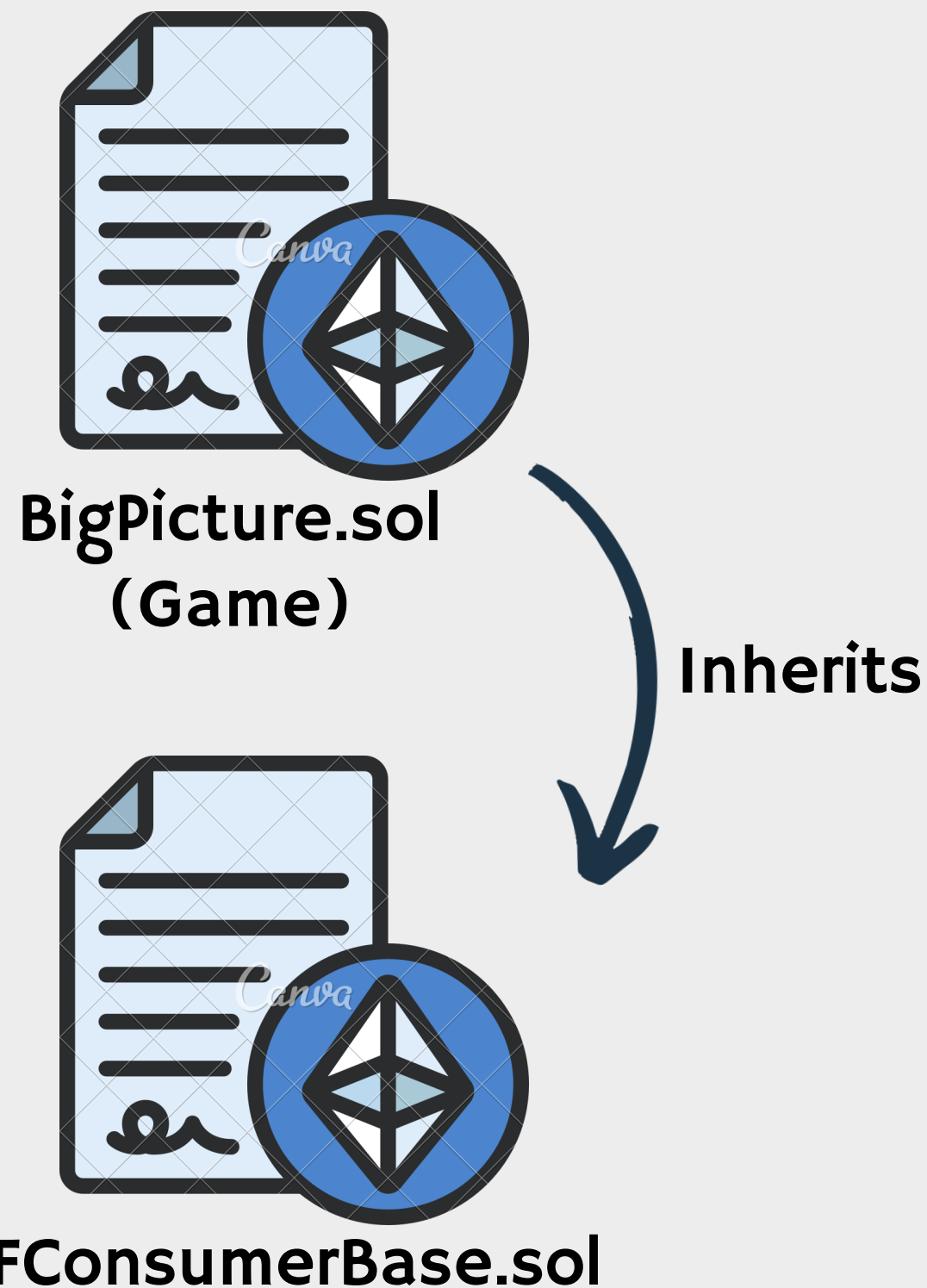
The random function for minting NFTS is provided by The Orakl Randomness Service.

The Orakl VRF (Verifiable Random Function) is a secure and reliable random number generator that allows smart contracts to access random values. It creates random numbers and verifiable proof of how they were generated. The proof is then made available on the blockchain, allowing anyone to verify that the results are fair and cannot be tampered with. This provides an added layer of security and trust for smart contract.

https://docs.orakl.network/developers-guide/vrf

Explanation

When the 'BigPicture.sol' contract inherits 'Ownable.sol', it includes a variable that stores the creator's address. This feature enables us to identify the owner of the contract.

The owner of the contract is the one receiving minting cost payed by game players. They are also the ones having to deposit into the contract the amount of KLAY equal to the reward price when they want to create new game.

BigPicture.sol (Game)

Inherits

Ownable.sol

Explanation

Manages

BigPictureFactory has ability to create a clone of BigPicture contract, and store the list of BigPicture Contract Address deployed by this one.
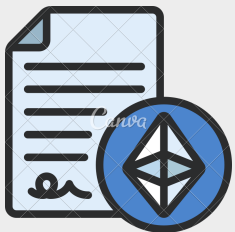
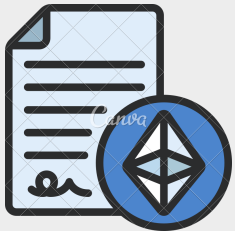**BigPicture.sol (Game)**

BigPictureFactory.sol

Coreflow
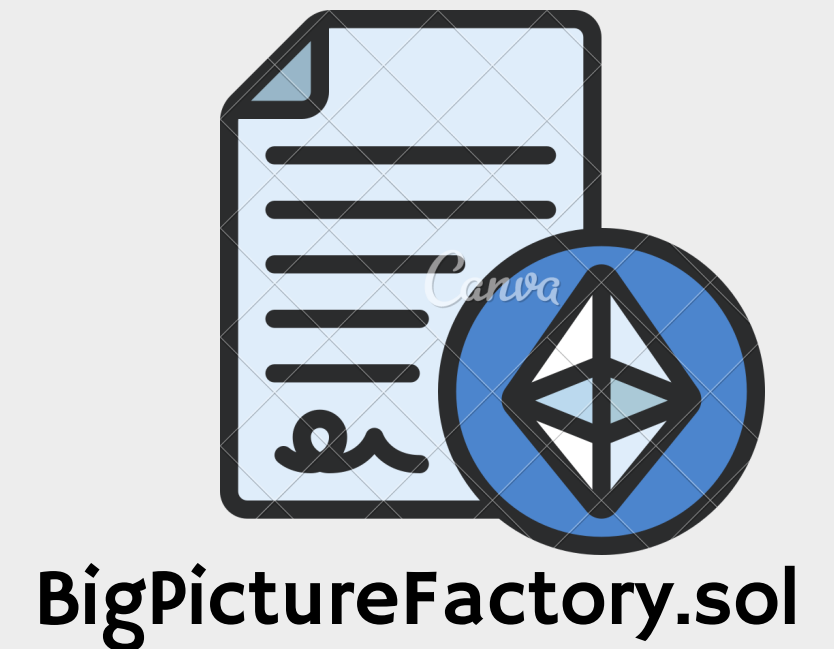
Game Creator → Call the function createBigPicture() → BigPicture Factory Contract 0x123...

Deposit an amount of KLAY into the BigPicture Contract equal to Reward Price
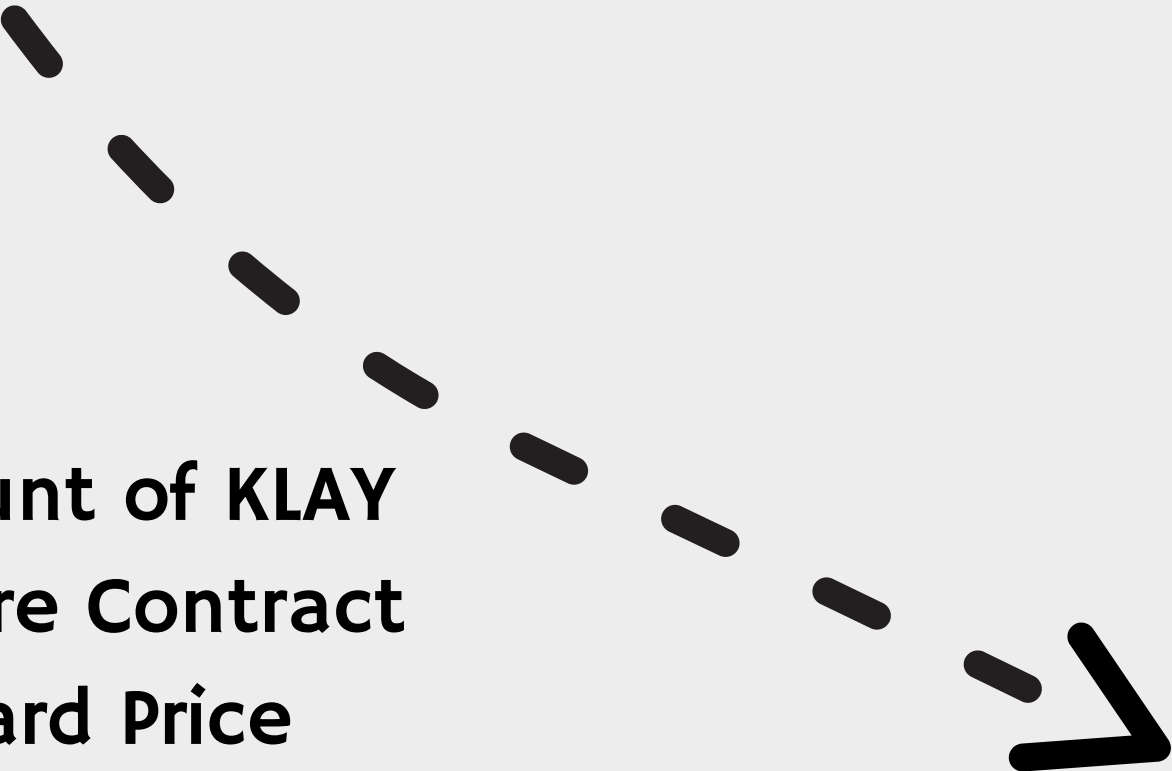
Create the BigPicture contract with predefined Reward Price and Mint Price.

BigPicture Contract 0x456... (Game)

Coreflow

Player

**Pay KLAY to call the function mint()
to mint NFT (big picture pieces)**

**BigPicture Contract
0x456...
(Game)**

**Trade their own NFTs
on marketplace**

**Transfer reward
and end the game**

Claim Reward

Player

Winning Player

Player who collects all 9 pieces
and claim first

Live Demo

https://nft-collect-master.vercel.app/games

Thank You

FutureV Team