

TECHNICAL REPORT



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INTRODUCTION

Introduction

We were given **3 datasets** which include:

- Assets.csv
- Collections.csv
- events.csv

With the **main goal** to analyze NFT statistics and transactions, then provide insights for investors, sellers, and buyers about NFT.

All datasets were extracted from OpenSea NFT database. We will answer a few meaningful questions such as:

- What is the best duration length for NFT listing time?
 - What cryptocurrency mostly used in NFT transaction?
 - How popularity, no. of sales and author's extra royalties affect an NFT price?
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METHODOLOGY

Methodology

Understanding the dataset

Assets.csv - contains statistics of an NFT in the OpenSea platform

Collections.csv - contains statistics of an NFT collection in the OpenSea platform

events.csv - contains transactional events has occurred in the OpenSea platform

Some datasets have **null values** which not necessarily need to be dropped because they indicate a different row data type.

We analyze the data based on the idea that an NFT's worth can be valued through **how popular it** is and how frequent it **exchanged ownerships** (NFT is like an art)

<https://docs.opensea.io/reference/api-overview>

Methodology

Data preparation processes

For all the datasets, we selected NFTs and collections that are **present in all datasets** to avoid missing data later on in analysis.

We removed a few columns in both Assets and Collections dataset such as some *asset contract details, descriptions, urls*, etc. because it is **not needed** for our analysis.

<https://docs.opensea.io/reference/api-overview>

Methodology

Data preparation processes

A few columns' data types need to be transformed such as **text to datetime**, **text to numerical**, and **text to category**.

We removed a few rows with null values in Assets dataset due to some were **never transacted** by anyone.

Finally, we removed outliers in the Assets dataset using **Z-score statistic**, since there is a very large value present in some columns.

<https://docs.opensea.io/reference/api-overview>

Methodology

Exploratory Data Analysis

For the EDA process, we will be analyzing as follows:

- Top 10 **most transacted** NFT (overall, based on asset category, collection slug, year created)
 - Comparing **asset category** statistics
 - Comparing **collections** dataset
 - Finding out the **best listing duration** for an NFT auction
 - How NFT owner's **royalty rate**, NFT **popularity** and number of **sales** related to its price
 - **Cryptocurrencies** that are mostly used in OpenSea transaction
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Methodology

Dashboard Making



We will be using Plotly's **Dash** framework to create the dashboard with python programming language, and use **Tailwind** framework to for layouting the website of the dashboard.

RESULTS

Results

Top 10 NFT transactions overall

Top 10 NFT Transactions

Top 10 NFT

Collection Slug	Name	Category	Created Year	Sales
bloodshedbearsgenesismetapass	BloodShed Bears Genesis MetaPass	collectibles	2022	506
town-star	Haunted West Wing	virtual-worlds	2020	496
opendao-genesis-membership	OpenDAO Genesis Membership Tier 2	collectibles	2022	489
town-star	Simplex Sugarcanes	virtual-worlds	2020	474
parallelalpha	Jury-Rigged Juggernaut	trading-cards	2021	472
parallelalpha	Life Stream [SE]	trading-cards	2021	461
illuvium	Dawnlight Badge - Silver	collectibles	2021	461
photo-all-access-pass	Access Pass	photography	2022	456
parallelalpha	Doctor's Assistant [SE]	trading-cards	2021	455
parallelalpha	Magna, Tempest's Will	trading-cards	2021	451

We analyzed and found **top 10 NFTs** based on overall transactions, category, collection slug, and the year it was created.

We also analyzed **each NFT categories** based on their performances

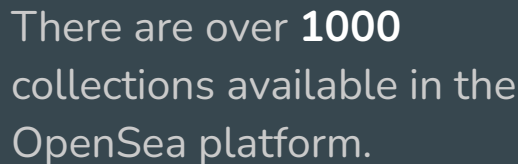
Comparing NFT statistics by category

NFT Asset Category Comparison

Last Sale Total Price



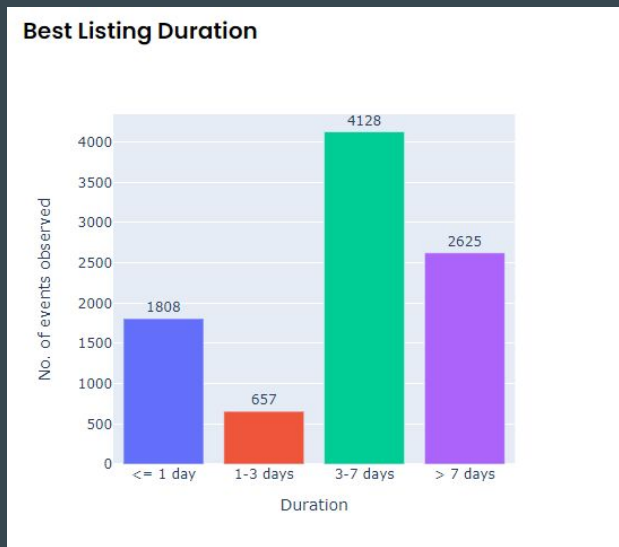
NFT Collections Comparison



Here, we compare and displayed just the **top 100** collections based on the statistics selected.

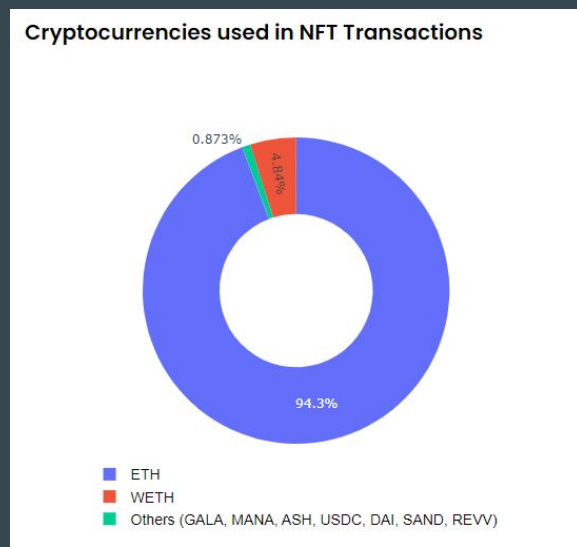
Results

Best listing duration for an NFT auction



When creators want to **sell** an NFT through **auction** system, they should set the listing duration between **3-7 days**, as we observed *more activities* between that timeframe

Cryptocurrencies used in NFT transactions



Most transactions in the OpenSea platform uses **Ethereum (ETH & WETH)** cryptocurrencies. Practically because OpenSea initially use ETH as their **standard** currency.

Results

How fee basis points (owner's royalty), popularity, and no. of sales affect the NFT price

How Fee Basis Points, Popularity, and Number of Sales affect an NFT price



According to several sources, there are some factors that influence the price of an NFT. Essentially it works like an art, the **more popular** & people want it, **the rarer** the item is, making it **more expensive**.

Here, in addition to the **popularity** (measured by asset favorited by users) and **no. of sales**, we also take a closer look on how **fee basis points** (original owner's royalty rate) affect the NFT price.

DASHBOARD

<https://nft-transaction-dashboard.herokuapp.com>

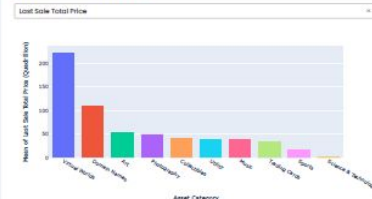
NFT Transactions Dashboard

By Teom Kalkan

Top 10 NFT Transactions

Collection Slug	Name	Category	Created Year	Sales
moonbirdsbygonewildmetarose	moonbirds by gonewildmetarose	collectibles	2022	506
town-star	Mounted Wolf Wing	virtual-worlds	2020	486
operation-gemesis-membership	Operation Gemesis Membership Tier 2	collectibles	2022	469
town-star	Simple Supreme	virtual-worlds	2020	474
parallelpunks	Jury-Rigged Juggernaut	trading-cards	2021	472
parallelpunks	Life Stream [Set]	trading-cards	2021	461
Bakum	Starlight Bridge - Silver	collectibles	2021	461
ghst-art-crossover-pass	Access Pass	photography	2022	465
parallelpunks	Doctor's Assistant [Set]	trading-cards	2021	465
parallelpunks	Magna Tempets Will	trading-cards	2021	461

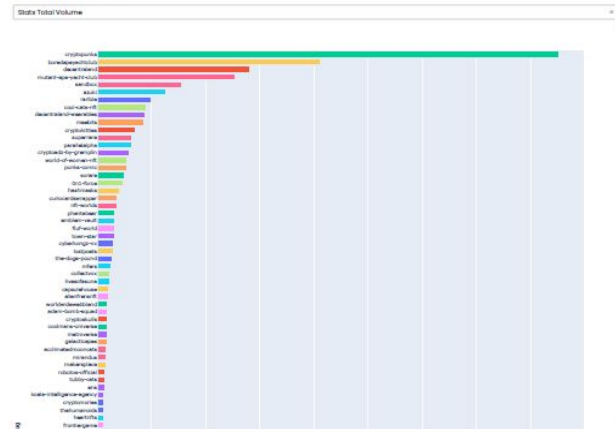
NFT Asset Category Comparison



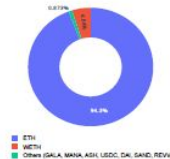
Best Listing Duration



Collection Comparison



Cryptocurrencies used in NFT Transactions



How Fee Basis Points, Popularity, and Number of Sales affect an NFT price



THANK YOU