Vinyl Profitability Explorer

A tool built to optimize record store profit and efficiency.

Project Outline

The tool built in this project will create a value matrix, where record sellers can evaluate Discogs data and interpret a live visual metric of demand. It's easy to look up a record's price, but it is very difficult to make an evaluation relative to demand. The web application built in this project enables the user to locate undervalued records and stock records that are likely to net profit.

Project Workflow

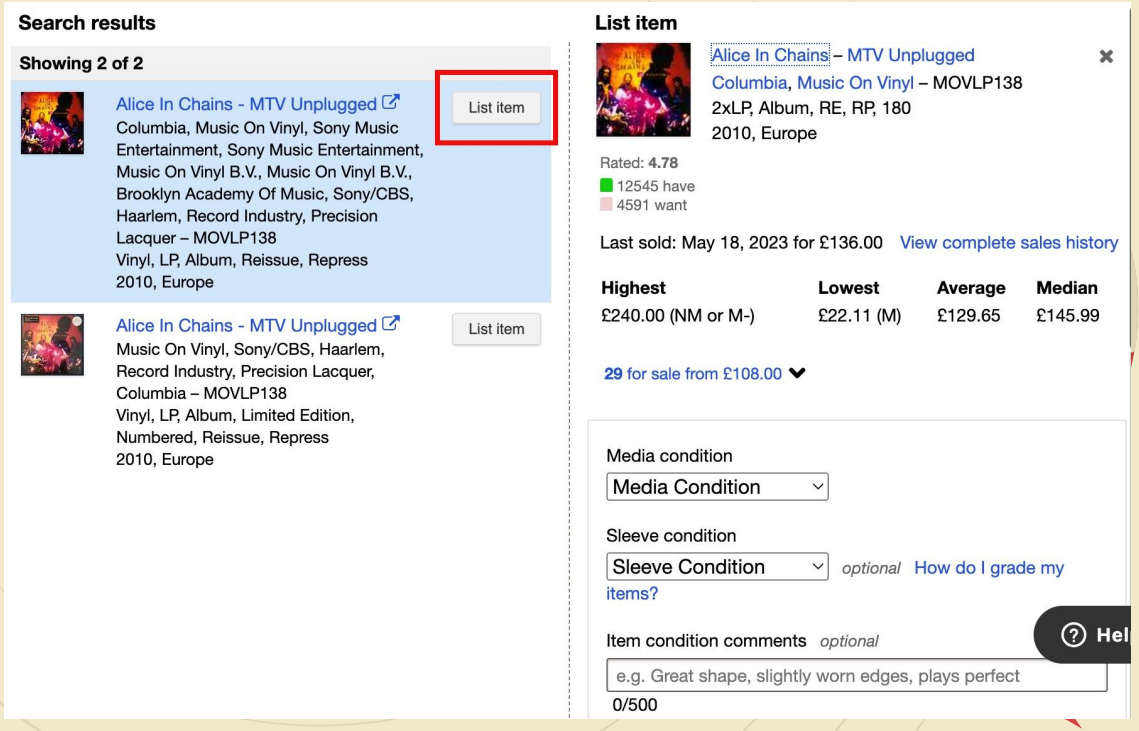
- Data Collection from Discogs
- Data Cleaning in Jupyter Notebook
- Feature Engineering
- High & Low Value Tier System
- Offer Price Valuation Tool
- R Shiny Application

The goal of this project is to configure an application capable of dictating vinyl profitability.

Data Source & Web-Scrape

Discogs is the largest online database for physical media purchases. They have cataloged over 750 million records.

Discogs Marketplace



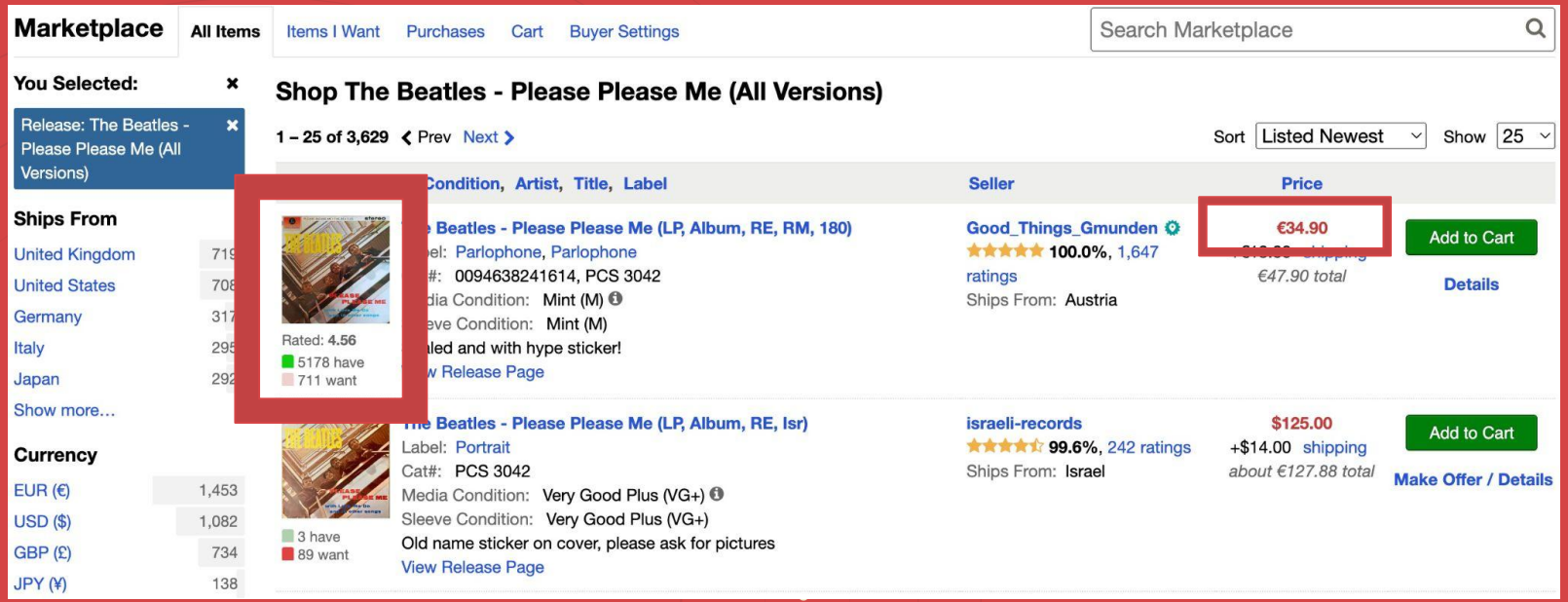
What?

Online database for physical media

How?

Community marketplace with prices and demand

Web-scrape Data Collection



Data Feature Engineering

Which records are popular and how much are they worth given marketplace demand and rating?

Data Variables

01

RATING

community vote assigned to the vinyl record

02

WANT

Number of community members that desire record

03

PRICE

representation of marketplace value

04

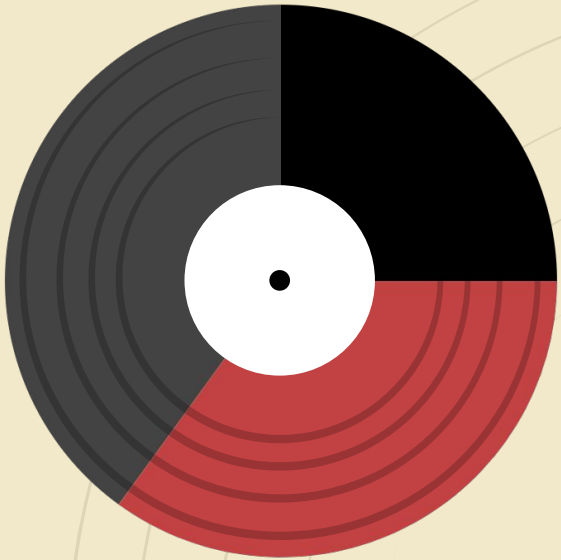
HAVE

Number of community members that own record

Data Cleaning

album	price	rating	have	want	tier	popularity
Nilsson* - Knnillssonn	15.0	4.02	1340	215	Mid-Tier (Popular)	0.1382636655948550
Rockin' Horse - Rockin' Horse	10.0	4.26	272	212	Mid-Tier (Popular)	0.4380165289256200
The Beatles - Abbey Road	30.0	4.64	484	1053	Top Rated	0.6851008458035130
Rod Stewart - Foot Loose & Fancy Free	3.99	3.7	7628	110	Mid-Tier (Popular)	0.01421555957611790
Bob Weir - Heaven Help The Fool	6.0	3.9	1770	92	Mid-Tier (Popular)	0.04940923737916220
Keith Urban - Ripcord	20.0	4.23	816	127	Mid-Tier (Popular)	0.13467656415694600
Aerosmith - Toys In The Attic	8.0	4.02	22835	2603	Mid-Tier (Popular)	0.1023272269832530
The J. Geils Band - Bloodshot	5.0	3.5	143	38	Niche/Underground	0.20994475138121500
Phil Ochs - There But For Fortune	39.5	5.0	15	24	Niche/Underground	0.6153846153846150
Mott The Hoople - The Hoople	10.0	3.89	2561	144	Mid-Tier (Popular)	0.05323475046210720
Electric Light Orchestra - A New World Record	7.0	4.11	12772	694	Mid-Tier (Popular)	0.05153720481211940
Grand Funk Railroad - Caught In The Act	8.0	4.0	194	40	Niche/Underground	0.17094017094017100
The Rolling Stones - Sweet Summer Sun - Hyde Park Live	176.98	4.43	57	63	Mid-Tier (Popular)	0.525
Pete Townshend - All The Best Cowboys Have Chinese Eyes	15.0	3.84	930	27	Niche/Underground	0.02821316614420060
Led Zeppelin - In Through The Out Door	15.0	4.09	1887	422	Mid-Tier (Popular)	0.18276310090948500

Feature Engineering



Popularity

Want / Want + Have count

Rating

Community given vote

Tier System

Model for profitability

In future versions of the app, rating will be replaced with a unique score based on inventory and sale velocity.

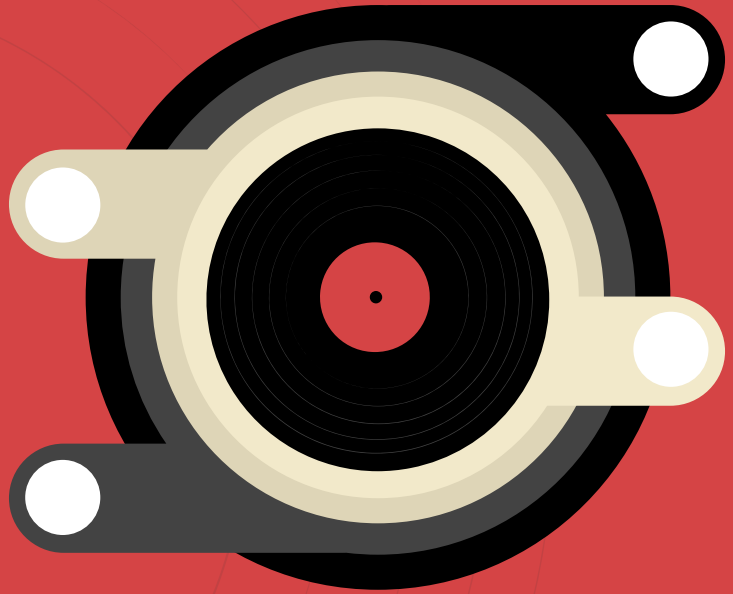
Tier System

Top Rated

High Ratings
High Demand

Mid-Tier

Medium Ratings
High Demand



Niche / Underground

Medium Ratings
Low Demand

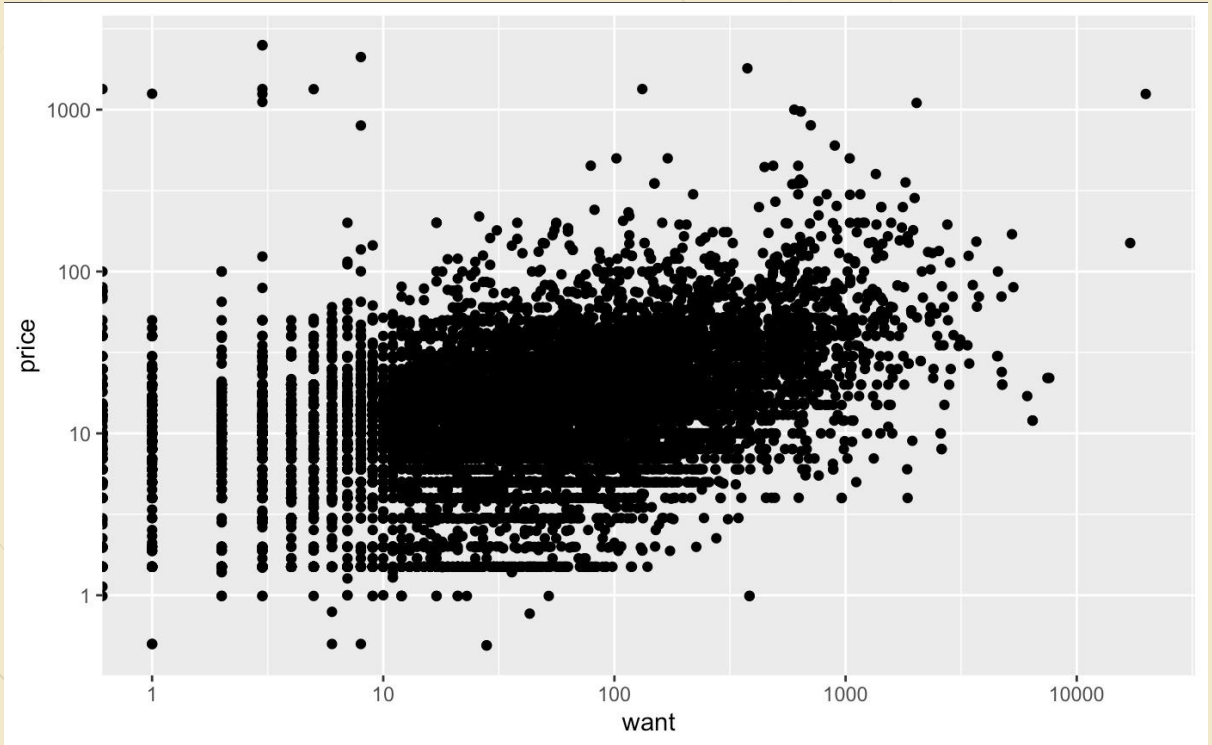
Low Priority

Low Ratings
Low Demand

Data Questions

- Do records with a higher demand also have a higher prices?
- Which records are high in demand but low in cost?
- What are the most popular records in a specific price range?

Exploratory Analysis



Positive

Want and price are correlated events

Weak

Statistically significant estimated correlation

0.2559768

R Shiny Application

Popularity is calculated using discogs community votes. Large values indicate more demand relative to supply. This may indicate better resale value.