

Explorify

Presented by: Inna Ivanova and Jonatan Engstad
CPSC 547: Information Visualization



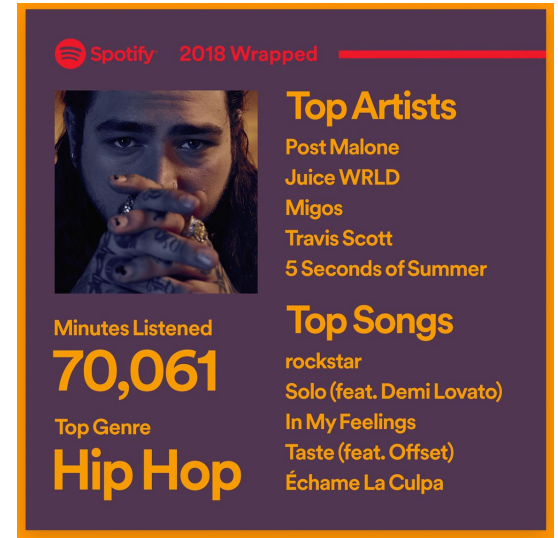
Agenda

1. Motivation
2. Explorify
3. Demo
4. Limitations
5. Q&As



Motivation

- Spotify Platform
 - The most popular platform for streaming music with millions of users
 - Provides custom visualization for their users data
- Spotify Year Wrapped Report
 - Allows Spotify users to view a compilation of data about their activity on the platform
 - It's only at the end of the year
 - Fairly limited with no interactivity



Colour By

- Artist Genres
- Artist Features
- Artist Timeline

Position By

- Artist Genres
- Artist Features
- Artist Timeline

Number of Artists to Display

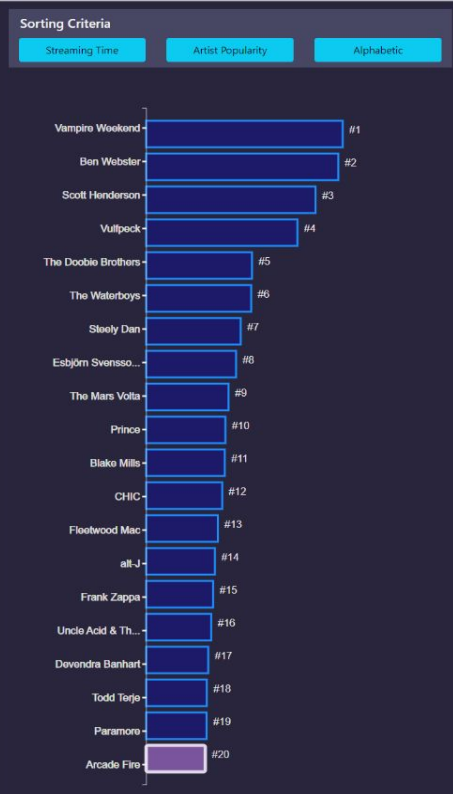
50

Display Attributes

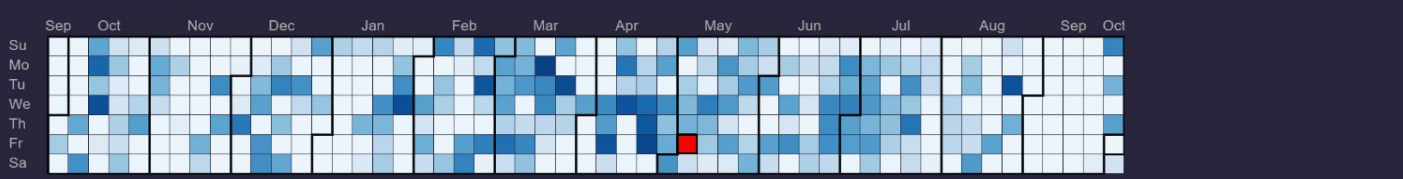
- Artist Names

Legend

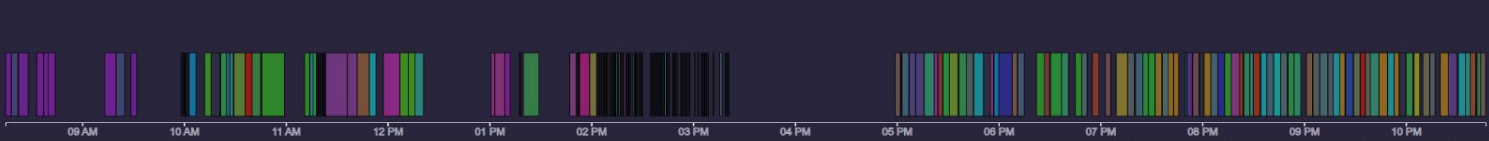
- Artist streaming time
- Artist genres
- Genres in common
- Proportion of genres shared
- Number of genres shared
- Similarity by musical qualities



Daily Listening Pattern ?



Detailed Listening History per Day ?





Why is Explorify?

- Allows the user to interact with and explore their personal streaming history
- Using Explorify, the user will:
 - Find interesting patterns and facts
 - Discover trends
 - Trigger memories
- In general: geek out about the data





Building Explorify: Data Collection



Explorify: Data Collection

1. Request data on your Spotify account page. Thanks GDPR!

STEP 1

Click the button to start the process of collecting your data.

Requested October 15, 2021

Request

STEP 2

We are preparing your data file. This can take up to 30 days to complete.

You'll receive an email when it is ready to download.

STEP 3

We've sent you an email with a link to download your data file. If you can't find the email, check your junk/spam folders, or click below to resend.

Resend email





Explorify: Data Collection

1. Request data on your Spotify account page. Thanks GDPR!
2. Wait



Explorify: Data Collection

1. Request data on your Spotify account page. Thanks GDPR!
2. Wait
3. Receive 1 year detailed streaming history*

* It is possible to request data for entire account duration, but data is very sparse/fragmented



```
data > {} StreamingHistory0json > {} 2
20129   trackName : white dress ,
20130     msPlayed" : 333710
20131   },
20132   {
20133     "endTime" : "2021-03-21 13:53",
20134     "artistName" : "Lana Del Rey",
20135     "trackName" : "Chemtrails Over The Country Club",
20136     "msPlayed" : 271176
20137   },
20138   {
20139     "endTime" : "2021-03-21 22:22",
20140     "artistName" : "Lana Del Rey",
20141     "trackName" : "Dance Till We Die",
20142     "msPlayed" : 30722
20143   },
20144   {
20145     "endTime" : "2021-03-23 11:23",
20146     "artistName" : "Perfume Genius",
20147     "trackName" : "On the floor",
20148     "msPlayed" : 303600
20149   },
20150   {
20151     "endTime" : "2021-03-23 11:26",
20152     "artistName" : "Perfume Genius",
20153     "trackName" : "Jason",
20154     "msPlayed" : 185826
20155   },
20156   {
20157     "endTime" : "2021-03-23 11:29",
20158     "artistName" : "Perfume Genius",
20159     "trackName" : "Slip Away",
20160     "msPlayed" : 165329
20161   },
20162   {
20163     "endTime" : "2021-03-23 11:33",
20164     "artistName" : "Perfume Genius",
20165     "trackName" : "Queen",
20166     "msPlayed" : 230719
20167   },
20168   {
20169     "endTime" : "2021-03-23 11:34",
20170     "artistName" : "Perfume Genius",
20171     "trackName" : "Jason - Planningtorock 'Jason there's no rush' Remix",
20172     "msPlayed" : 91044
20173   },
20174   {
20175     "endTime" : "2021-03-23 11:40",
20176     "artistName" : "Perfume Genius",
```



Explorify: Data Collection

1. Request data on your Spotify account page. Thanks GDPR!
2. Wait
3. Receive 1 year detailed streaming history*
4. Retrieve additional data from the Spotify Web API





Building Explorify: Creating Explorify





Creating Explorify

- The initial idea(s):
 - Streamchart, track clustering, listening pattern analysis, ...

4. Data and Task Abstractions

There are a total of **5 tasks we will be visualizing** within the Explorify platform: **Artist-Genre Network, Track Clustering by Audio Features, Artists Stream-graph, Top Artist Over Time** and **Daily Listening Pattern**.





Creating Explorify

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- Scrapping the initial ideas
 - Very many ambitious tasks, have to prioritize

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There are a total of 5 tasks we will be visualizing within the Explorify platform: **Artist-Genre Network**, **Track Clustering by Audio Features**, **Artists Streamgraph**, **Top Artist Over Time** and **Daily Listening Pattern**. While we wish to facilitate all of these tasks with Explorify, there are some which are more important than others. In particular, we will prioritize the artist-genre network and daily listening pattern tasks. The streamgraph and track clustering tasks on the other hand will only be implemented if we are happy with the implementation of the other tasks.





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- The final product takes form
 - Settle on the most promising idea: the artist-genre network.

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 - Settle on the most promising idea: the artist-genre network.
 - Iterate

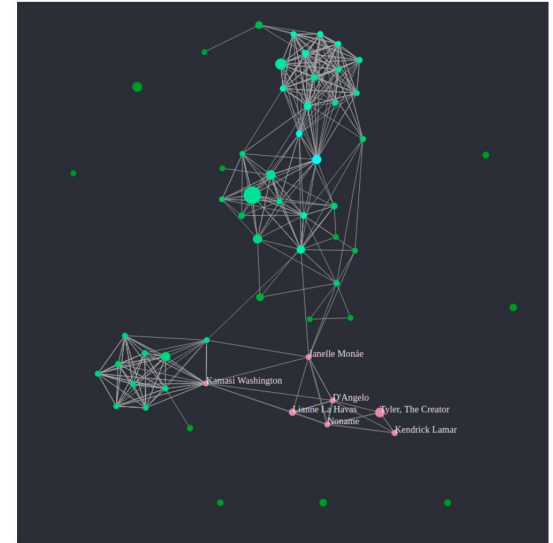


Figure 1. Artist-genre network visualization



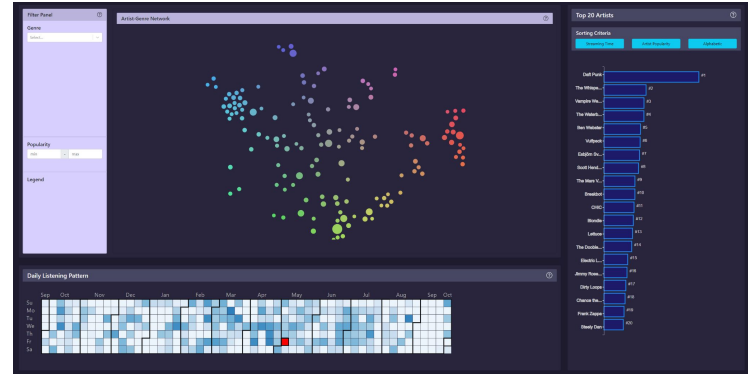
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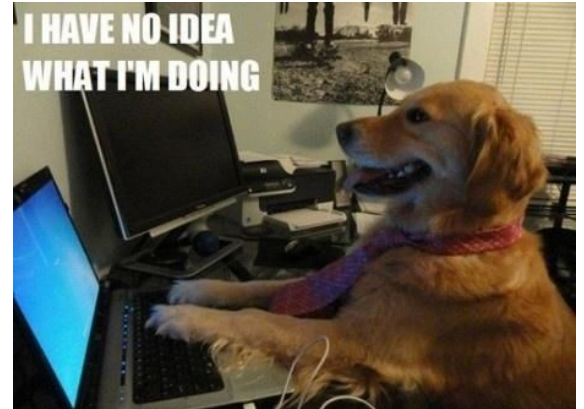
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The Process

- The initial idea(s)
 - Streamchart, track clustering, listening pattern analysis
- Scrapping the initial ideas
 - Very many ambitious tasks
- The final product takes form
 - Settle on the most promising idea: the artist-genre network.
 - Iterate, iterate and iterate some more
- In parallel: Learn d3, explore and process the data





The Final Product: Explorify

DEMO



Explorify



Limitations & Future Work



Limitations 1: Simple Technical Limitations

- Transitions could be better
- Code is messy
- Podcasts are not filtered out
- Some tracks have had slight name changes, making it hard to properly identify them
- UI is not responsive, and wastes too much space
- Some bugs present
- Question mark icons do nothing





Limitatons 2: Larger Limitations

- The tool is not very intuitive and the user must do some work before they can see interesting results
- Genres are not displayed very well
 - Possible solution: Multigraph with genres as nodes?



Future Work

- User testing
- Select multiple days in calendar
- Add zooming to timeline chart
- More edgemap options!
 - More edge types: related artists, shared sessions, ...
 - More color scales: Artist popularity, ...
- Fix the technical issues







What is Explorify?

- A dashboard visualizing your Spotify streaming history
- Several Interactive and interconnected views
 - Main view: edgemap with artists as nodes
 - With control panel
 - Several supporting views:
 - Calendar heatmap
 - Popularity barchart
 - Timeline Gantt chart

Jonatan's Storage Room



```
StreamingHistory0.json X
data > {} StreamingHistory0.json > {} 2
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