

CRYPTO

Non Fungible Fun



Presented by: Mike Rae

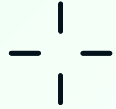
Grace Ho
Muhammad Dosani
Mikhara Ramsing

CRYPTO

What we'll cover

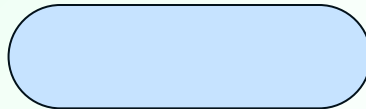
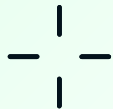
- ★ NFT Concept - NonFungible Fun
- ★ The FinTooney Journey
- ★ Intro to the team
- ★ Utilising AI to alter images and create NFT Avatars
- ★ Toonify API Integration/ Python
- ★ Creation of token (TOON) and crowdsale
- ★ Auction and bid contract - Summary
- ★ Key learnings
- ★ Questions

Non Fungible Fun - A digital avatar of the Fintech group



A digital collection of Non Fungible Collectibles of the Fintech 2021 group

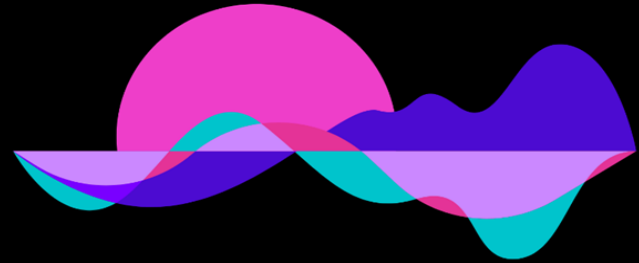
- Digital Avatar of classmate created as an NFT
- Creation of a token Fintooneys (TOONS) to facilitate the sale on the Blockchain
- Smart contracts deployed for Auction and bidding of the NFTs



WORLD'S FIRST PERSONALISED NFT MARKETPLACE

Create,
personalise and
sell your own
NFTs

On the world's first personalised NFT marketplace



Fintooney

Where NFTs become FUN

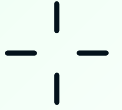


NonFungible Fun

Team Intro

OUR TEAM

Week 1 FinTech Bootcamp 🥳



**Mike
Rae**

Bright eyed
sales



**Mikhara
Ramsing**

Hopeful
Marketer



**Grace
Ho**

Optimistic
CFO



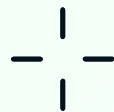
**Muhammad
Dosani**

Visionary
Evangelist



OUR TEAM

...An intense 24 weeks later



**Mike
Rae**

Pro

Developer



**Mikhara
Ramsing**

Pro

Developer



**Grace
Ho**

Pro

Developer



**Muhammad
Dosani**

Pro

Developer

The FinTooney Journey

User Journey

Load image
onto portal

Personalise
image (AI / ML
or artist)

NFT
Created

Front End
Auction Site

Purchase
TOON* with
ETH

Purchase
NFT with
TOON*

You own your
personalised
NFT!

Architecture

Web or
Python
portal

API call to Toonify
(RapidAPI /
Python code
integration)

IPFS
filestore
(via
Pinata)

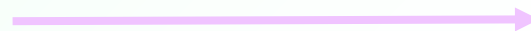
ERC721
Token

ERC20
Token

Bid &
auction
process

Ownership
transferred

Solidity - Smart Contracts & auction



TOONIFY API Integration/ Python

- API built out from RapidAPI using python (via Jupyter Notebook)
- Initial API call returned image in bytes which required additional code to convert back to JPEG format

```
# Request to send an image for toonification - note returns  
  
url = "https://toonify.p.rapidapi.com/v0/zombify" # set the  
query = {  
    "face_index": 1,  
    "return_aligned": "true",  
}  
headers = {  
    "x-rapidapi-host": "toonify.p.rapidapi.com",  
    "x-rapidapi-key": rapid_api_key,  
    "accept": "image/jpeg"  
}  
files = {"image": open("face2.jpg", "rb")} # select image to  
  
response = requests.request("POST", url, files=files, header
```



Test image #1

Test image #2

Utilising AI to alter images and create NFT Avatars

Toonify AI

Conversion of real images to selected toonify avatars



Created with
toonify.photos

IPFS Storage

Decentralised storage via pinata to allow for URI connection in contracts and code

Image URI	CID
https://gateway.pinata.cloud/ipfs/QmSH5h9dE7yFwJcoMQPsTbCvYDe8PUavfKobG8G4U2oyPJ	QmSH5h9dE7yFwJcoMQPsTbCvYDe8PUavfKobG8G4U2oyPJ
https://gateway.pinata.cloud/ipfs/QmcnuRrCCiJs2PdV49mzFRekkYqKQzSEb7wmuyennAb	QmcnuRrCCiJs2PdV49mzFRekkYqKQzSEb7wmuyennAb
https://gateway.pinata.cloud/ipfs/QmTuqz87n5LuLDMdxuBWAgtetkyZT5XyufyupXGt6FR8sN	QmTuqz87n5LuLDMdxuBWAgtetkyZT5XyufyupXGt6FR8sN
https://gateway.pinata.cloud/ipfs/QmV8qz87bvABMVLsqKfprF1LUrNUU5KTNO1E5DTyKSiuc	QmV8qz87bvABMVLsqKfprF1LUrNUU5KTNO1E5DTyKSiuc
https://gateway.pinata.cloud/ipfs/QmdJtMaoPGpdBZcKXEnZLRKCCGYNwBVj5q7GtK7VXKQZ77H	QmdJtMaoPGpdBZcKXEnZLRKCCGYNwBVj5q7GtK7VXKQZ77H
https://gateway.pinata.cloud/ipfs/QmPTJkSmQGfap5kr4y52zS7rFrUu29MKGsajtochobAKw	QmPTJkSmQGfap5kr4y52zS7rFrUu29MKGsajtochobAKw
https://gateway.pinata.cloud/ipfs/QmXj8sdbZxMwn2vmFgjExatJhFTRPFsb122JHf1RbhKRS	QmXj8sdbZxMwn2vmFgjExatJhFTRPFsb122JHf1RbhKRS
https://gateway.pinata.cloud/ipfs/QmQ2hmHzpfH1HRSi1RTXYIGPSeWxsseMayMcg8LtuCRMry	QmQ2hmHzpfH1HRSi1RTXYIGPSeWxsseMayMcg8LtuCRMry
https://gateway.pinata.cloud/ipfs/Qmcrrcf9kBRkh9Z212KHSczo3wFj8f3WJfMKw2vdavd	Qmcrrcf9kBRkh9Z212KHSczo3wFj8f3WJfMKw2vdavd
https://gateway.pinata.cloud/ipfs/QmVEHdxwzcsH3bqKcYDLJUvBvbnkjFtC5WjELZM1uo9X5Z	QmVEHdxwzcsH3bqKcYDLJUvBvbnkjFtC5WjELZM1uo9X5Z
https://gateway.pinata.cloud/ipfs/Qmb7zi4vDn6QDT6YsD8DJ9yZGAMcF6iazV7h2ZVuxwki2	Qmb7zi4vDn6QDT6YsD8DJ9yZGAMcF6iazV7h2ZVuxwki2
https://gateway.pinata.cloud/ipfs/Qmf984q8w9HVhyTgi9LiDmbiuWSeeanP7UUEJex8uvfhP	Qmf984q8w9HVhyTgi9LiDmbiuWSeeanP7UUEJex8uvfhP
https://gateway.pinata.cloud/ipfs/QmdrwWJNfU7JBuAdkwAe423GhNffgCk7xLa8B49VP42YFd	QmdrwWJNfU7JBuAdkwAe423GhNffgCk7xLa8B49VP42YFd
https://gateway.pinata.cloud/ipfs/QmXFXHiCvtGmcnvwz87SRK6z7cFLcpnVJVEbqGK3nXKccfh	QmXFXHiCvtGmcnvwz87SRK6z7cFLcpnVJVEbqGK3nXKccfh
https://gateway.pinata.cloud/ipfs/QmdtUJAWu6avraFMBRhw7QzwstSFQUzTy6yNPeBs3G3od	QmdtUJAWu6avraFMBRhw7QzwstSFQUzTy6yNPeBs3G3od

Utilising AI to alter images and create NFT Avatars



Halloweenified CLAUDIA DONG

Current price

1.1 (\$3,906.94)

Buy now

Make offer

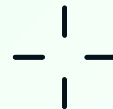
Price History

All Time



Description

Creation of token and crowdsale

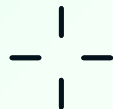


Token contract

- Type: ERC20 token
- Name: FintoonyCoin
- Symbol: TOON

Crowd sale contract and deployment

- Testing via;
 - Javascript VM (local)
 - Injected Web3
 - Ganache
 - Rinkeby Testnet



```
import "https://github.com/OpenZeppelin/openzeppelin-contracts/contracts/token/ERC20/ERC20.sol"
import "https://github.com/OpenZeppelin/openzeppelin-contracts/contracts/token/ERC20/ERC20.sol"

// Inherit contracts above
contract FintoonyCoinSale is Crowdsale, MintedCrowdsale {

    constructor(
        uint rate, address payable wallet, FintoonyCoin token
    ) Crowdsale(rate, wallet, token)
        // MintedCrowdsale () // does not need constructor
        CappedCrowdsale (goal)
        TimedCrowdsale (openingTime, closingTime)
        RefundableCrowdsale (goal) {

        public

        {
            // constructor can stay empty
        }
    }

    contract FintoonyCoinSaleDeployer {

        address public token_sale_address;
        address public token_address;

        constructor(
            string memory name,
            string memory symbol,
            address payable wallet, // this address will be the wallet
            uint goal,
            uint openingTime,
            uint closingTime,
            uint rate) {
            token_sale_address = wallet;
            token_address = wallet;
        }
    }
}
```

Solidity contract code example



Auction and bid contract

```
contract ToonFinMarket is ERC721Full, Ownable {

    constructor() ERC721Full("FintooneyMarket", "TOON") public {}

    using Counters for Counters.Counter;

    Counters.Counter token_ids;

    address payable foundation_address = msg.sender;

    mapping(uint => FintooneyAuction) public auctions;

    modifier toonRegistered(uint token_id) {
        require(!_exists(token_id), "NFT not registered!");
        _;
    }

    contract FintooneyAuction is FintooneyCoin, SpenderRole, ERC20Spendable {
        address deployer;
        address payable public beneficiary;

        // Current state of the auction.
        address public highestBidder;
        uint public highestBid;

        // Allowed withdrawals of previous bids
        mapping(address => uint) pendingReturns;

        FintooneyCoin public acceptedToken;
    }
}
```

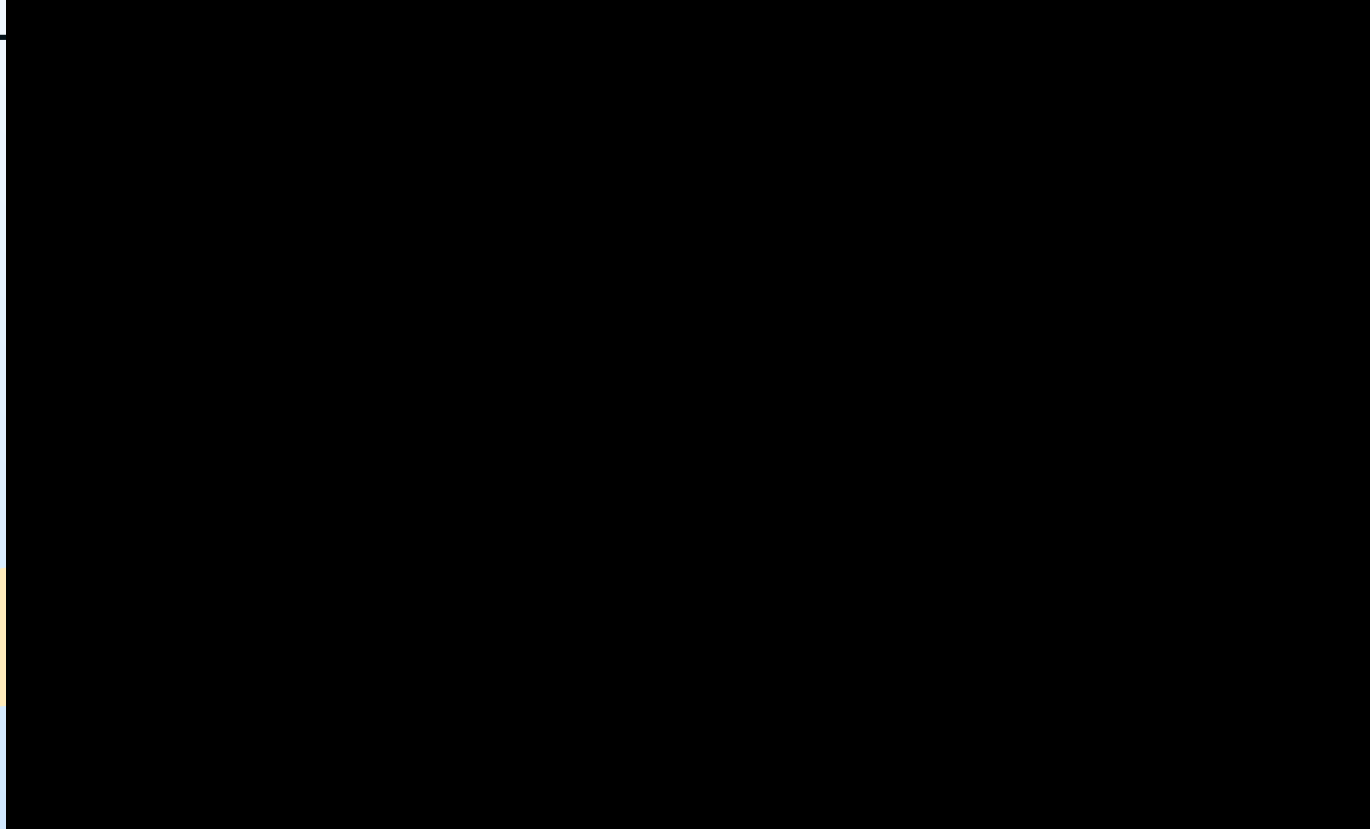
Fintooney Auction Contract

- Intended to set TOON as currency for auction but more complex than envisioned
- Set up rules for Auction: bid, bid time, highest bidder, withdraw bid, auction end

Fintooney Market Contract

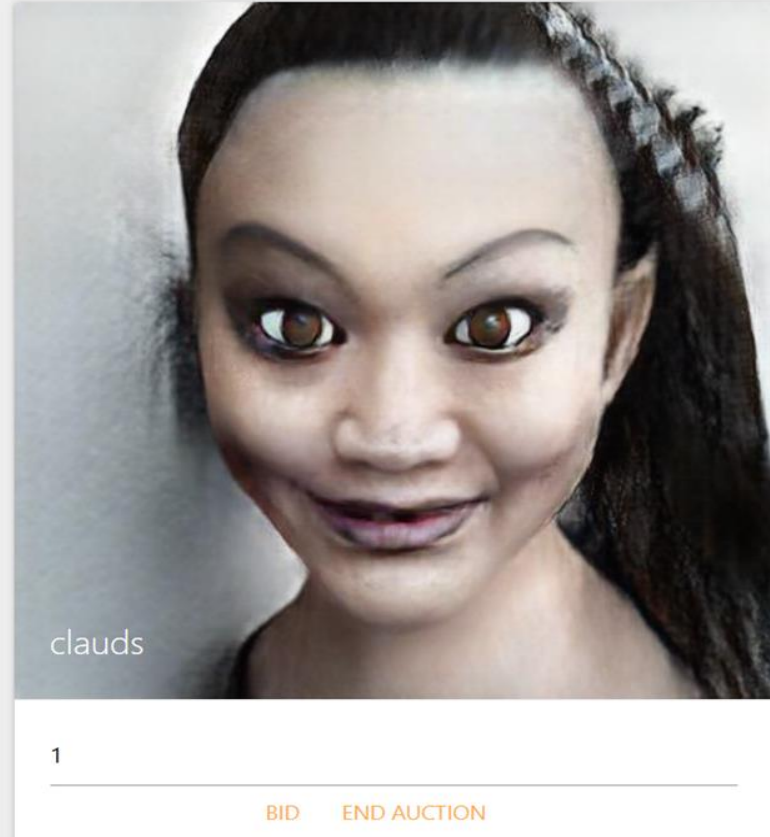
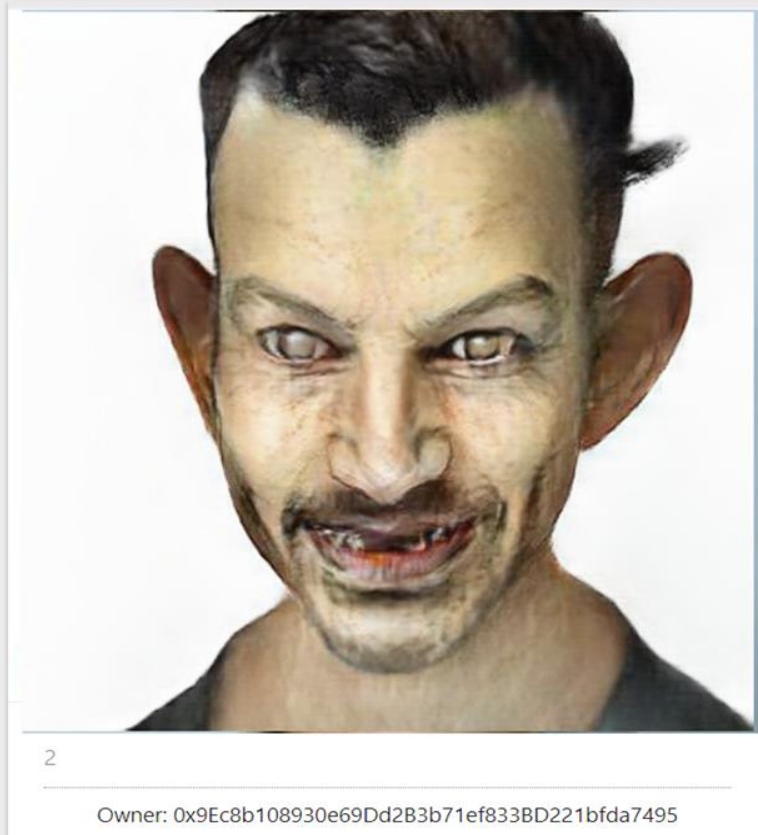
- Intention: use ERC20 to buy ERC721
- Intention: Called for msg balance of TOON
- Auction held for each NFT

Proof of concept

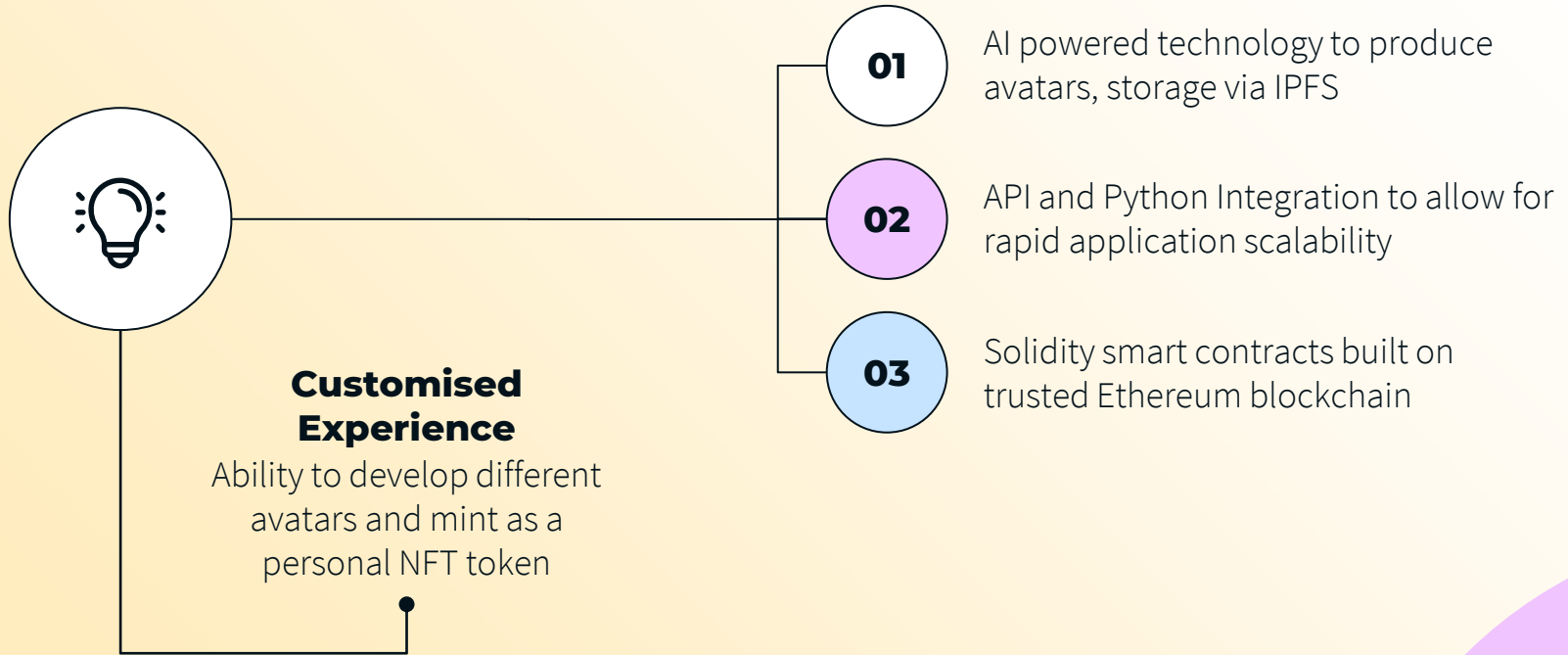


Fintooney Markets

Welcome to the Fintooney NFT Market. This is a platform where you can purchase your avatar NFTs.



Summary

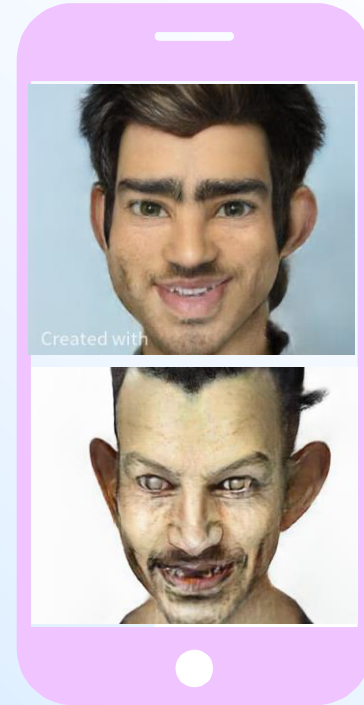


Key learnings

- Connecting multiple contracts in solidity and understanding the code as well as avoiding duplication
- API Integration, conversion of image in bytes to jpeg
- Front end development issues
- NFT's generally sold using ETH by default, additional complexity to require purchase with token (FintooneyCoin)

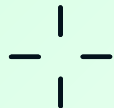
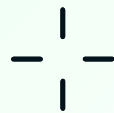
NEXT STEPS

- Build Fintooney - a love child between Etsy and Open Sea - A customisable NFT platform

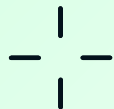
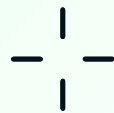


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Do you recognise these faces?



How about these guys?





Questions?