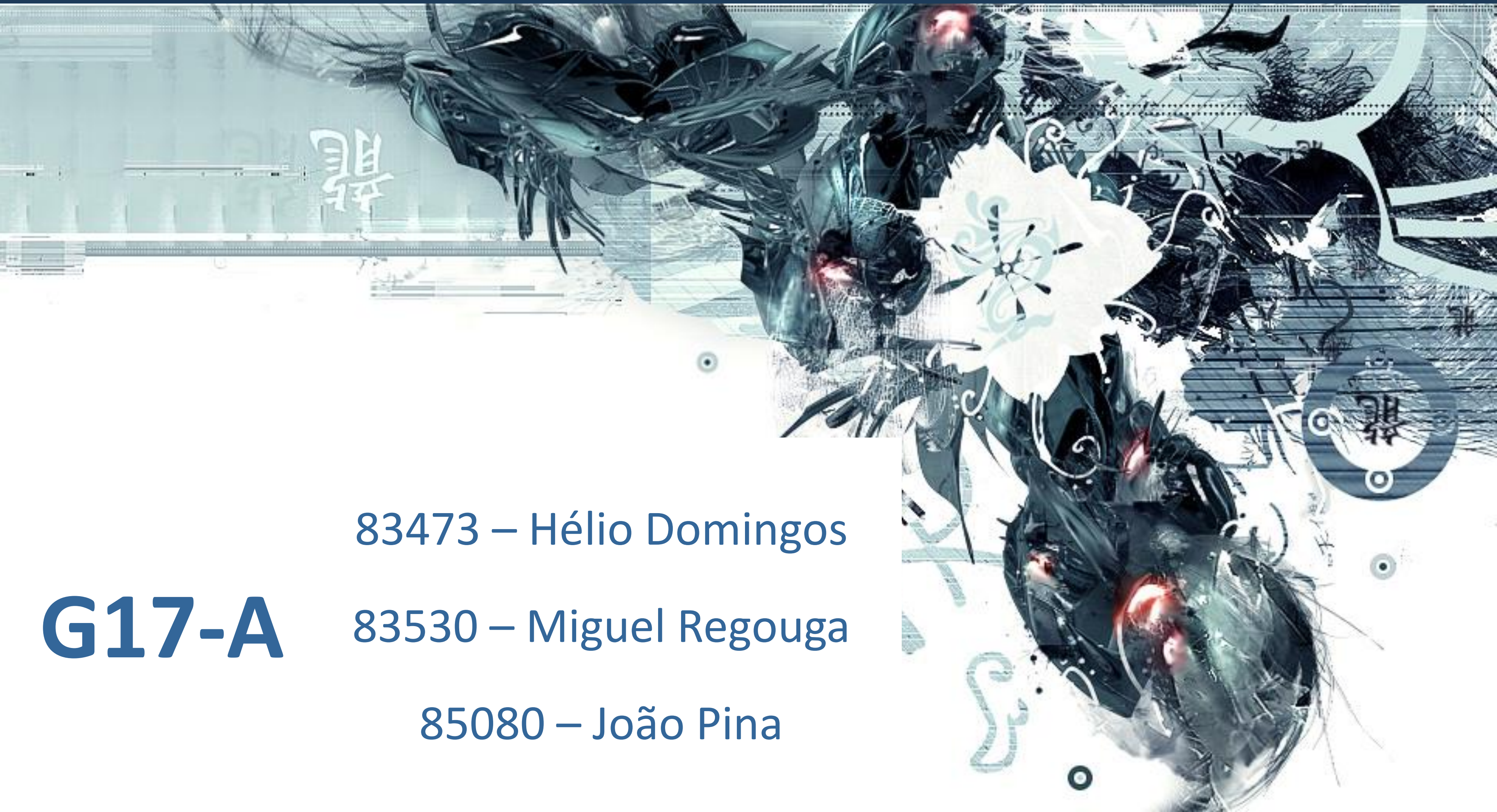
Information Visualization
Project Proposal and Dataset



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G17-A

01

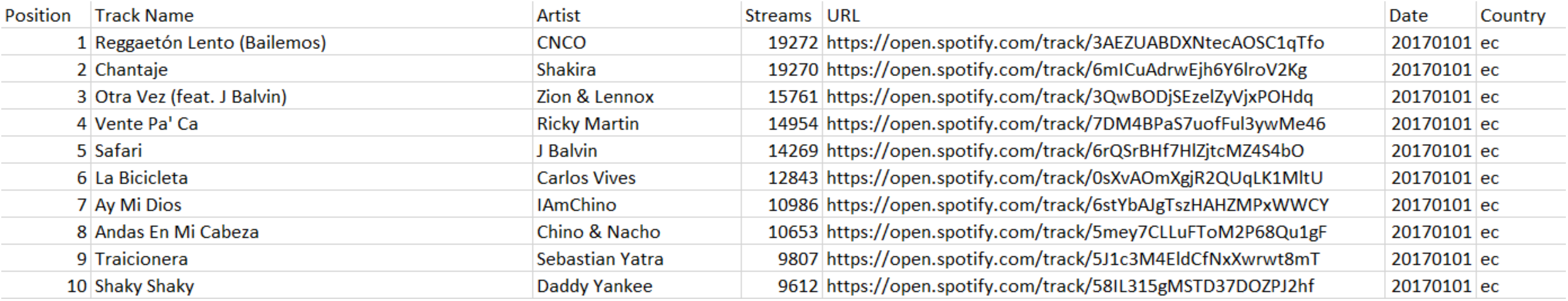
INITIAL DATASET

Initial Dataset

Description — Spotify Dataset

- *spotify.csv*
- Top 200 songs streamed each day, for each of the 53 countries Spotify is available in, from 2017/01/01 to 2018/01/09

Initial Dataset



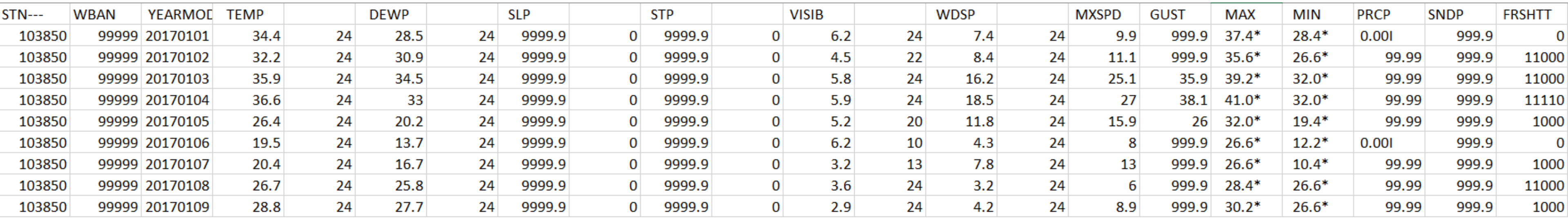
Position	Track Name	Artist	Streams	URL	Date	Country
1	Reggaetón Lento (Bailemos)	CNCO	19272	https://open.spotify.com/track/3AEZUABDXNtecAOSC1qTfo	20170101	ec
2	Chantaje	Shakira	19270	https://open.spotify.com/track/6mICuAdrwEjh6Y6lroV2Kg	20170101	ec
3	Otra Vez (feat. J Balvin)	Zion & Lennox	15761	https://open.spotify.com/track/3QwBODjSEzelZyVjxPOHdq	20170101	ec
4	Vente Pa' Ca	Ricky Martin	14954	https://open.spotify.com/track/7DM4BPaS7uofFul3ywMe46	20170101	ec
5	Safari	J Balvin	14269	https://open.spotify.com/track/6rQSrBHf7HlZjtcMZ4S4bO	20170101	ec
6	La Bicicleta	Carlos Vives	12843	https://open.spotify.com/track/0sXvAOmXgjR2QUqLK1MltU	20170101	ec
7	Ay Mi Dios	IAmChino	10986	https://open.spotify.com/track/6stYbAJgTszHAHZMPxWWCY	20170101	ec
8	Andas En Mi Cabeza	Chino & Nacho	10653	https://open.spotify.com/track/5mey7CLLuFToM2P68Qu1gF	20170101	ec
9	Traicionera	Sebastian Yatra	9807	https://open.spotify.com/track/5J1c3M4EldCfNxXwrwt8mT	20170101	ec
10	Shaky Shaky	Daddy Yankee	9612	https://open.spotify.com/track/58IL315gMSTD37DOZPJ2hf	20170101	ec

Initial Dataset

Description — Weather Dataset

- 53 *xx.csv* files
- xx = country code (pt, es, fr, it, …)
- 2017 daily weather conditions for the most populous city of each of the 53 countries Spotify is available in

Initial Dataset



STN---	WBAN	YEARMOD	TEMP		DEWP		SLP		STP		VISIB		WDSP		MXSPD	GUST	MAX	MIN	PRCP	SNDP	FRSHTT
103850	99999	20170101	34.4	24	28.5	24	9999.9	0	9999.9	0	6.2	24	7.4	24	9.9	999.9	37.4*	28.4*	0.00I	999.9	0
103850	99999	20170102	32.2	24	30.9	24	9999.9	0	9999.9	0	4.5	22	8.4	24	11.1	999.9	35.6*	26.6*	99.99	999.9	11000
103850	99999	20170103	35.9	24	34.5	24	9999.9	0	9999.9	0	5.8	24	16.2	24	25.1	35.9	39.2*	32.0*	99.99	999.9	11000
103850	99999	20170104	36.6	24	33	24	9999.9	0	9999.9	0	5.9	24	18.5	24	27	38.1	41.0*	32.0*	99.99	999.9	11110
103850	99999	20170105	26.4	24	20.2	24	9999.9	0	9999.9	0	5.2	20	11.8	24	15.9	26	32.0*	19.4*	99.99	999.9	1000
103850	99999	20170106	19.5	24	13.7	24	9999.9	0	9999.9	0	6.2	10	4.3	24	8	999.9	26.6*	12.2*	0.00I	999.9	0
103850	99999	20170107	20.4	24	16.7	24	9999.9	0	9999.9	0	3.2	13	7.8	24	13	999.9	26.6*	10.4*	99.99	999.9	1000
103850	99999	20170108	26.7	24	25.8	24	9999.9	0	9999.9	0	3.6	24	3.2	24	6	999.9	28.4*	26.6*	99.99	999.9	11000
103850	99999	20170109	28.8	24	27.7	24	9999.9	0	9999.9	0	2.9	24	4.2	24	8.9	999.9	30.2*	26.6*	99.99	999.9	1000

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SELECTED / DERIVED DATA

Derived data

weather.csv

was generated from all the 53 xx.csv files (xx = country code, like pt — Portugal, es — Spain…), and contains all the processed information about the weather conditions in each country in 2017;

processed_spotify.csv

was generated from spotify.csv and contains mostly the same information, but processed in order to uniformize data;

Derived data

full_dataset.csv

was generated from weather.csv and spotify.csv and contains all the processed information about the weather conditions and the most streamed songs in each day;

songs_temp.csv

was derived from full_dataset.csv and contains all the information about the songs, and it is sorted by streams and temperature.

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DATA ABSTRACTION

Data abstraction

Attribute	Tables where it appears	Type	Semantics
Date	weather.csv, processed_spotify.csv, full_dataset.csv, songs_temp.csv	Ordinal	The date in the format YYYYMMDD, corresponding to the day measured.
Temperature	weather.csv, full_dataset.csv, songs_temp.csv	Ordinal	The mean temperature (in Celsius) for the day measured.
Visibility	weather.csv, full_dataset.csv	Ordinal	The mean visibility (in kilometres) for the day measured.
Wind Speed	weather.csv, full_dataset.csv	Ordinal	The mean wind speed (in kilometres per hour) for the day measured.
Precipitation	weather.csv, full_dataset.csv	Ordinal	The total precipitation reported in the day (in centimetres).

Data abstraction

Attribute	Tables where it appears	Type	Semantics
Fog	weather.csv, full_dataset.csv	Ordinal	An indicator for fog — if its 1, that day had fog; if its 0, it didn't.
Rain	weather.csv, full_dataset.csv	Ordinal	An indicator for rain — if its 1, it rained that day; if its 0, it didn't.
Snow	weather.csv, full_dataset.csv	Ordinal	An indicator for snow — if its 1, it snowed that day; if its 0, it didn't.
Hail	weather.csv, full_dataset.csv	Ordinal	An indicator for hail — if its 1, it hailed that day; if its 0, it didn't.
Thunder	weather.csv, full_dataset.csv	Ordinal	An indicator for thunder — if its 1, there were thunders that day; if it's 0, there weren't.
Tornado	weather.csv, full_dataset.csv	Ordinal	An indicator for tornado — if its 1, there were tornados that day; if it's 0, there weren't.

Data abstraction

Attribute	Tables where it appears	Type	Semantics
PT Country	weather.csv, processed_spotify.csv, full_dataset.csv, songs_temp.csv	Nominal	The country associated to the weather and music data.
♫ Track name	processed_spotify.csv, full_dataset.csv, songs_temp.csv	Nominal	The name of the song.
🎤 Artist	processed_spotify.csv, full_dataset.csv, songs_temp.csv	Nominal	The song's artist.
# Streams	processed_spotify.csv, full_dataset.csv, songs_temp.csv	Ordinal	The total number of streams on Spotify, on a given day, on a given country.
🌐 URL	processed_spotify.csv, full_dataset.csv, songs_temp.csv	Nominal	The URL link to directly play a given song on Spotify.

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DATASET PROCESSING

Dataset processing

Dataset cleaning description

Weather dataset

- Removed excessive data not needed to our visualization (sea level pressure, dew point, station ID…)
- Added country code
- Merged all 53 .csv files into one
- Created a column for each indicator

Dataset processing

Dataset cleaning description

Spotify dataset

- Normalized the date format (to match the weather dataset)
- Reduced to top 50 (instead of top 200)
- Merged with weather dataset

Dataset processing

Problems found:

Spotify only ranks if streams > 1000

- Although we reduced from top 200 to top 50, there are a few smaller countries (such as Luxembourg) that don’t have as many data available as other countries. In the minimum, top 15

Spotify’s API was down during 3 days

- Removed the lines corresponding to those 3 days, since there is no data available

Dataset processing

Problems found:

Songs removed from Spotify

- In a very rare case, we found out that a song which was on the top 50 was removed from the platform - so did we from our dataset

Weather indicators

- Our weather dataset had a number with 6 digits, corresponding to various weather factors (rain, snow, fog…), but we couldn’t access them directly – we created a new column for each digit

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MAPPING

Mapping

On a sunny day, which song is the most listened worldwide?

This can be answered by checking the first line in *sunny_top.csv* as the most listened songs on a sunny day are on top of this table

If it’s raining, what artists do people listen the most in Ecuador?

This can be answered by checking the first lines in *raining_ecuador.csv* as the most listened artists on a raining day on Ecuador are on top of this table

Mapping

In what weather conditions is *"Despacito"* most likely to be heard?

By checking the *despacito_indicators.csv*, the first lines correspond to the weather conditions where people listened more to Despacito

Between Portugal (winter) and Australia (summer), where was *"All I Want For Christmas Is You"* most streamed during Christmas?

This can be checked by analyzing the *chistmas_eve.csv* file

Mapping

How likely is “*Let It Snow*” to be streamed during snow days?

This can be checked by analyzing the *letitsnow.csv* file