Designing a Data Subject Access Rights Tool

Arthur Borem, University of Chicago

Collaborators: Elleen Pan, Olufunmilola Obielodan, Aurelie Roubinowitz, Luca Dovichi, Sophie Veys, Daniel Serrano, Madison Stamos, Margot Herman, Nathan Reitinger, Michelle L. Mazurek, and Blase Ur.

Art. 12 GDPR

Transparent information, communication and modalities for the exercise of the rights of the data subject

1. [1]The controller shall take appropriate measures to provide any information referred to in Articles 13 and 14 and any communication under Articles 15 to 22 and 34 relating to processing to the data subject in a concise, transparent, intelligible and easily accessible form, using clear and plain language, in particular for any information addressed specifically to a child. [2]The information shall be provided in writing, or by other means, including, where appropriate, by electronic means. [3]When requested by the data subject, the information may be provided orally, provided that the identity of the data subject is proven by other means.

Art. 15 GDPR

Right of access by the data subject

1. The data subject shall have the right to obtain from the controller confirmation as to whether or not personal data concerning him or her are being processed, and, where that is the case, access to the personal data and the following information:

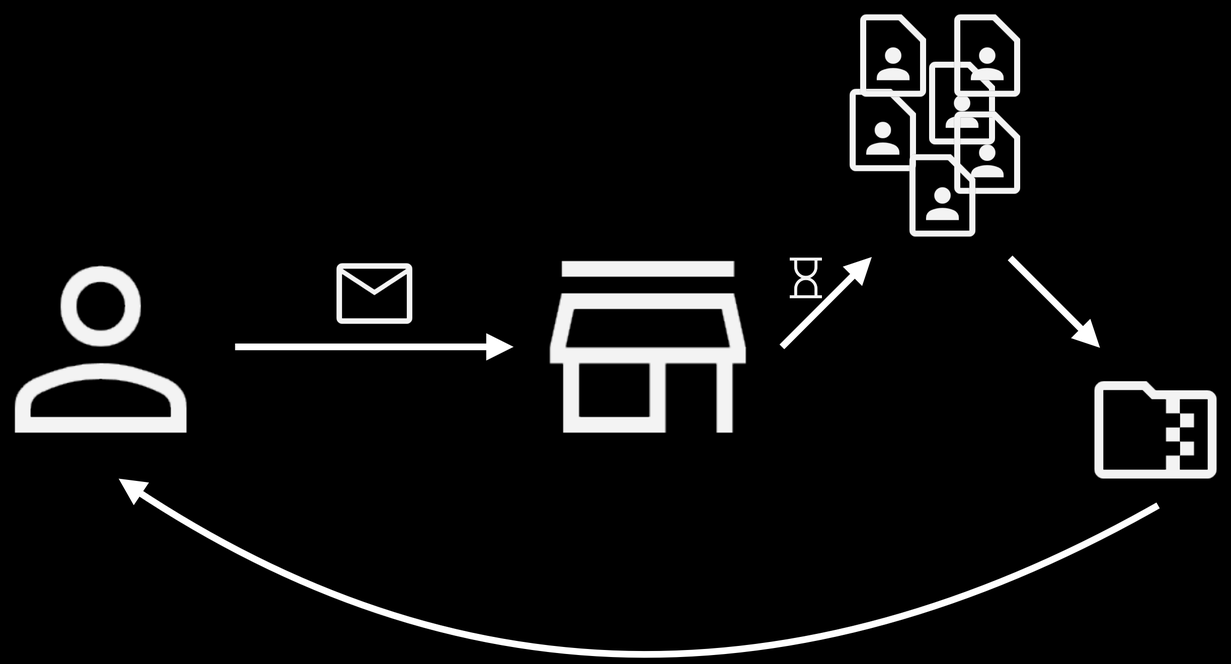
(a) the purposes of the processing;

(b) the categories of personal data concerned;

(c) the recipients or categories of recipient to whom the personal data have been or will be disclosed, in particular recipients in third countries or international organizations;

(d) ...

Data Subject Access Requests (DSAR)



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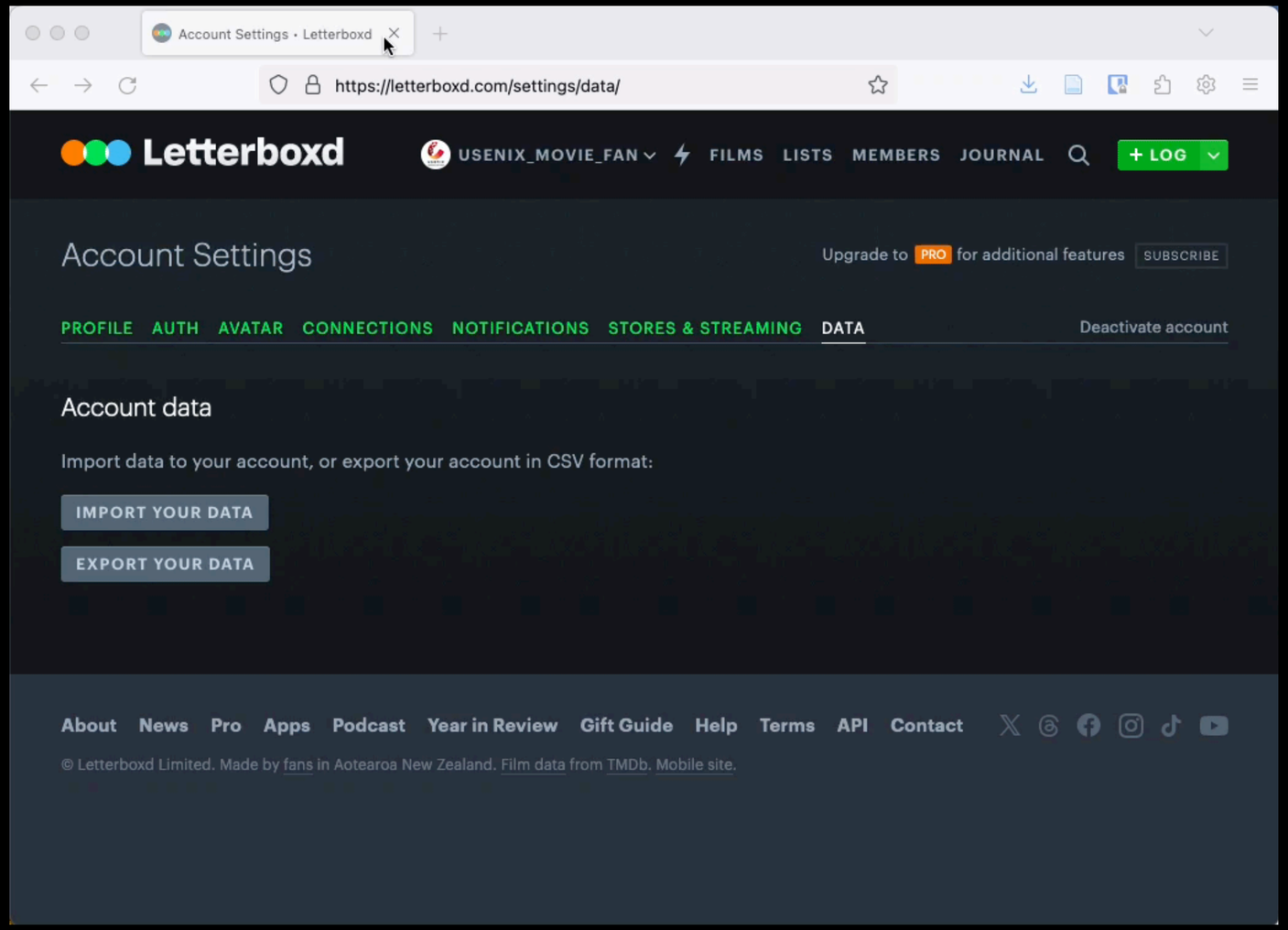
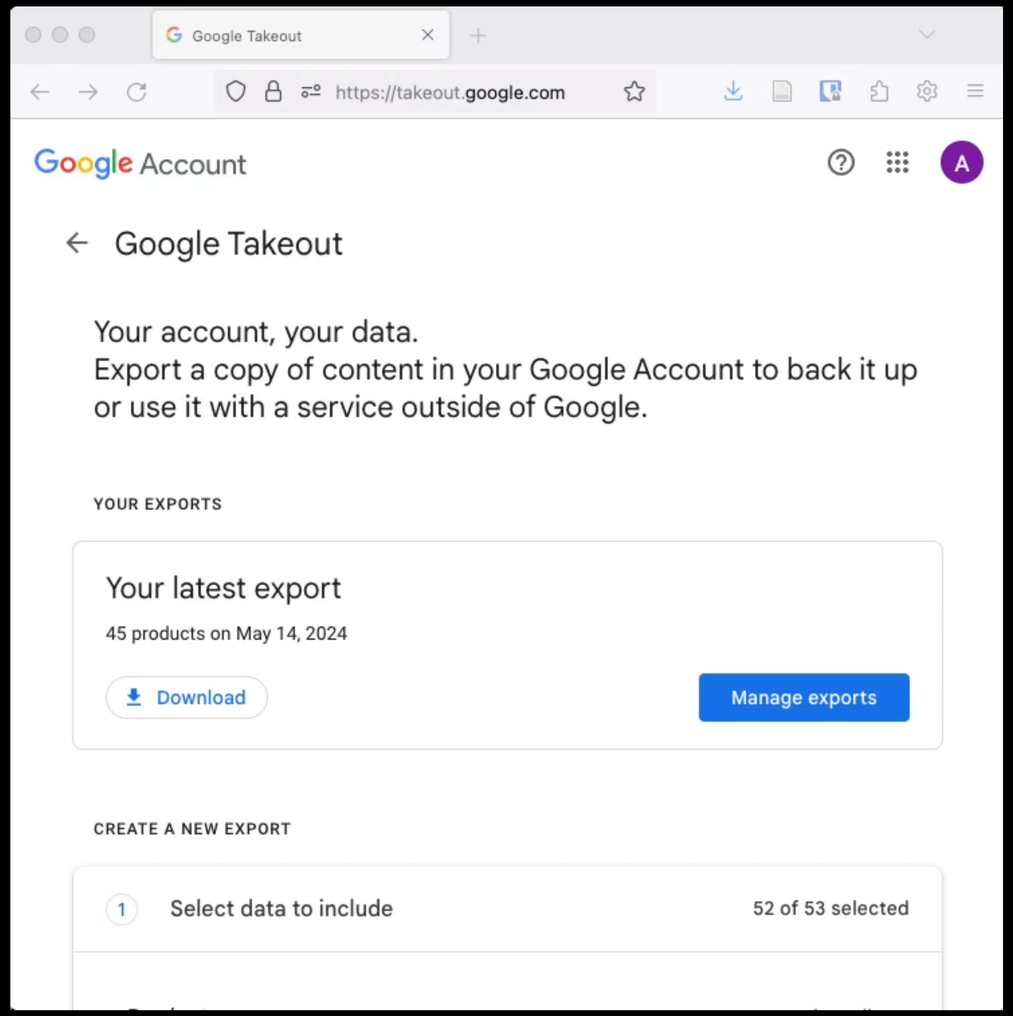
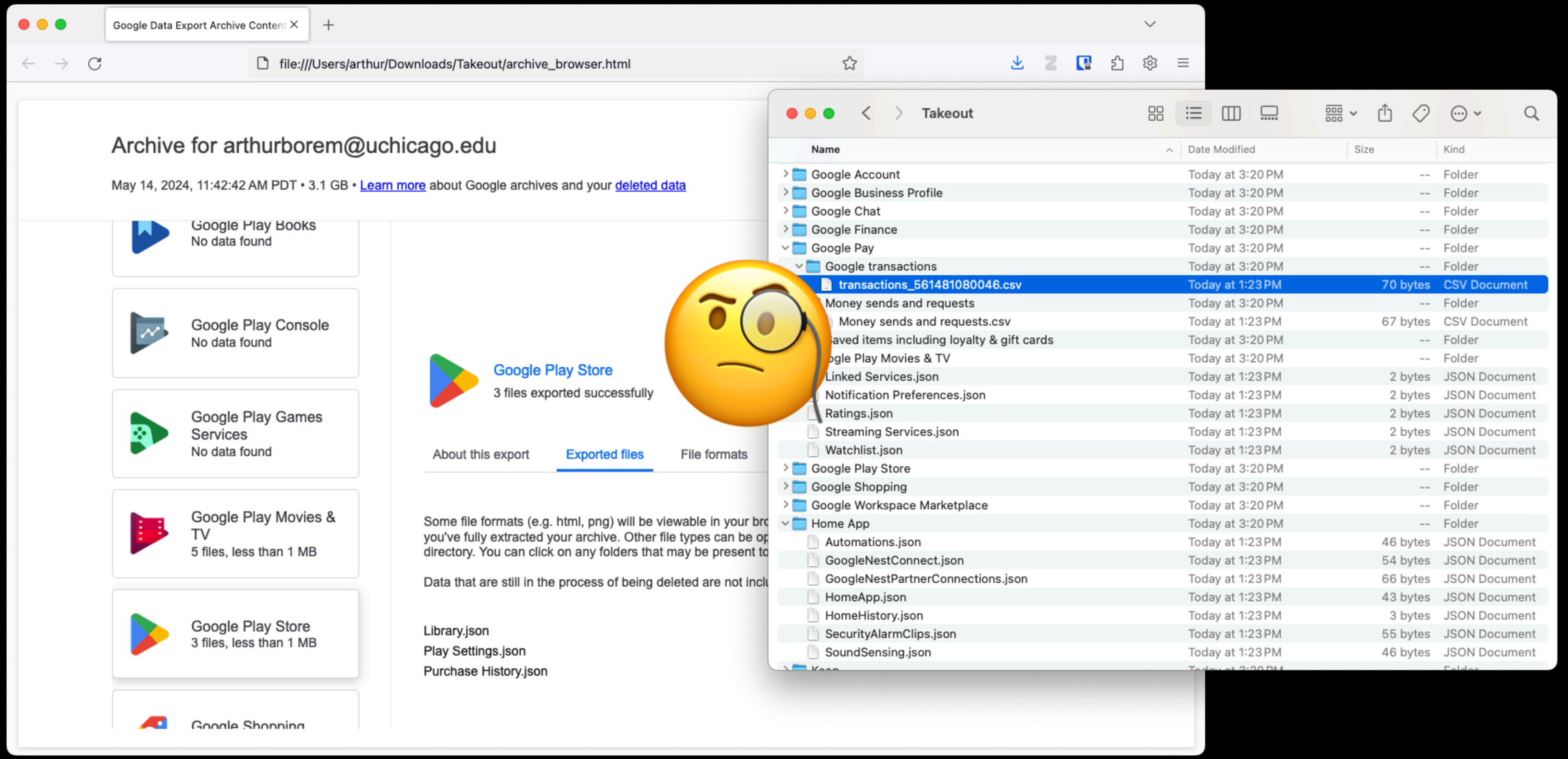




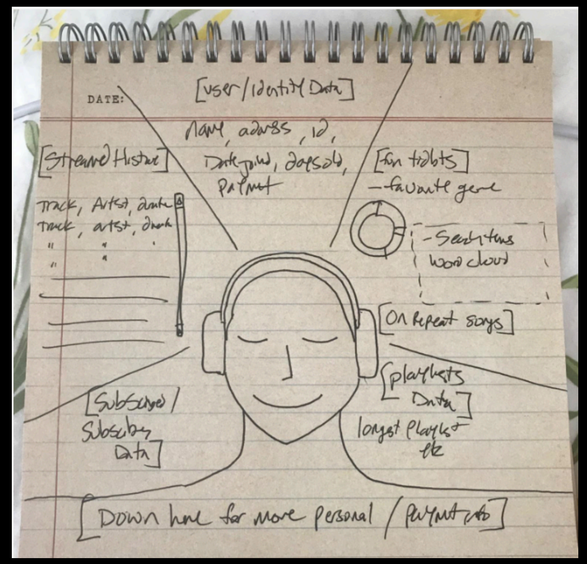
Data Exports



Focus groups

Co-design

Ideation



Data format

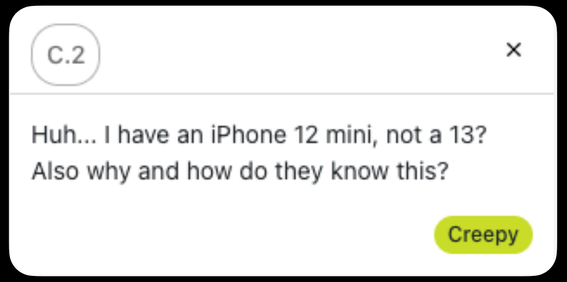
Data quantity

Sophie Veys, Daniel Serrano, Madison Stamos, Margot Herman, Nathan Reitinger, Michelle L. Mazurek, Blase Ur. **Pursuing Usable and Useful Data Downloads Under GDPR/CCPA Access Rights via Co-Design.** In *Proc. SOUPS*, 2021.

Data annotation tool

Survey

Data export aggregation



Arthur Borem, Elleen Pan, Olufunmilola Obielodan, Aurelie Roubinowitz, Luca Dovichi, Michelle L. Mazurek, Blase Ur. **Data Subjects' Reactions to Exercising Their Right of Access.** In *Proc. USENIX Security*, 2024.

33RD USENIX SECURITY SYMPOSIUM

What do Users Want From Data Exports?

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Users want to know...

- *1. What* data is being stored.

Users want to know...

- [x] 2. *How* data is being stored.

Users want to know...

- 3. *How* data is being **used**.

Users want to know...

- ~~3.~~ 4. *High-level takeaways* from the data.

Barriers to Accessibility and Clarity in Data Exports

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Data Explorer

Data Illuminator Downloading My Data About

2023_2.json

Upload zip file | Clear all data | Search for a term... | go | 0 out of 0

ts: 2022-04-12T17:19:00Z

username: arthursbb

C.2 **platform**: iOS 15.4.1 (iPhone13,1)

ms_played: 218600

conn_country: US

ip_addr_decrypted: 172.58.141.134

user_agent_decrypted: unknown

C.1 **master_metadata_track_name**: Clube Da Esquina N° 2

C.1 **master_metadata_album_artist_name**: Milton Nascimento

C.1 **master_metadata_album_album_name**: Clube Da Esquina

spotify_track_uri: spotify:track:1sdW2whJr8CLa6bMA67LPQ

episode_name: null

episode_show_name: null

spotify_episode_uri: null

reason_start: trackdone

previous | 1 | 2 | 3 | 4 | 5 | 6 | 7 | ... | 7458 | 7459 | 7460 | next

Instructions

Your notes

Add note

C.2

Huh... I have an iPhone 12 mini, not a 13? Also why and how do they know this?

Creepy

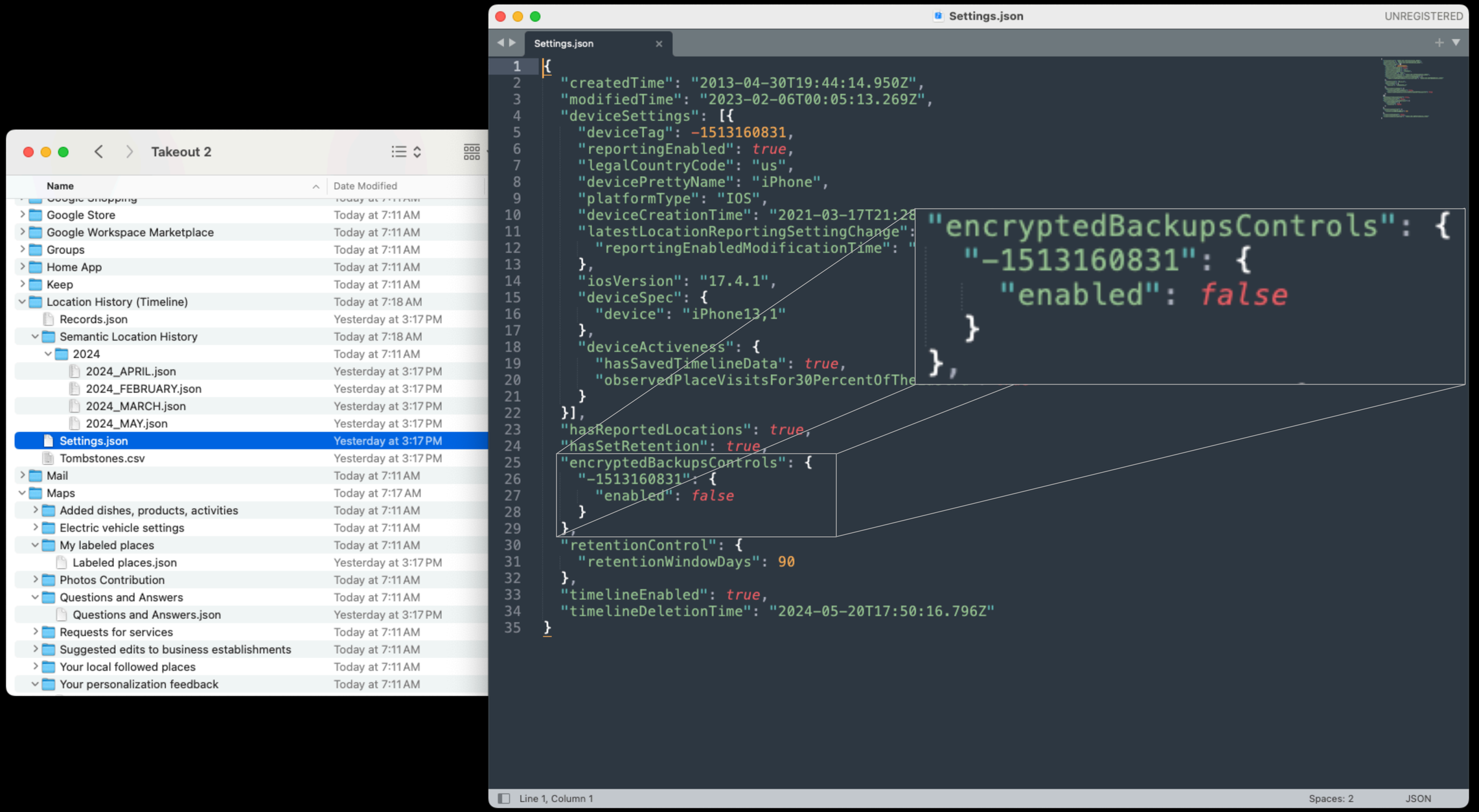
C.1

Wow, one of my favorite albums!

Interesting

All notes

↑ Submit


Takeout 2
Name
Date Modified
Google Store
Google Workspace Marketplace
Groups
Home App
Keep
Location History (Timeline)
Records.json
Semantic Location History
2024
2024_APRIL.json
2024_FEBRUARY.json
2024_MARCH.json
2024_MAY.json
Settings.json
Tombstones.csv
Mail
Maps
Added dishes, products, activities
Electric vehicle settings
My labeled places
Labeled places.json
Photos Contribution
Questions and Answers
Questions and Answers.json
Requests for services
Suggested edits to business establishments
Your local followed places
Your personalization feedback
Settings.json
UNREGISTERED
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"modifiedTime": "2023-02-06T00:05:13.269Z",
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"deviceTag": -1513160831,
"reportingEnabled": true,
"legalCountryCode": "us",
"devicePrettyName": "iPhone",
"platformType": "IOS",
"iosVersion": "17.4.1",
"deviceSpec": {
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"deviceActiveness": {
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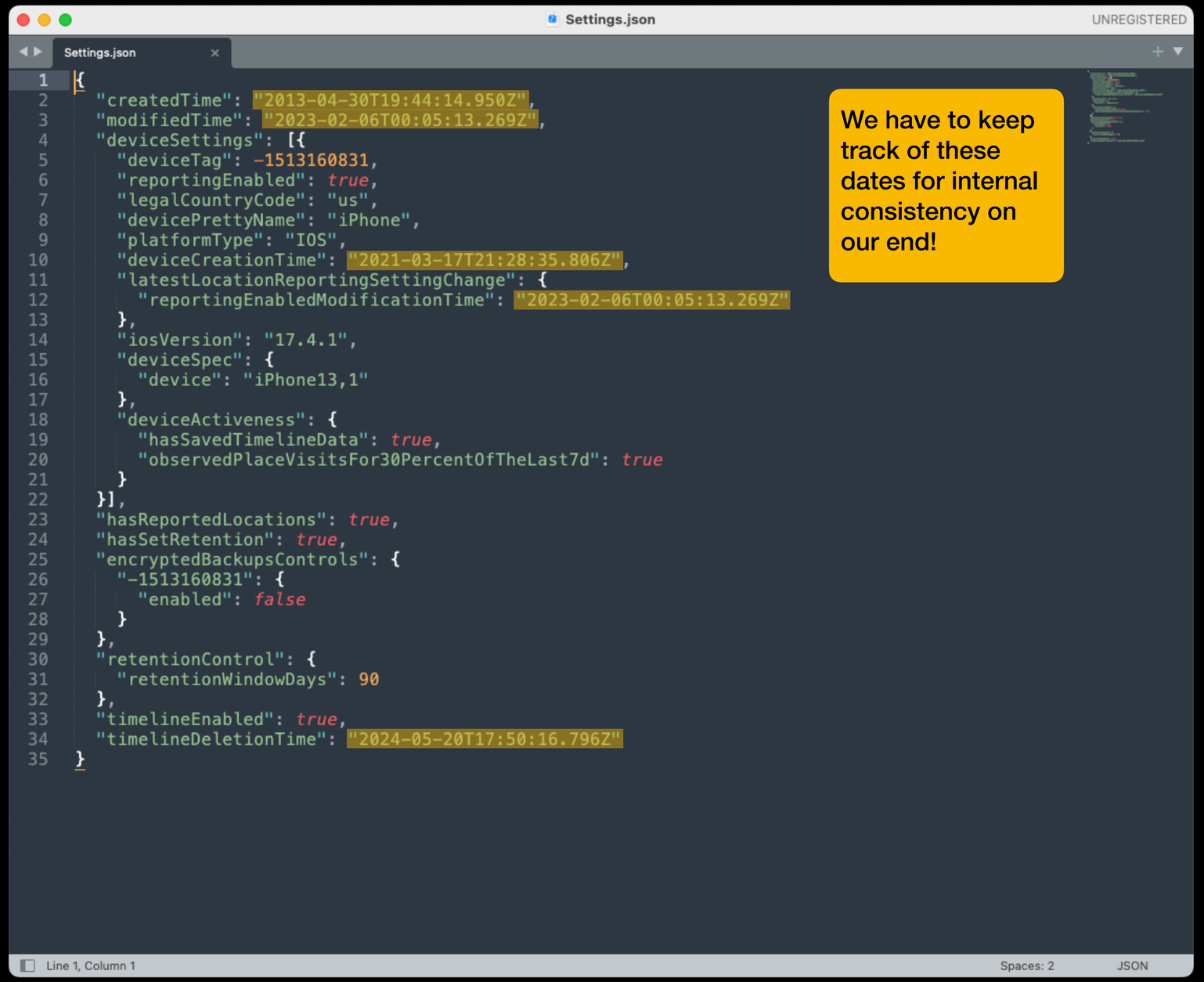
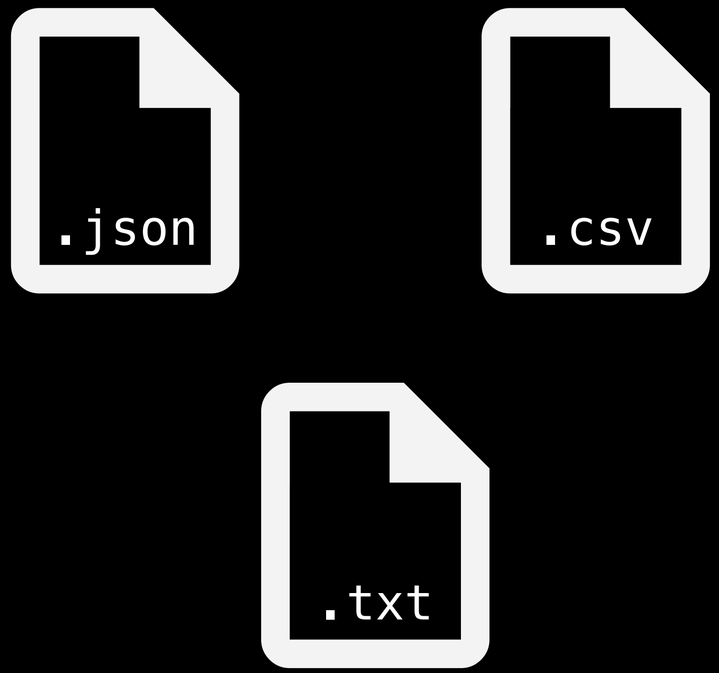
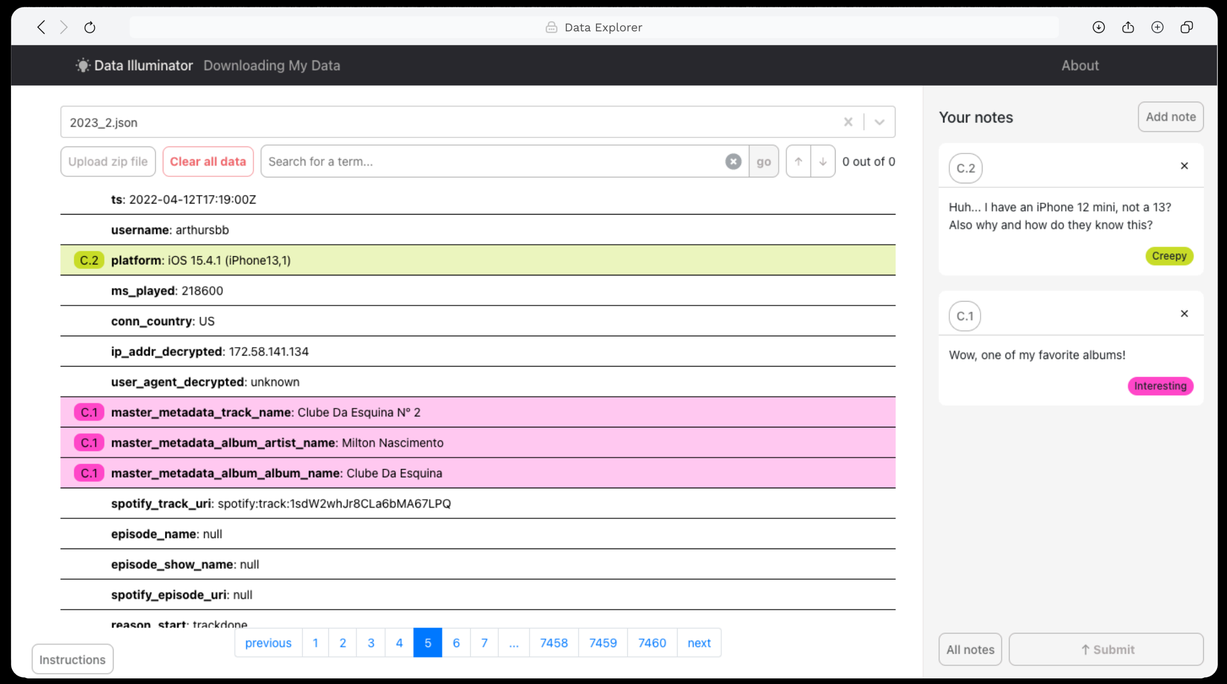
"hasReportedLocations": true,
"hasSetRetention": true,
"encryptedBackupsControls": {
"-1513160831": {
"enabled": false
"retentionControl": {
"retentionWindowDays": 90
"timelineEnabled": true,
"timelineDeletionTime": "2024-05-20T17:50:16.796Z"
Line 1, Column 1
Spaces: 2
JSON



We have to keep track of these dates for internal consistency on our end!





variable	type	description
deviceTag	integer	A unique, negative number for each of your devices
...	...	...

Key Features for Usable Data Exports

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Track	Album artist	Track start time	+
I Got the News	Steely Dan	04/19/2023 at 9:52 AM (CST)	
Midnight Sun	Nilüfer Yanya	04/19/2023 at 10:01 AM (CST)	
Salty Road Dogs Victory Anthem	Alabaster DePlume	04/19/2023 at 10:06 AM (CST)	


```
{
  "ts": "2023-04-19T15:10:06Z",
  "username": "arthursbb",
  "platform": "osx",
  "ms_played": 3882,
  "conn_country": "US",
  "ip_addr_decrypted": "98.206.160.59",
  "user_agent_decrypted": "unknown",
  "master_metadata_track_name": "Salty Road Dogs Victory Anthem",
  "master_metadata_album_artist_name": "Alabaster DePlume",
  "master_metadata_album_album_name": "Salty Road Dogs Victory Anthem",
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  "episode_name": null,
  "episode_show_name": null,
  "spotify_episode_uri": null,
  "reason_start": "clickrow",
  "reason_end": "remote",
  "shuffle": false,
  "skipped": false,
  "offline": false,
  "offline_timestamp": 1681917002,
  "incognito_mode": false
},
```


This is a UNIX timestamp. It's the same as April 19, 2023 at 19:58am (CST). We keep it in milliseconds to maintain consistency across your devices.

RIIVERDANCE	Beyoncé	04/19/2023 at 5:31 PM (CST)	
Midnight Sun	Nilüfer Yanya	04/21/2023 at 3:11 PM (CST)	

1. Definitions and explanations in-band

Data Explorer

Search...

Track	Album artist	Track start time	+
I Got the News	Steely Dan	04/19/2023 at 9:52 AM (CST)	
Midnight Sun	Nilüfer Yanya	04/19/2023 at 10:01 AM (CST)	
Salty Road Dogs Victory Anthem	Alabaster DePlume	04/19/2023 at 10:06 AM (CST)	


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{
  "ts": "2023-04-19T15:10:06Z",
  "username": "arthursbb",
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  "master_metadata_album_album_name": "Salty Road Dogs Victory Anthem",
  "spotify_track_uri": "spotify:track:1wNz8Jnby57eQMThNoMDB4",
  "episode_name": null,
  "episode_show_name": null,
  "spotify_episode_uri": null,
  "reason_start": "clickrow",
  "reason_end": "remote",
  "shuffle": false,
  "skipped": false,
  "offline": false,
  "offline_timestamp": 1681917002,
  "incognito_mode": false
},
```


RIIVERDANCE	Beyoncé	04/19/2023 at 5:31 PM (CST)	
Midnight Sun	Nilüfer Yanya	04/21/2023 at 3:11 PM (CST)	

2. Searching and filtering

Data Explorer

Search...

Track	Album artist	Track start time	+
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Midnight Sun	Nilüfer Yanya	04/19/2023 at 10:01 AM (CST)	
Salty Road Dogs Victory Anthem	Alabaster DePlume	04/19/2023 at 10:06 AM (CST)	


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{
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  "username": "arthursbb",
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  "master_metadata_album_artist_name": "Alabaster DePlume",
  "master_metadata_album_album_name": "Salty Road Dogs Victory Anthem",
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  "episode_show_name": null,
  "spotify_episode_uri": null,
  "reason_start": "clickrow",
  "reason_end": "remote",
  "shuffle": false,
  "skipped": false,
  "offline": false,
  "offline_timestamp": 1681917002,
  "incognito_mode": false
},
```


RIIVERDANCE	Beyoncé	04/19/2023 at 5:31 PM (CST)	
Midnight Sun	Nilüfer Yanya	04/21/2023 at 3:11 PM (CST)	

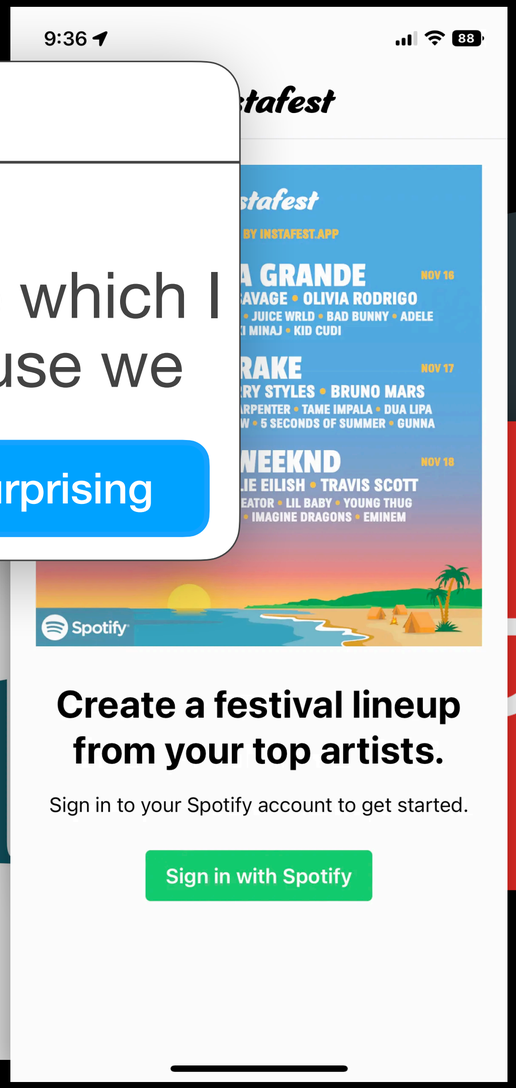
3. Data deletion/ modification in-band

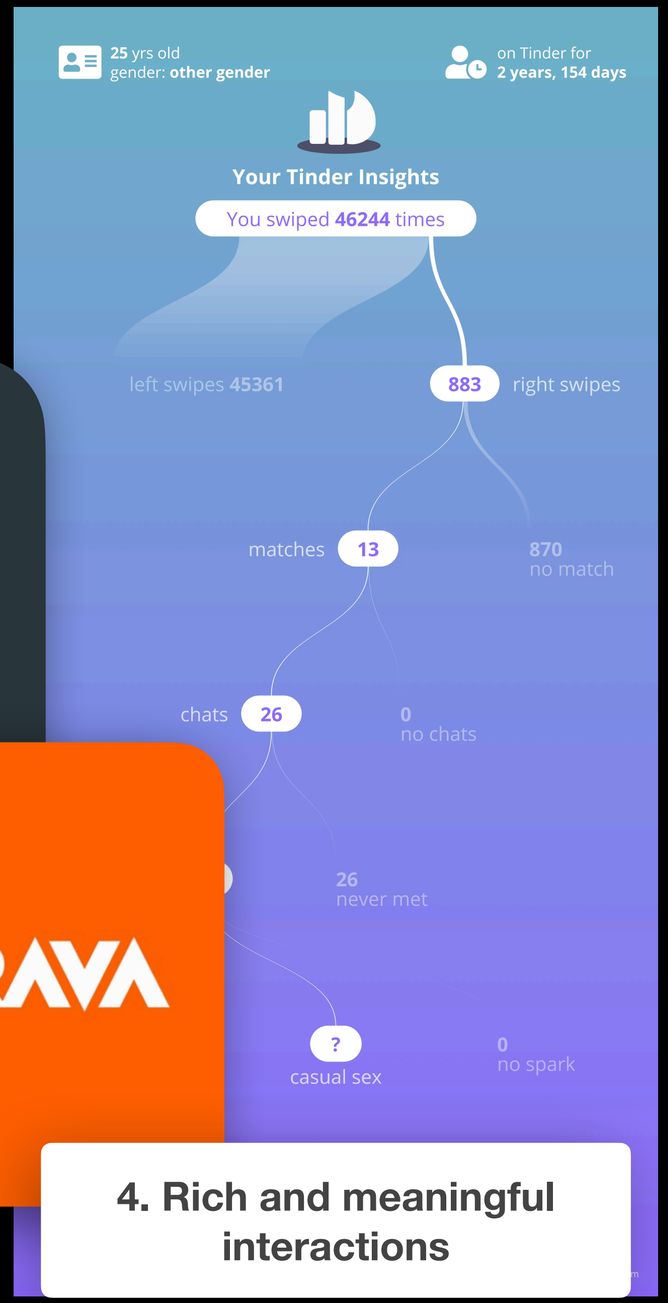
Would people even want to make DSARs?

P27-FB

"I love... [that] I found a childhood friend of mine which I put as brother in FB ’cause we were very close.”

surprising





4. Rich and meaningful interactions

Thanks!

Users want to know:

- 1. *What* data is being stored.
- 2. *How* data is being stored.
- 3. *How* data is being **used**.
- 4. *High-level takeaways* from the data.

Key data export features:

1. Definitions and explanations in-band.
2. Searching and filtering.
3. Data deletion/modification in-band.
4. Rich and meaningful interactions.

arthurborem@uchicago.edu

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