Visualization of first NFT dataset

March 17, 2022

```
[1]: import pandas as pd
     import numpy as np
     import matplotlib.pyplot as plt
     import seaborn as sns

     import warnings
     warnings.filterwarnings('ignore')
```

```
[2]: nft = pd.read_csv('nft.csv')
```

```
[3]: nft.head()
```

```
[3]:            BLOCK_TIMESTAMP                     COLLECTION              TOKEN_NAME  \
     0  2022-01-28 20:20:47.000  Chromie Squiggle by Snowfro   Chromie Squiggle #4
     1  2022-01-28 20:16:06.000  Chromie Squiggle by Snowfro   Chromie Squiggle #5
     2  2021-09-26 23:58:07.000  Chromie Squiggle by Snowfro  Chromie Squiggle #13
     3  2021-10-24 00:09:14.000  Chromie Squiggle by Snowfro  Chromie Squiggle #17
     4  2021-10-07 05:40:07.000  Chromie Squiggle by Snowfro  Chromie Squiggle #19

            PRICE_USD  TOKEN_ID  SALE_SEQ  IS_RESOLD
     0    55133.052016         4         1          0
     1    55133.052016         5         1          0
     2    55180.961396        13         1          0
     3   124890.971439        17         1          0
     4    74136.787632        19         1          0
```

```
[4]: # Checking if dataframe contains nan values
     nft.isnull().values.any()
```

```
[4]: False
```

```
[5]: corr = nft.corr()
     corr
```

```
[5]:             PRICE_USD  TOKEN_ID  SALE_SEQ  IS_RESOLD
     PRICE_USD    1.000000 -0.180497 -0.012583  -0.020325
     TOKEN_ID    -0.180497  1.000000  0.132109   0.159562
```

```
SALE_SEQ   -0.012583   0.132109   1.000000     0.823640
IS_RESOLD  -0.020325   0.159562   0.823640     1.000000
```

[6]:
```python
corr.style.background_gradient(cmap = 'coolwarm')
```

[6]: `<pandas.io.formats.style.Styler at 0x7f24c8520a30>`

[7]:
```python
# Percentage of NFTs that have been resold
print(np.sum(nft['IS_RESOLD']) / len(nft))

# True percentage resold
print(np.sum(nft['IS_RESOLD']) / len(nft['TOKEN_NAME'].unique()))
```
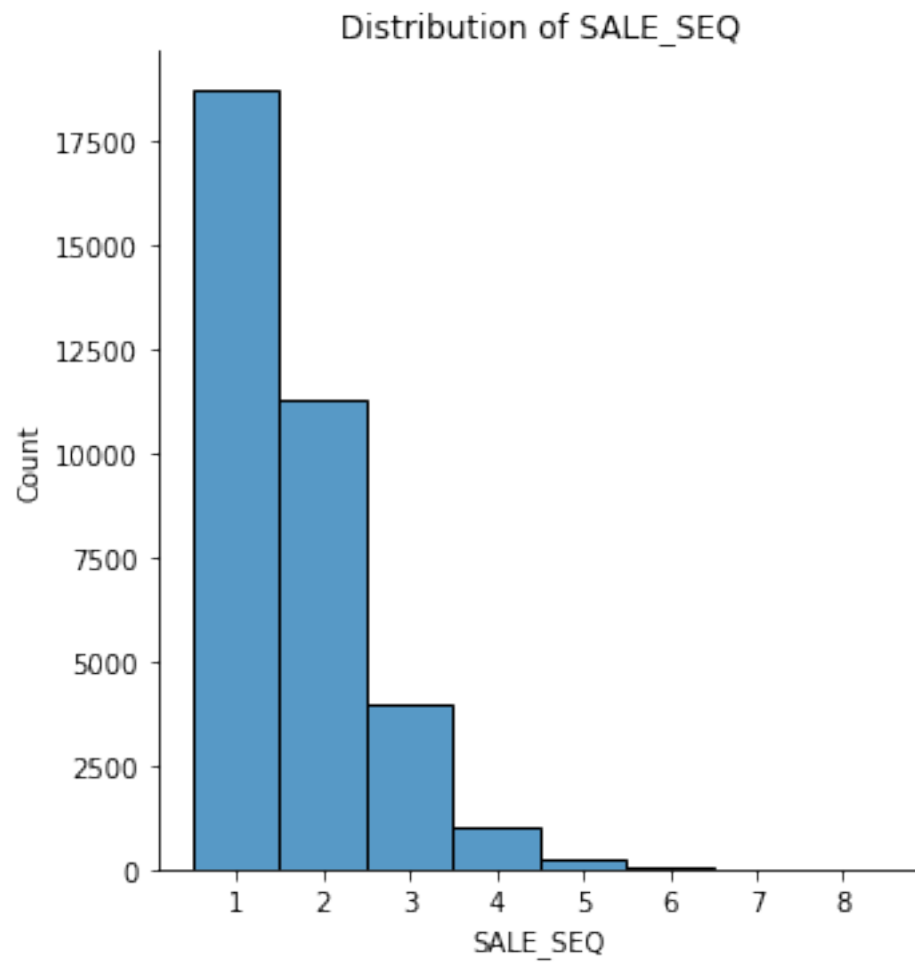
```
0.4696454864650583
0.8855312333155366
```

[8]:
```python
# df grouped by collection with count statistic
nft_collections = nft.groupby('COLLECTION').size().reset_index(name = 'counts')
len(nft_collections)
```

[8]: `52`

[9]:
```python
sns.displot(nft, x = 'SALE_SEQ', discrete=True).set(title = 'Distribution of␣
 ↪SALE_SEQ');
```

Distribution of SALE_SEQ


```
[10]: large_sale_seq = nft[nft['SALE_SEQ'] > 4]
      sns.displot(large_sale_seq, x = 'SALE_SEQ', discrete=True).set(title =␣
       ↪'Distribution of SALE_SEQ for larger values');
```

Distribution of SALE_SEQ for larger values
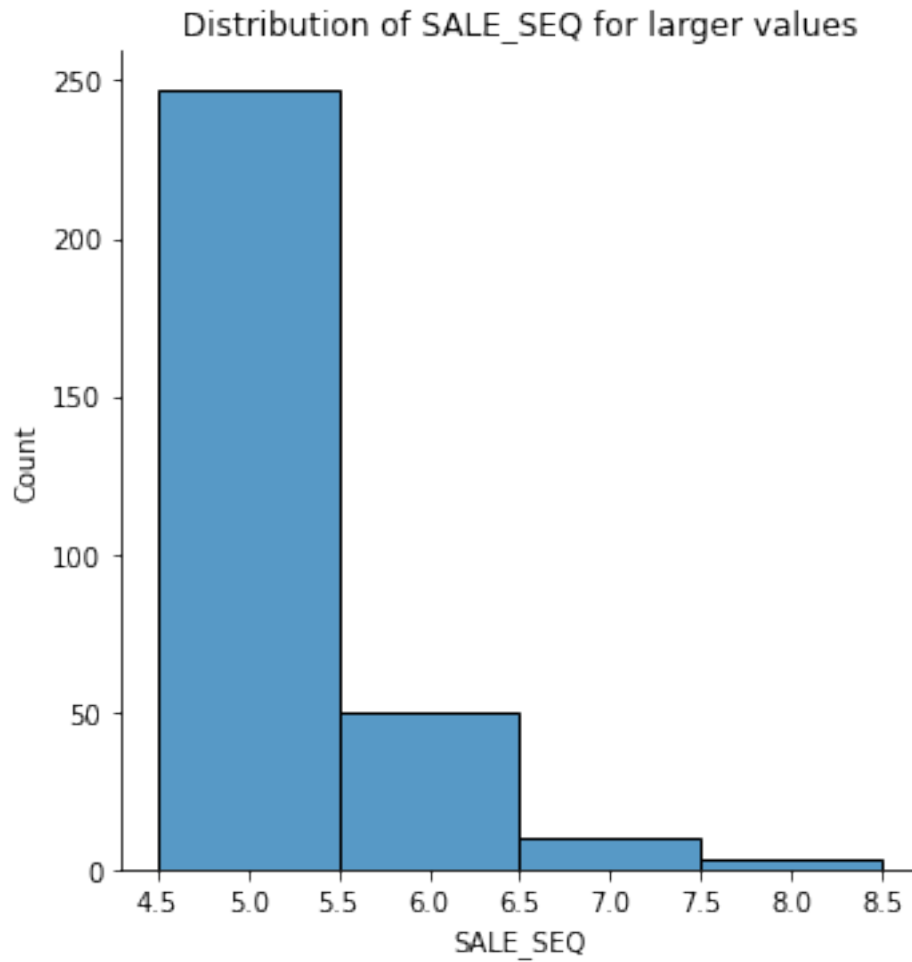
[11]:
```python
# Checking if I could get all artists' name
print(sum(nft['COLLECTION'].str.contains('by')), len(nft))
```

35316 35316

[12]:
```python
# Used regex to get artists' name
artists = nft['COLLECTION'].str.replace('[\t\n\r\w\d\s-]+by ', '', regex = True)
print(len(artists))
print(artists.unique())
```

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['Snowfro' 'DCA' 'Jeff Davis' 'Daïm Aggott-Hönsch' 'pxlq' 'luxpris'
 'Hideki Tsukamoto' 'ge1doot' 'Bryan Brinkman' 'Beervangeer' 'Zeblocks'
 'Dmitri Cherniak' 'Simon De Mai' 'kai' 'Kjetil Golid' 'Alexis André'
 'Aaron Penne' 'Radix' 'daLenz' 'Chaosconstruct' 'Stina Jones'
 'Michael Connolly' 'Matt DesLauriers' 'NumbersInMotion' 'Jason Ting'
 'Han x Nicolas Daniel' 'Stefano Contiero' 'Shvembldr' 'Tyler Hobbs'

```
 'Joshua Bagley' 'Casey REAS' 'Alida Sun' 'Rafaël Rozendaal'
 'Darien Brito' 'William Tan' 'Rich Lord' 'Loren Bednar' 'Anna Carreras'
 'Monica Rizzolli' 'Piter Pasma' 'Ben Kovach'
 'Emily Edelman - Dima Ofman - Andrew Badr' 'steganon' 'ippsketch'
 'Matt Kane' 'Jen Stark' 'Samsy' 'mpkoz' 'Leo Villareal'
 'Thomas Lin Pedersen' 'Matty Mariansky' 'Marcelo Soria-Rodríguez']
```

```
[13]: # Added 'ARTIST' column, containing names of artists, to the nft df
      nft['ARTIST'] = artists
      nft.head()
```

```
[13]:              BLOCK_TIMESTAMP                   COLLECTION              TOKEN_NAME  \
      0  2022-01-28 20:20:47.000  Chromie Squiggle by Snowfro   Chromie Squiggle #4
      1  2022-01-28 20:16:06.000  Chromie Squiggle by Snowfro   Chromie Squiggle #5
      2  2021-09-26 23:58:07.000  Chromie Squiggle by Snowfro  Chromie Squiggle #13
      3  2021-10-24 00:09:14.000  Chromie Squiggle by Snowfro  Chromie Squiggle #17
      4  2021-10-07 05:40:07.000  Chromie Squiggle by Snowfro  Chromie Squiggle #19

            PRICE_USD  TOKEN_ID  SALE_SEQ  IS_RESOLD   ARTIST
      0   55133.052016         4         1          0  Snowfro
      1   55133.052016         5         1          0  Snowfro
      2   55180.961396        13         1          0  Snowfro
      3  124890.971439        17         1          0  Snowfro
      4   74136.787632        19         1          0  Snowfro
```

```
[14]: nft[nft['ARTIST'] == 'Samsy'].iloc[0:2,]
```

```
[14]:              BLOCK_TIMESTAMP  \
      24514  2021-12-20 18:11:06.000
      24515  2021-12-20 18:25:29.000


                                        COLLECTION  \
      24514  Jiometory No Compute -        by Samsy
      24515  Jiometory No Compute -        by Samsy

                                        TOKEN_NAME     PRICE_USD   TOKEN_ID  \
      24514  Jiometory No Compute -        #1    11503.100404  232000001
      24515  Jiometory No Compute -        #2     5751.550202  232000002

             SALE_SEQ  IS_RESOLD ARTIST
      24514         1          0  Samsy
      24515         1          0  Samsy
```

```
[15]: # Grouped df by 'COLLECTION' and aggregated 'PRICE' by mean
      collection_price_mean = nft.groupby('COLLECTION').agg({'PRICE_USD': ['mean']}).
       ↪reset_index().sort_values(('PRICE_USD', 'mean'), ascending = False)
```

```
[16]:  # Perhaps we might be able to find prevalent features in the top few
       ↪collections to contribute in predicting price
       f, ax = plt.subplots(figsize=(6, 14))
       sns.barplot(x=('PRICE_USD', 'mean'), y="COLLECTION",
       ↪data=collection_price_mean);
```
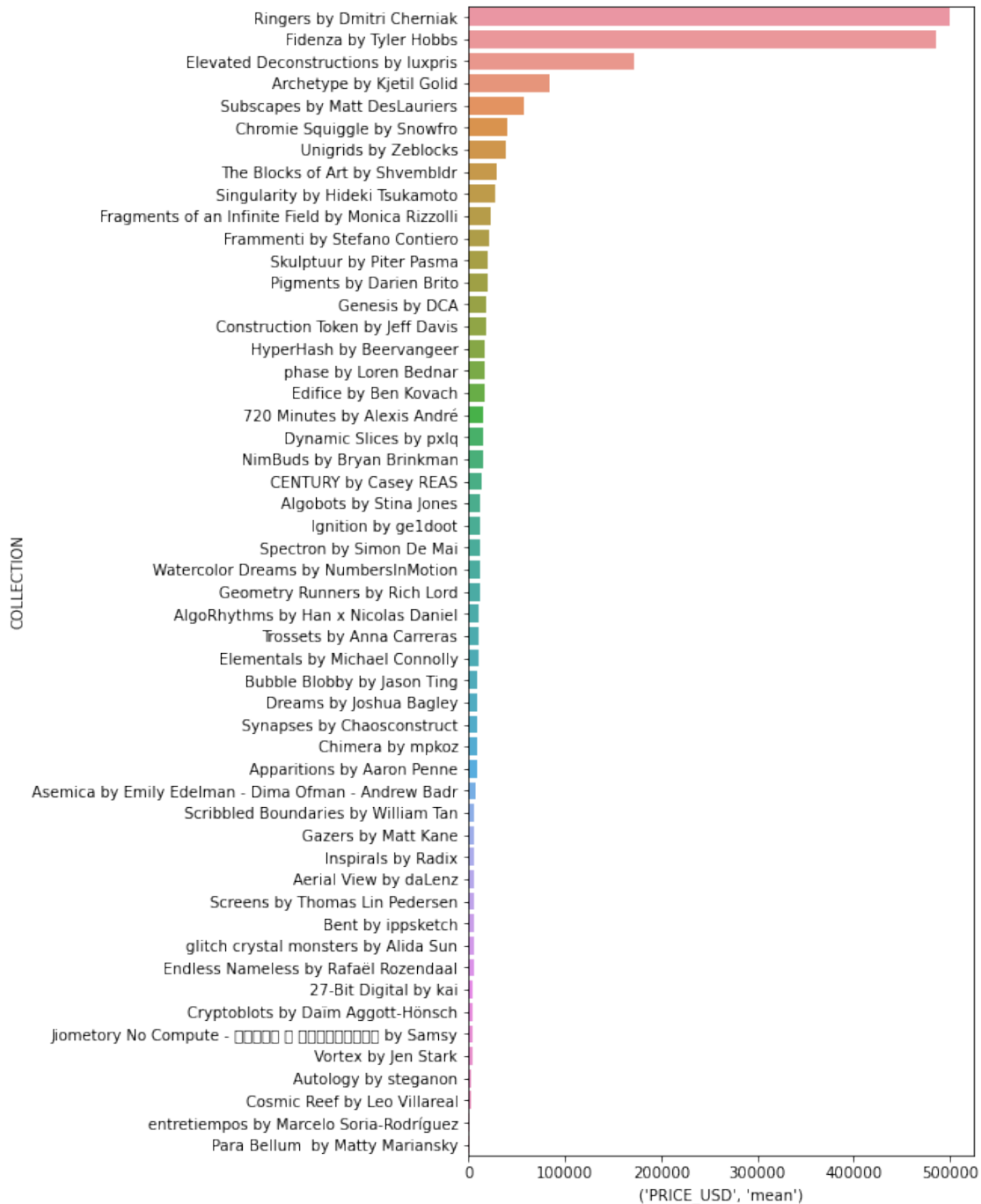
```
[17]: nft.groupby(['COLLECTION']).agg({'IS_RESOLD': 'sum'})
```

```
[17]:                                                      IS_RESOLD
      COLLECTION
      27-Bit Digital by kai                                       59
      720 Minutes by Alexis André                                 17
      Aerial View by daLenz                                       44
      AlgoRhythms by Han x Nicolas Daniel                         22
      Algobots by Stina Jones                                     14
      Apparitions by Aaron Penne                                  34
      Archetype by Kjetil Golid                                   15
      Asemica by Emily Edelman - Dima Ofman - Andrew …           913
      Autology by steganon                                       863
      Bent by ippsketch                                          988
      Bubble Blobby by Jason Ting                                  8
      CENTURY by Casey REAS                                       39
      Chimera by mpkoz                                           954
      Chromie Squiggle by Snowfro                                436
      Construction Token by Jeff Davis                            10
      Cosmic Reef by Leo Villareal                               806
      Cryptoblots by Daïm Aggott-Hönsch                          106
      Dreams by Joshua Bagley                                     19
      Dynamic Slices by pxlq                                       6
      Edifice by Ben Kovach                                      1325
      Elementals by Michael Connolly                              16
      Elevated Deconstructions by luxpris                          0
      Endless Nameless by Rafaël Rozendaal                        44
      Fidenza by Tyler Hobbs                                      11
      Fragments of an Infinite Field by Monica Rizzolli        1296
      Frammenti by Stefano Contiero                               29
      Gazers by Matt Kane                                       1337
      Genesis by DCA                                              15
      Geometry Runners by Rich Lord                               82
      HyperHash by Beervangeer                                     9
      Ignition by ge1doot                                          6
      Inspirals by Radix                                          50
      Jiometory No Compute -         by Samsy         1283
      NimBuds by Bryan Brinkman                                    7
      Para Bellum  by Matty Mariansky                            387
      Pigments by Darien Brito                                    45
      Ringers by Dmitri Cherniak                                   2
      Screens by Thomas Lin Pedersen                             949
      Scribbled Boundaries by William Tan                         63
      Singularity by Hideki Tsukamoto                             28
      Skulptuur by Piter Pasma                                  1166
      Spectron by Simon De Mai                                    20
      Subscapes by Matt DesLauriers                               16
```

```
Synapses by Chaosconstruct                          20
The Blocks of Art by Shvembldr                      10
Trossets by Anna Carreras                           59
Unigrids by Zeblocks                                 1
Vortex by Jen Stark                               2218
Watercolor Dreams by NumbersInMotion                27
entretiempos by Marcelo Soria-Rodríguez            578
glitch crystal monsters by Alida Sun                64
phase by Loren Bednar                               70
```

[18]: `nft['COLLECTION'].value_counts()`

```
[18]: Vortex by Jen Stark                               3218
      Gazers by Matt Kane                               2336
      Fragments of an Infinite Field by Monica Rizzolli 2319
      Jiometory No Compute -          by Samsy       2306
      Edifice by Ben Kovach                             2300
      Skulptuur by Piter Pasma                          2165
      Bent by ippsketch                                 2010
      Screens by Thomas Lin Pedersen                    1949
      Chimera by mpkoz                                  1940
      Asemica by Emily Edelman - Dima Ofman - Andrew Badr 1890
      Autology by steganon                              1887
      Cosmic Reef by Leo Villareal                      1830
      Chromie Squiggle by Snowfro                       1525
      entretiempos by Marcelo Soria-Rodríguez           1390
      Para Bellum  by Matty Mariansky                   1387
      Geometry Runners by Rich Lord                      388
      Cryptoblots by Daïm Aggott-Hönsch                  319
      phase by Loren Bednar                              308
      Scribbled Boundaries by William Tan                305
      glitch crystal monsters by Alida Sun               259
      Pigments by Darien Brito                           236
      Trossets by Anna Carreras                          214
      Aerial View by daLenz                              205
      Inspirals by Radix                                 182
      CENTURY by Casey REAS                              177
      27-Bit Digital by kai                              177
      Endless Nameless by Rafaël Rozendaal               176
      Apparitions by Aaron Penne                         165
      Singularity by Hideki Tsukamoto                    123
      Synapses by Chaosconstruct                         121
      AlgoRhythms by Han x Nicolas Daniel                119
      Watercolor Dreams by NumbersInMotion               115
      Dreams by Joshua Bagley                            106
      Frammenti by Stefano Contiero                      105
      Fidenza by Tyler Hobbs                              98
```

```
Genesis by DCA                                    89
720 Minutes by Alexis André                       86
Algobots by Stina Jones                           78
Bubble Blobby by Jason Ting                       76
Archetype by Kjetil Golid                         74
Elementals by Michael Connolly                    69
Subscapes by Matt DesLauriers                     61
Spectron by Simon De Mai                          60
HyperHash by Beervangeer                          58
Construction Token by Jeff Davis                  55
Dynamic Slices by pxlq                            53
Ringers by Dmitri Cherniak                        51
The Blocks of Art by Shvembldr                    47
NimBuds by Bryan Brinkman                         42
Ignition by ge1doot                               29
Unigrids by Zeblocks                              21
Elevated Deconstructions by luxpris               17
Name: COLLECTION, dtype: int64
```