MUSIC LISTENING ANALYSIS

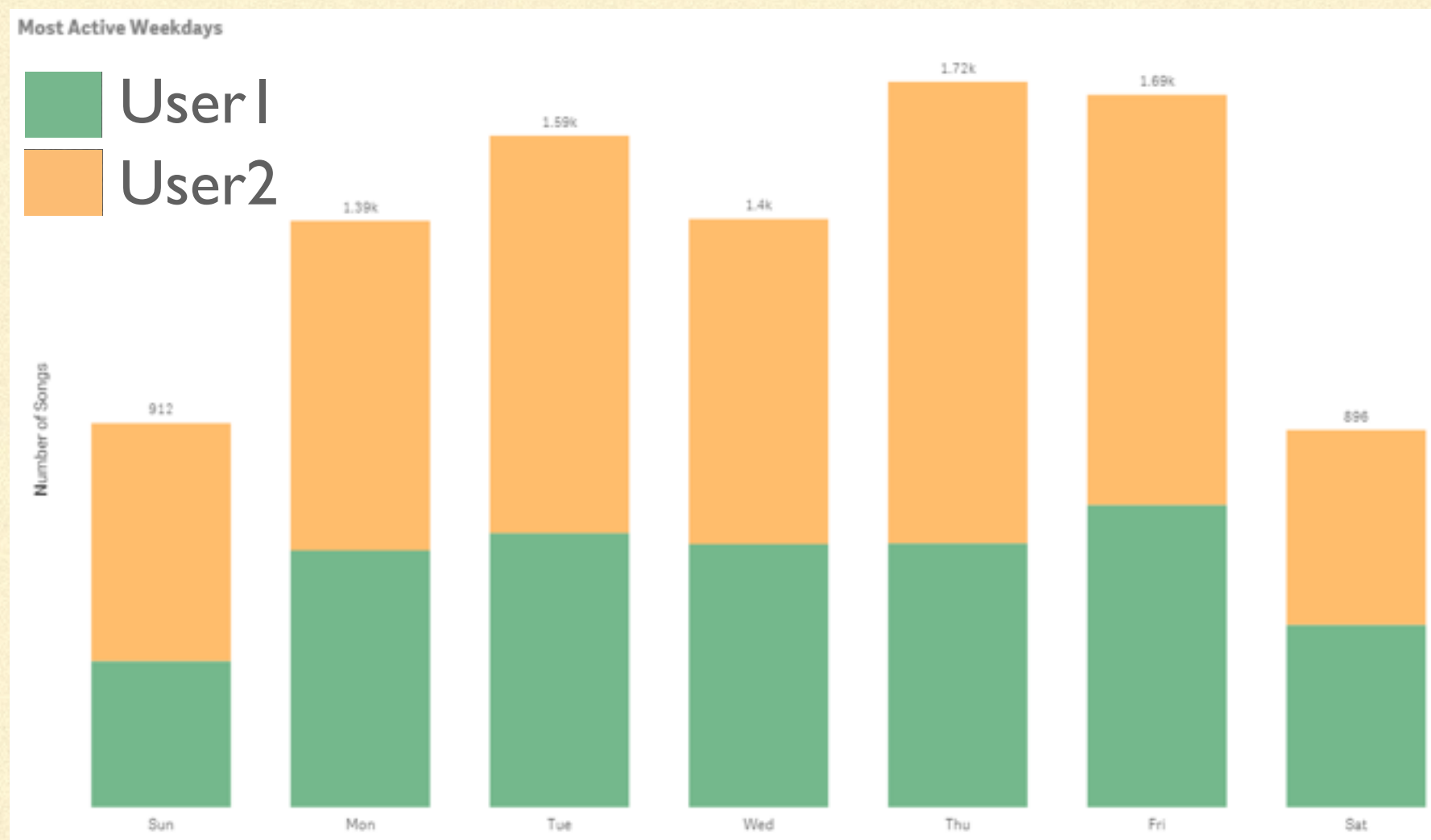Introduction to Visualization Dashboard

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DATASET

- Listening history of **User1** and **User2** during 2015-06-30 and 2015-11-01, about 9.61k records in total

- Contents

  - Time, devices and locations

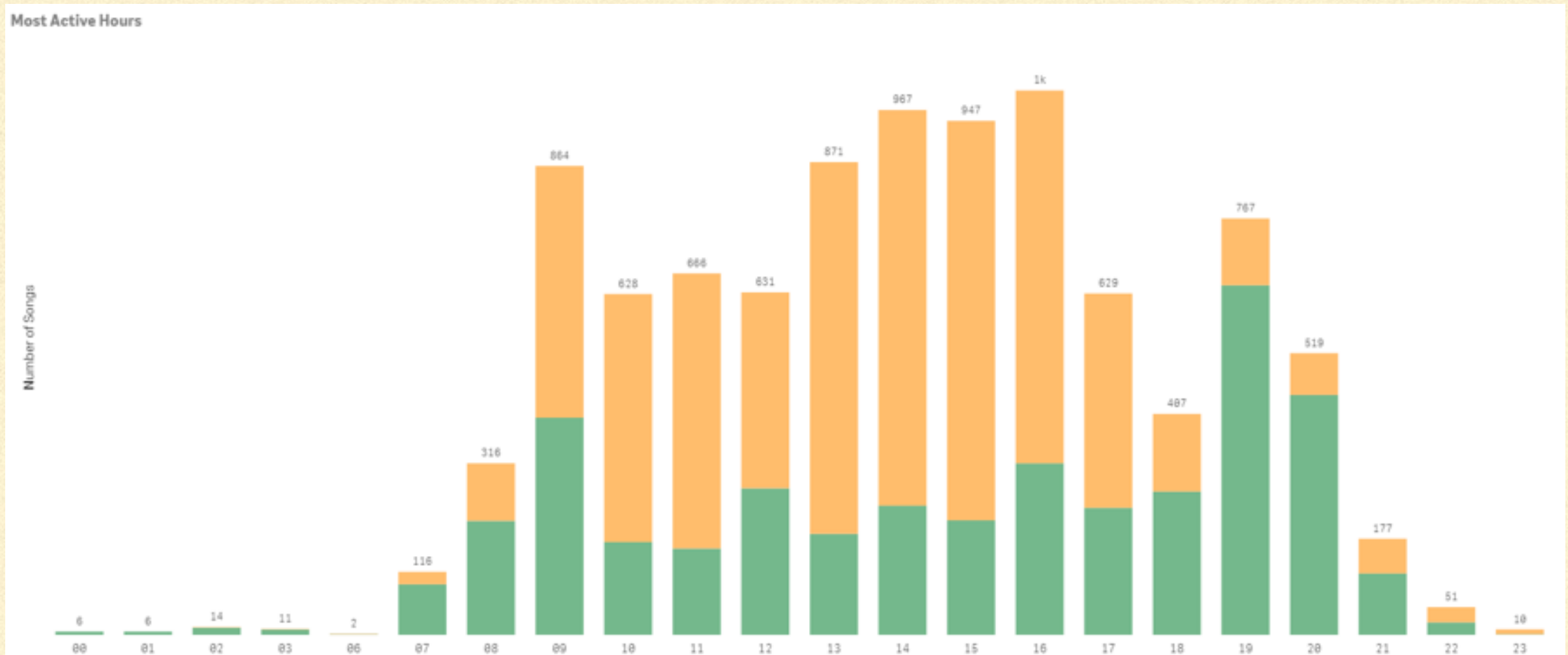 - Sources, artists, albums, songs and scores of songs

USER 1

WHEN

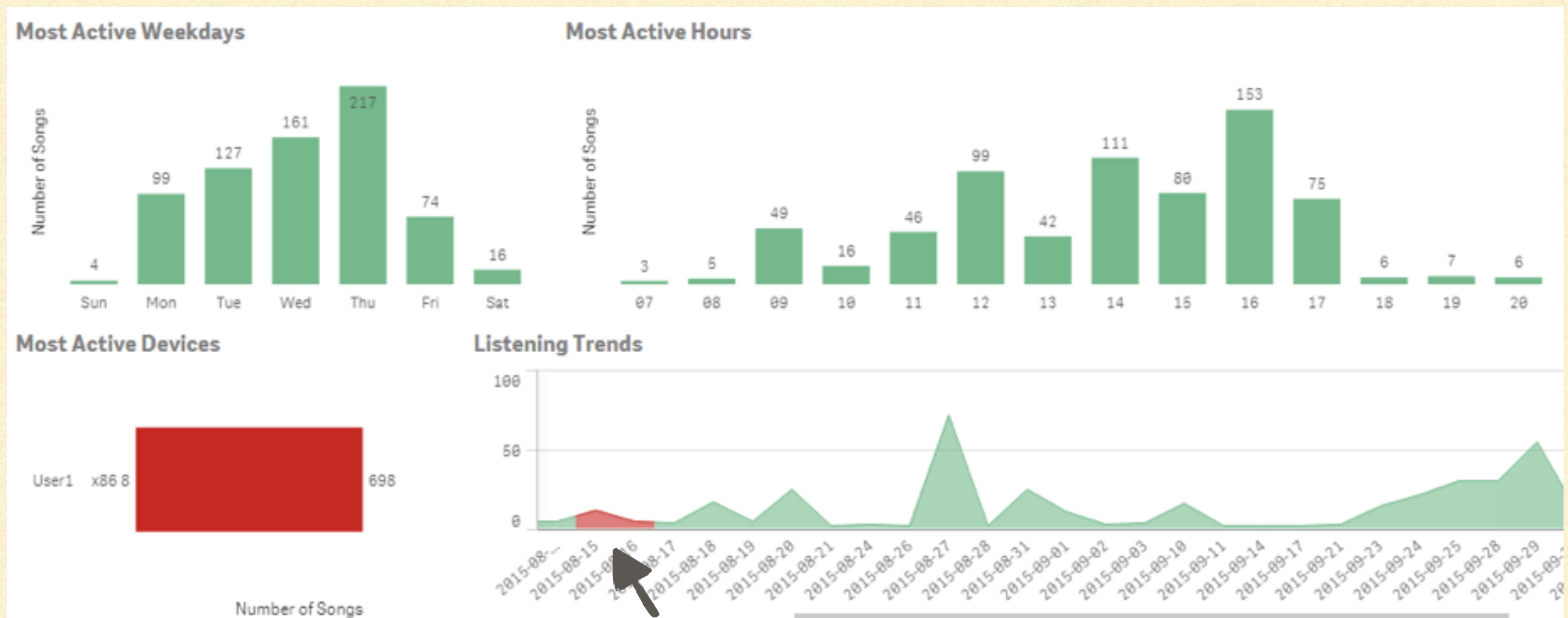- Both User1 and User2 like listening on workdays

WHEN

- User1 listens more music on the way to work or after coming back to home; while User2 like listening during work
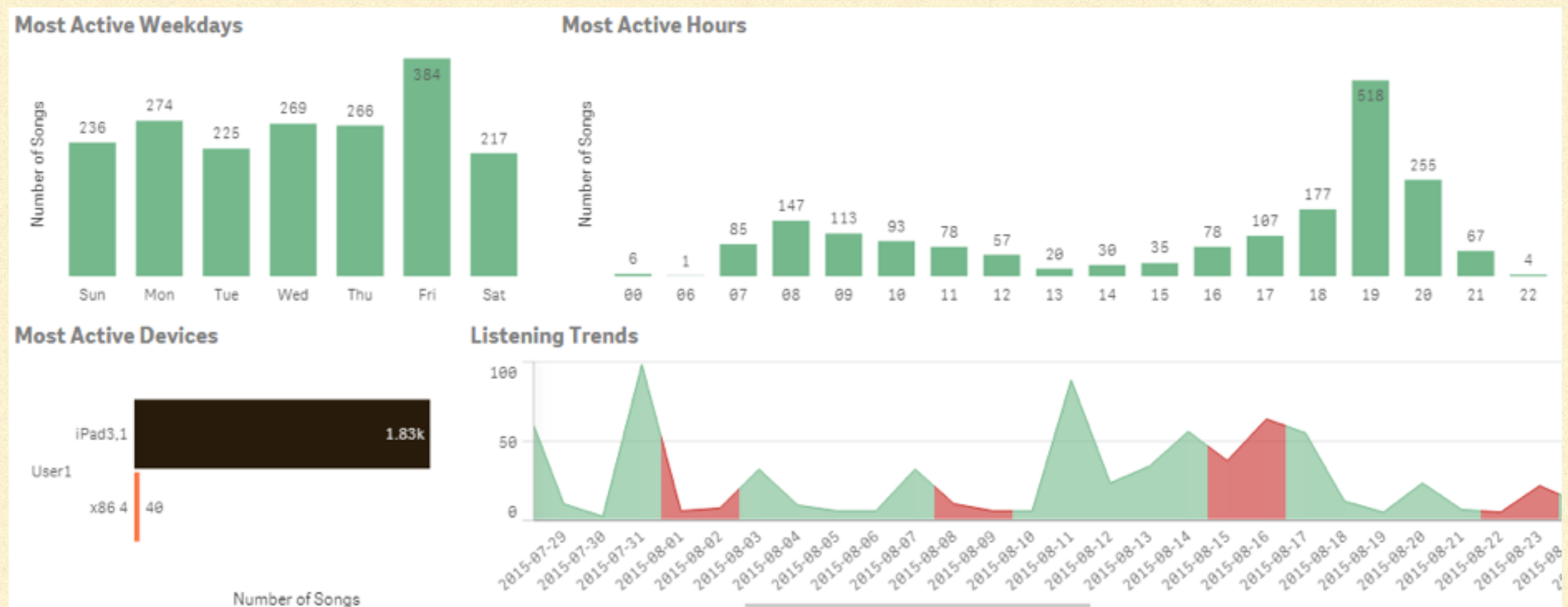
USER1 - HOW

- x86 8 is User1's working device

Most Active Weekdays
(Number of Songs by day: Sun 4, Mon 99, Tue 127, Wed 161, Thu 217, Fri 74, Sat 16)

Most Active Hours
(Number of Songs by hour: 07 = 3, 08 = 5, 09 = 49, 10 = 16, 11 = 46, 12 = 99, 13 = 42, 14 = 111, 15 = 80, 16 = 153, 17 = 75, 18 = 6, 19 = 7, 20 = 6)

Most Active Devices
User1 x86 8 698
Number of Songs
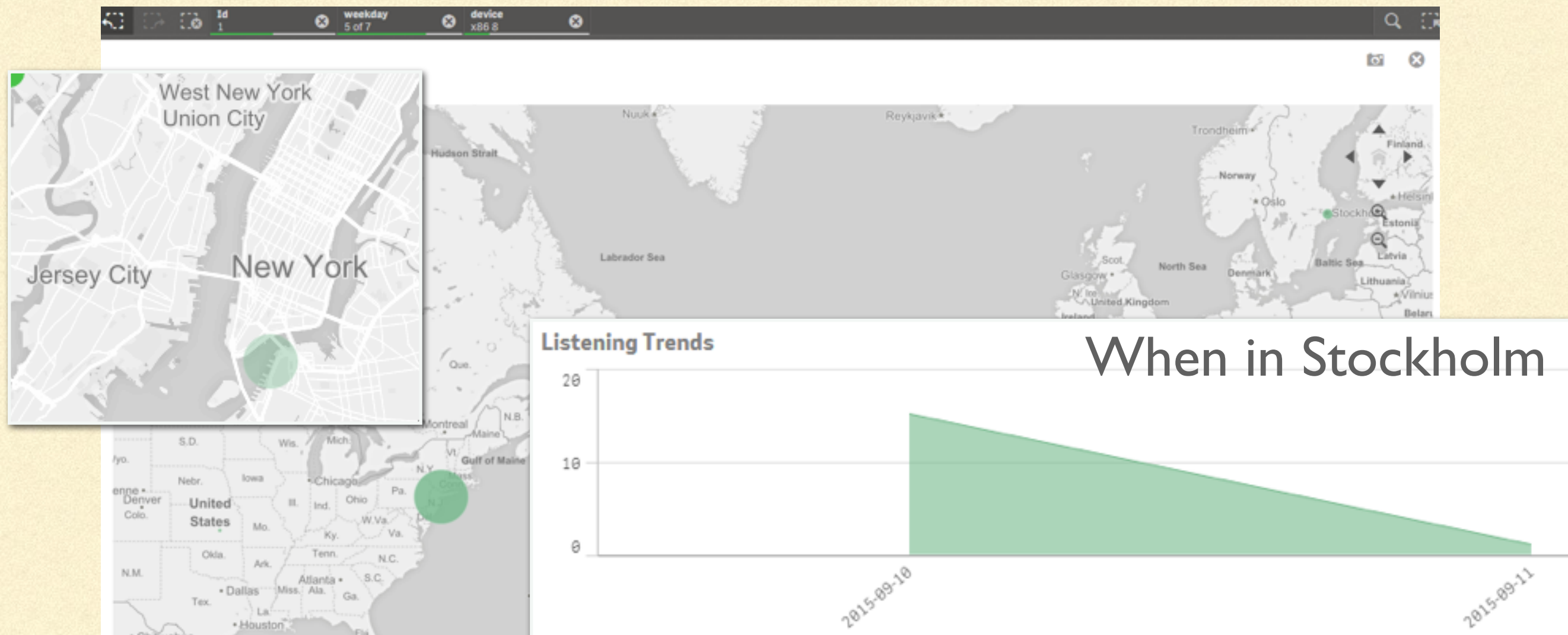
Listening Trends

Red represents weekends

USER1 - HOW

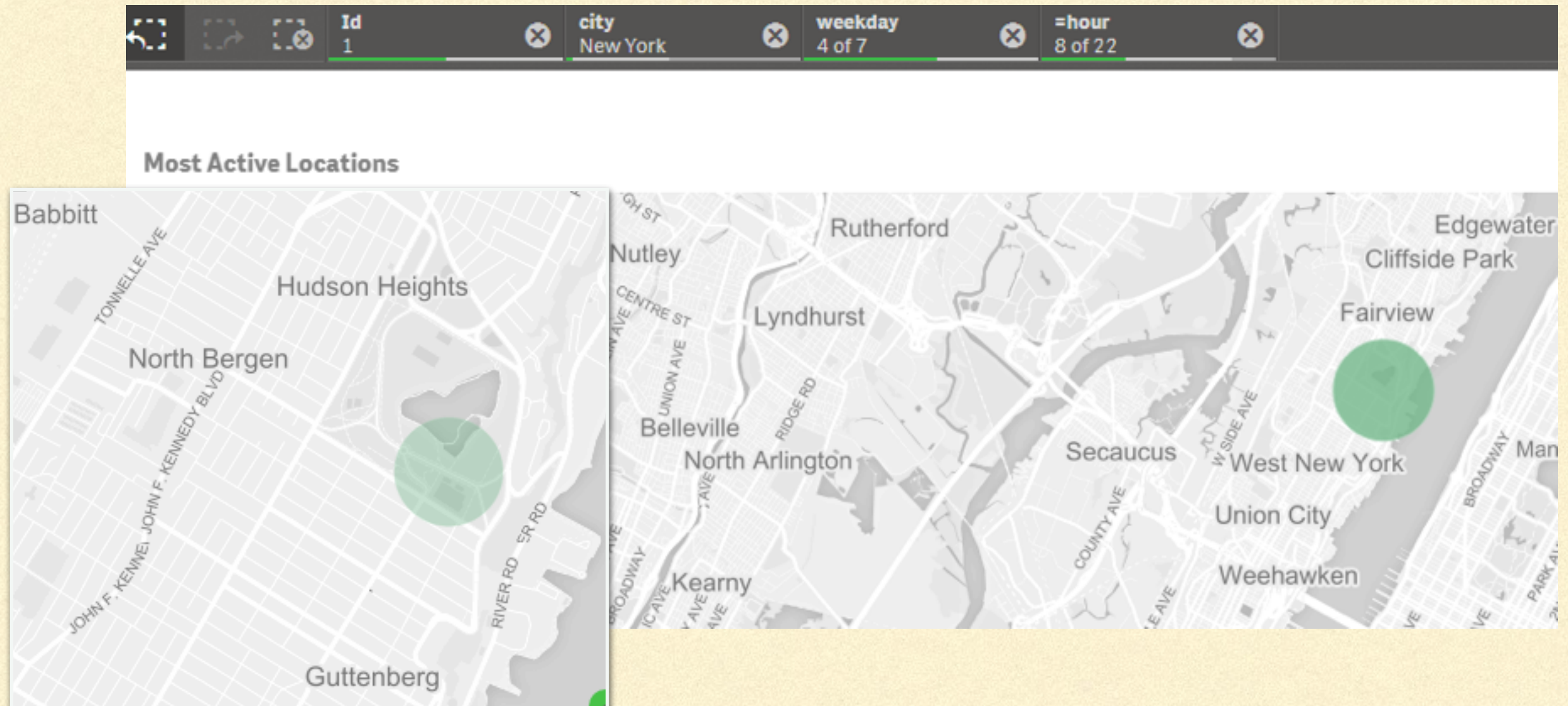■ iPad3.1 and x86 4 are User1's entertainment devices

USER1 - WHERE
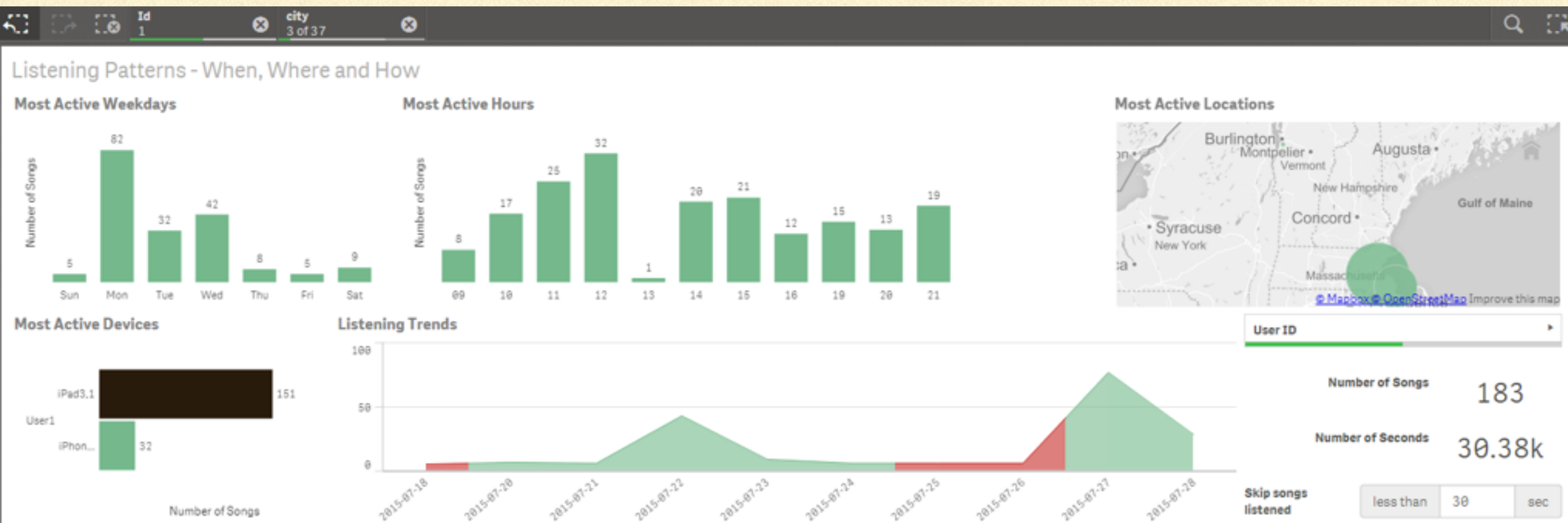
- User1's working places: New York and Stockholm

USER1 - WHERE

- User1 needs to take bus to work

USER1 - WHERE

- User1 might travel during 2015-07-18 and 2015-07-28

  - Working device x86 8 was not used

  - Itinerary: Duxbury -> Shelburne -> Boston

USER1 - WHERE

- User1 might bring his/her iPhone and x86 8 to Stockholm during 2015-09-8 and 2015-09-12

USER1 - WHERE
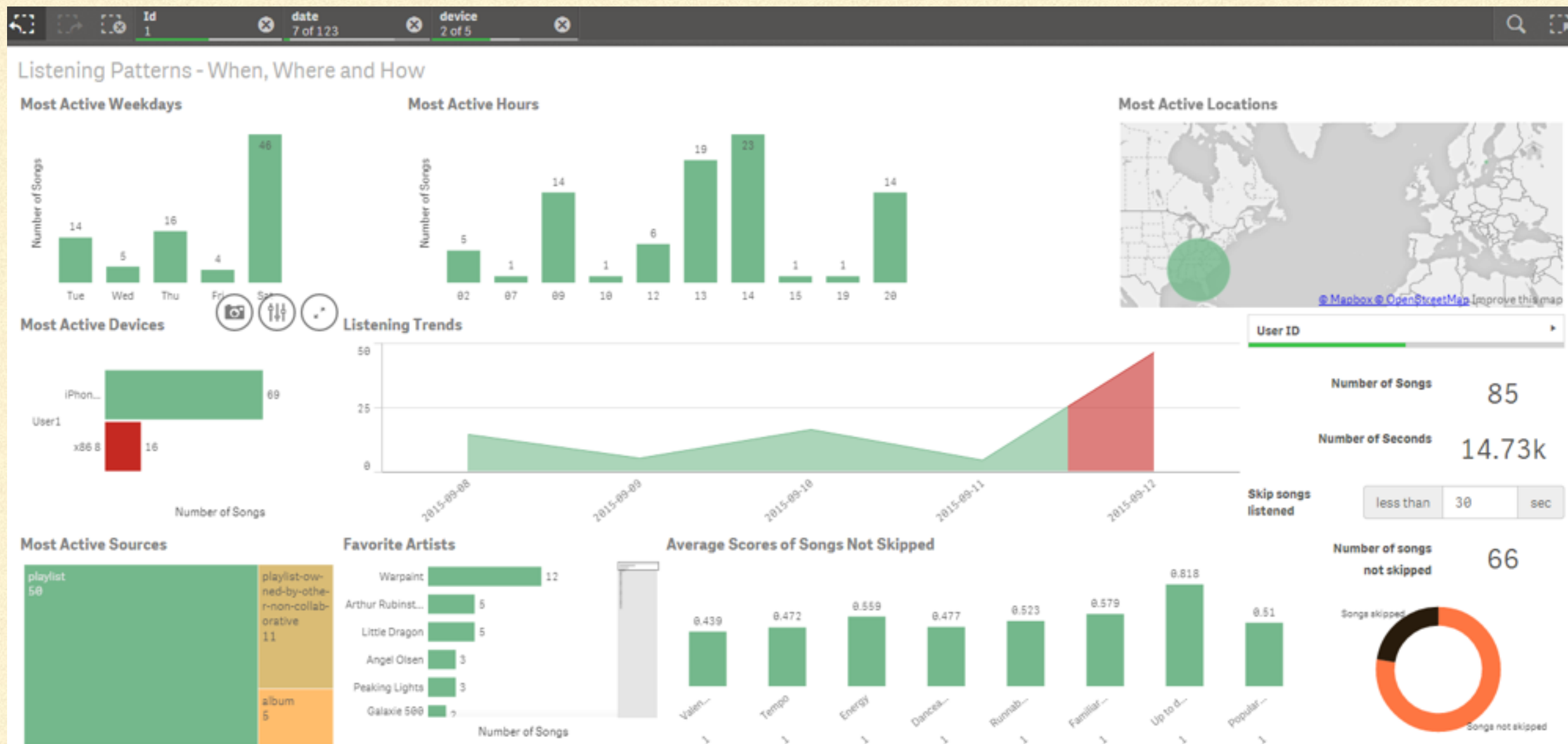
- User1's Spotify account might be shared

  - During 2015-09-8 and 2015-09-12, iPad3 might be used by another person

  - The styles of musics listened via iPhone and via iPad are very different
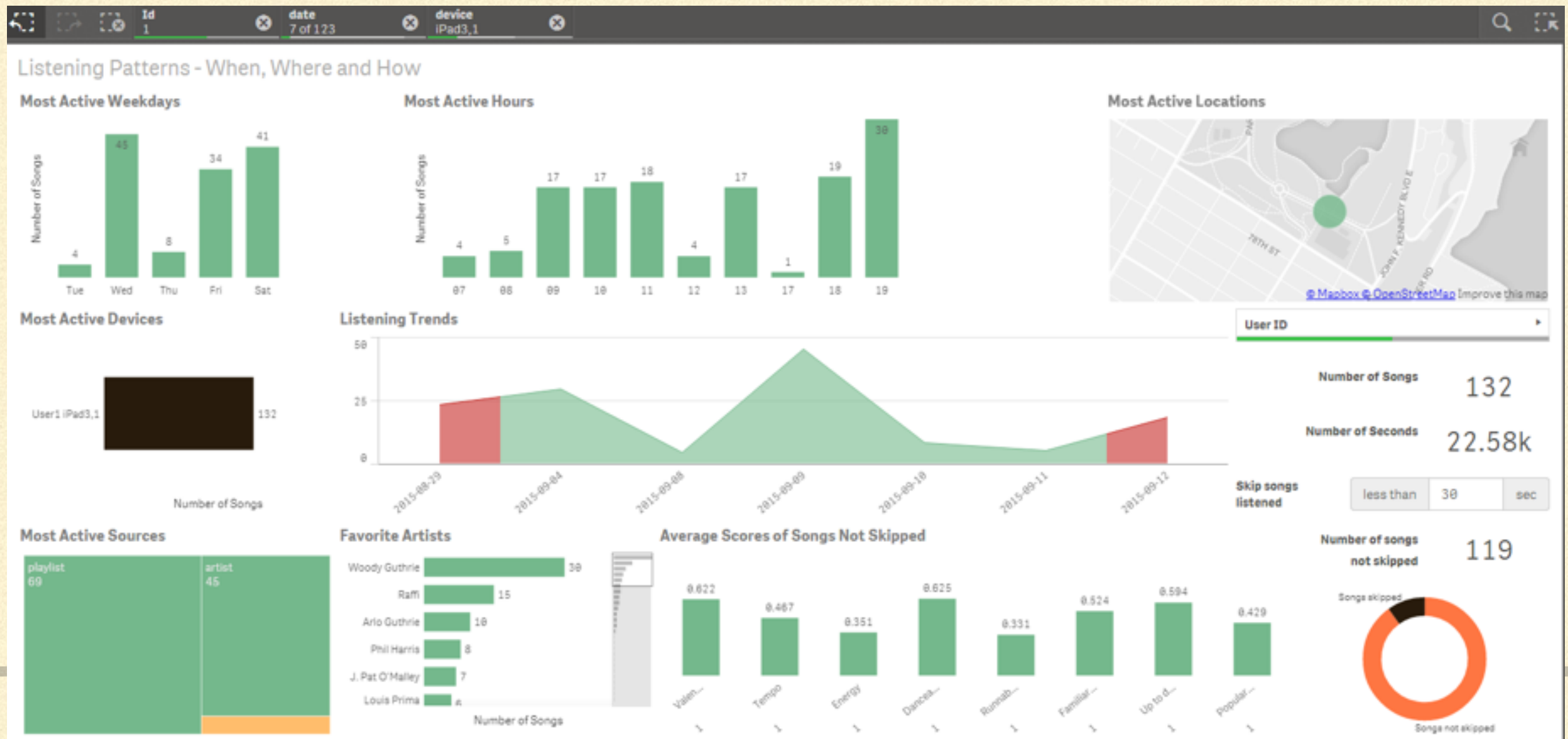
WHERE

- When having trips to places closing to New York, User1 only brought iPhone

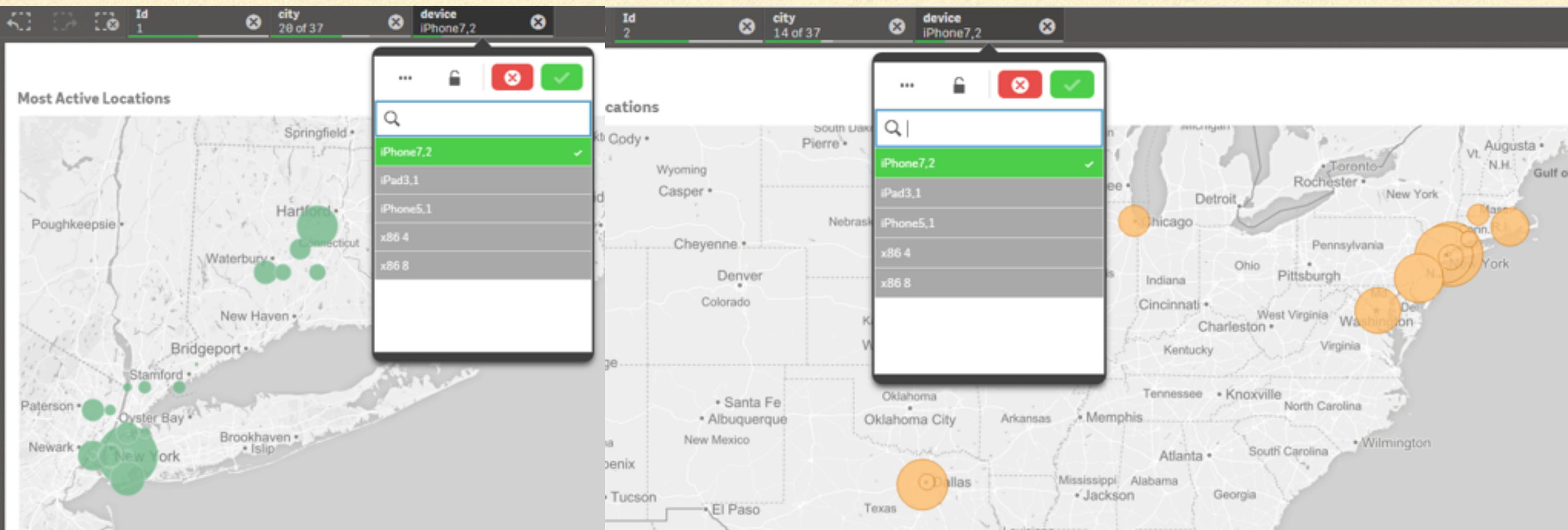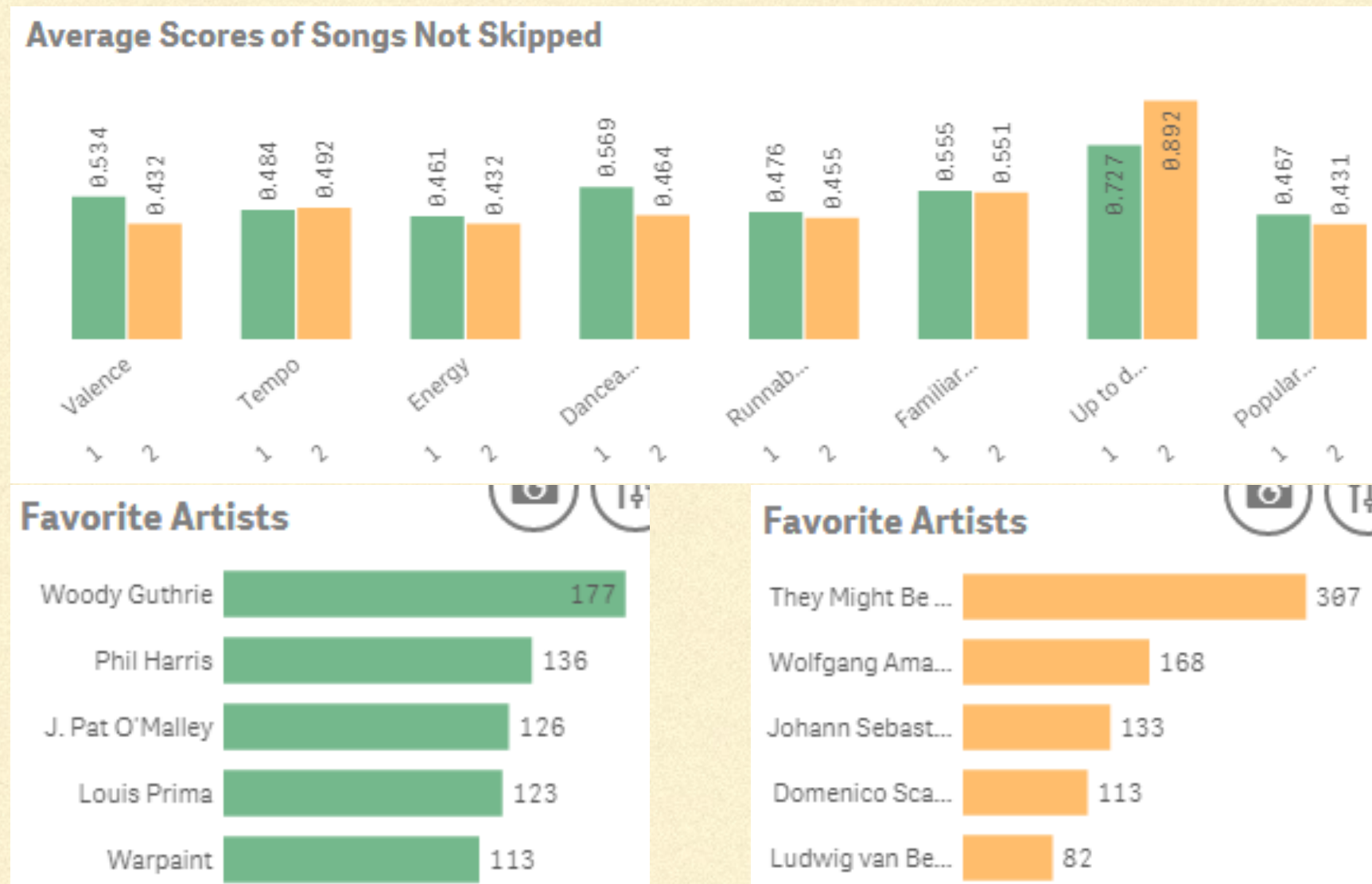- When traveling, User2 only brought iPhone

WHAT

- User1 likes songs suitable for dancing, while User2 likes some new songs

Average Scores of Songs Not Skipped

	Valence		Tempo		Energy		Dancea...		Runnab...		Familiar...		Up to d...		Popular...	
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
	0.534	0.432	0.484	0.492	0.461	0.432	0.569	0.464	0.476	0.455	0.555	0.551	0.727	0.892	0.467	0.431

* Up to date score is the normalized year (1940-2015).

Favorite Artists

Woody Guthrie	177
Phil Harris	136
J. Pat O'Malley	126
Louis Prima	123
Warpaint	113

Favorite Artists

They Might Be ...	307
Wolfgang Ama...	168
Johann Sebast...	133
Domenico Sca...	113
Ludwig van Be...	82

USER1 - WHAT

WORK

Most Active Sources

playlist-owned-by-other-non-collaborative
225

album
90

artist
87

radio
47

Favorite Artists

The Orbweavers	24
Peaking Lights	20
Chastity Belt	19
Broken Social ...	17
Julia Holter	14
Bonobo	13

Number of Songs

Average Scores of Songs Not Skipped

Valen...	Tempo	Energy	Dancea...	Runnab...	Familiar...	Up to d...	Popular...
0.437	0.504	0.574	0.516	0.568	0.541	0.9	0.484
1	1	1	1	1	1	1	1

HOME

Most Active Sources

playlist
848

album
326

artist
169

Favorite Artists

Woody Guthrie	177
Phil Harris	98
J. Pat O'Malley	88
Louis Prima	86
Simon & Garfu...	77
Sterling Hollo...	75

Number of Songs

Average Scores of Songs Not Skipped

Valen...	Tempo	Energy	Dancea...	Runnab...	Familiar...	Up to d...	Popular...
0.577	0.469	0.369	0.584	0.389	0.554	0.618	0.425
1	1	1	1	1	1	1	1

OUTDOOR RELAX

Most Active Sources

playlist
342

album
112

Favorite Artists

Warpaint	47
Bob Dylan	40
Grateful Dead	38
Raffi	36
J. Pat O'Malley	20
Louis Prima	18

Number of Songs

Average Scores of Songs Not Skipped

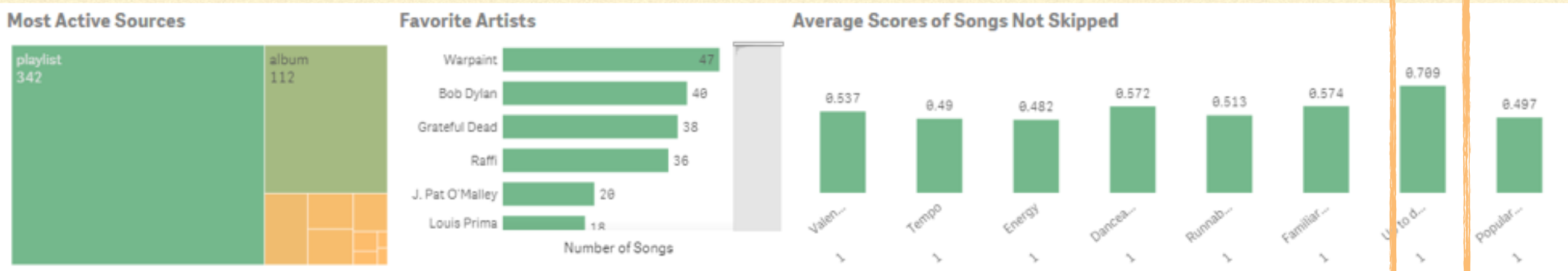| Valen...	Tempo	Energy	Dancea...	Runnab...	Familiar...	Up to d...	Popular...
0.537	0.49	0.482	0.572	0.513	0.574	0.709	0.497
1	1	1	1	1	1	1	1

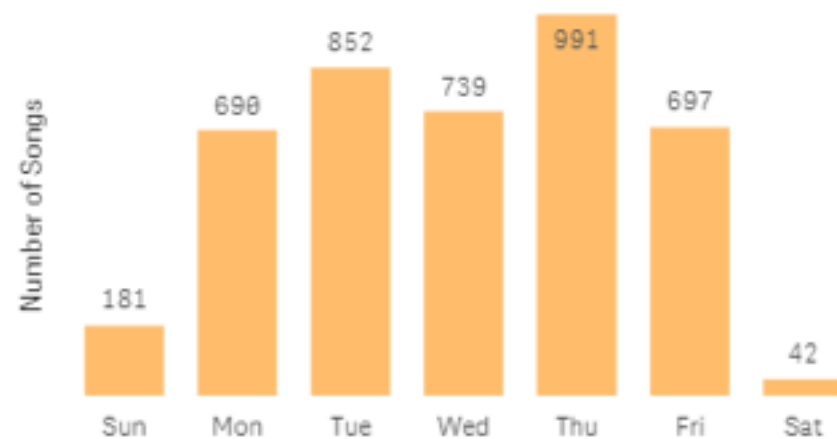# USER 2

USER2 - HOW

- x86 8 is User2's working device, which is the same as User1
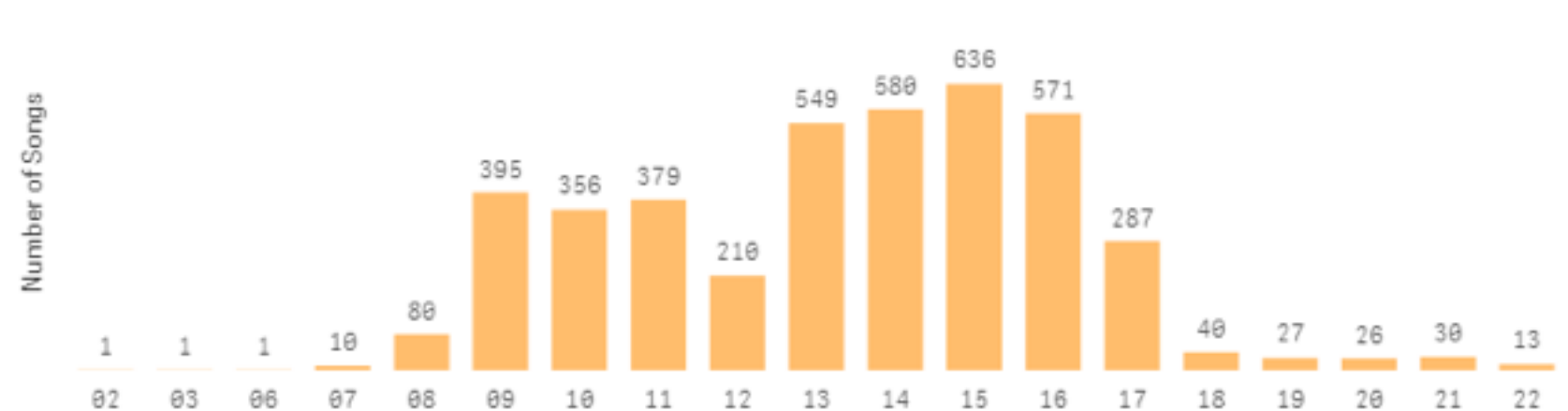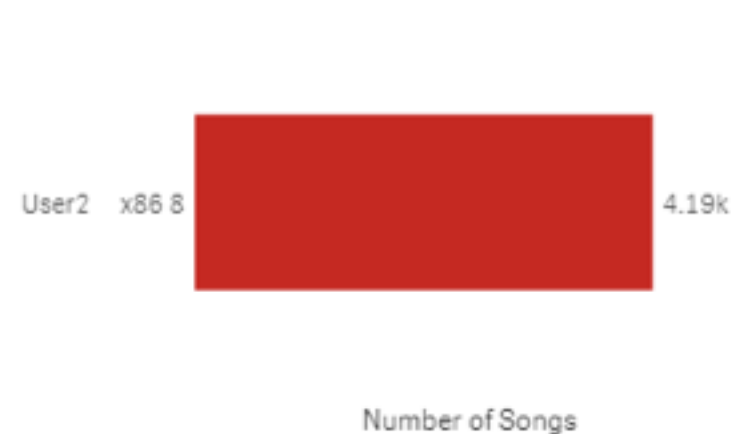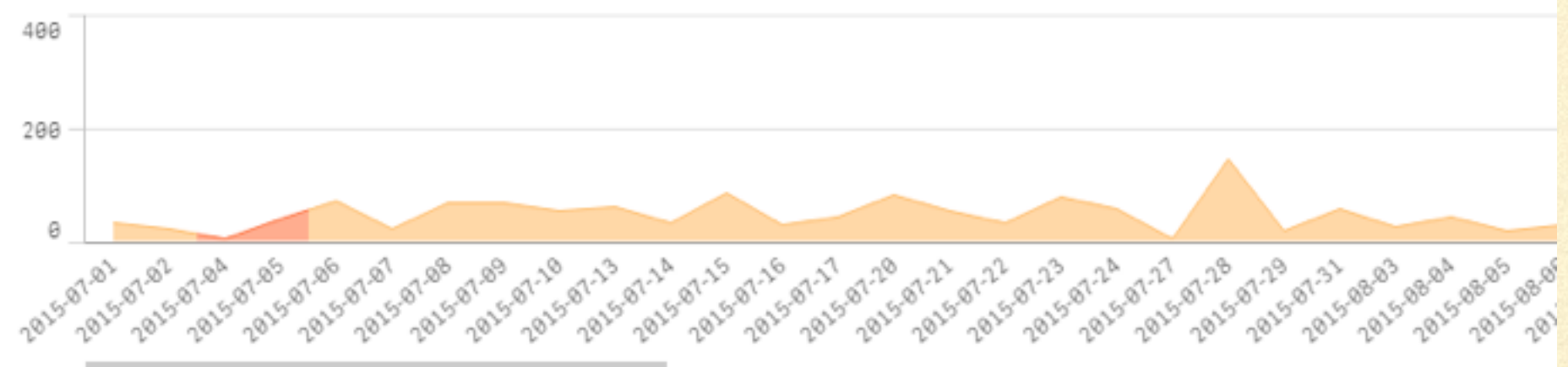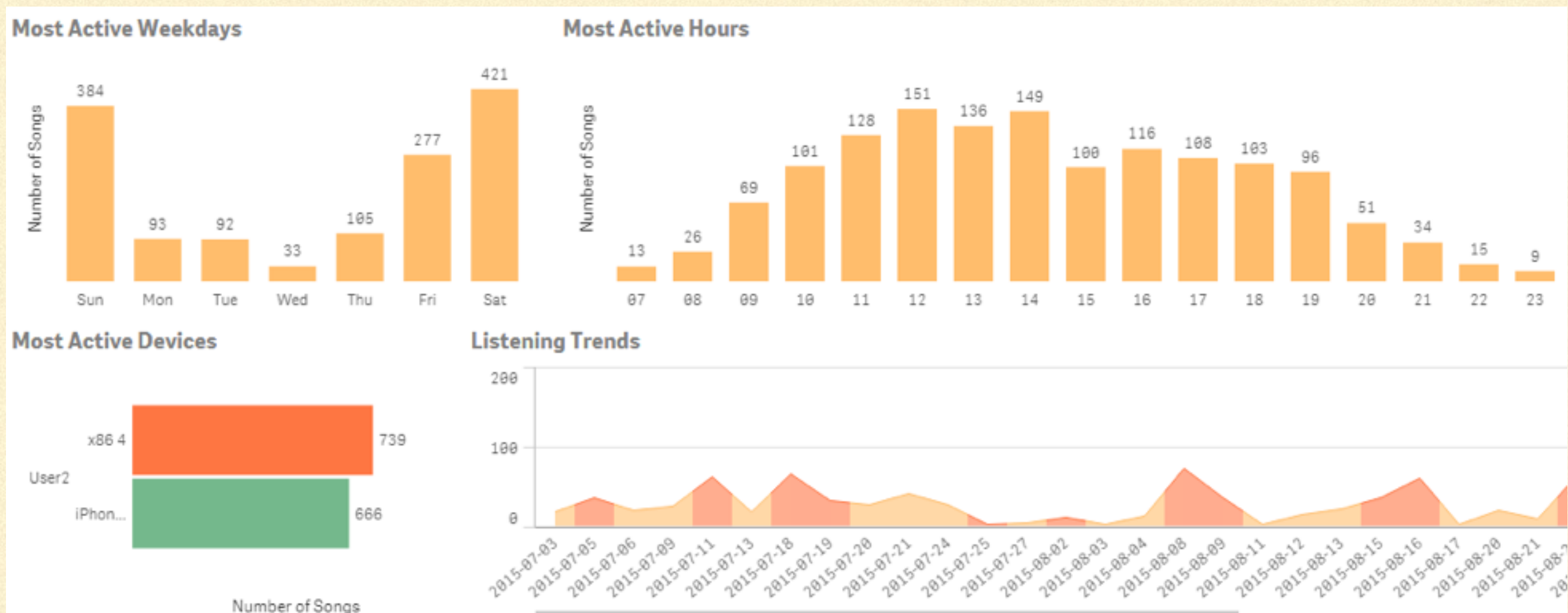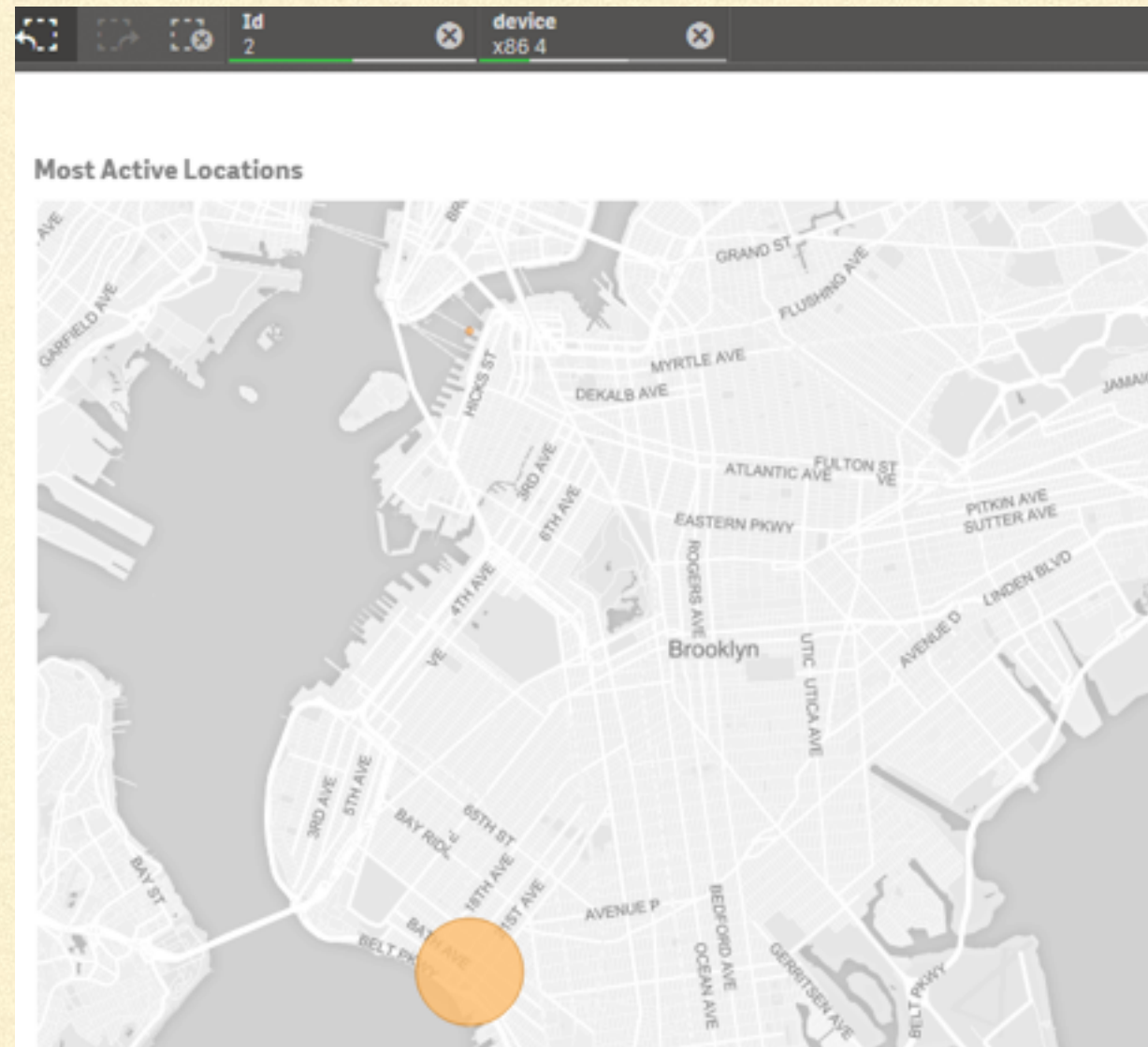
USER2 - HOW

- User2 has a x86 4 device (OS system) as personal laptop. He / she does not use Spotify on iPad
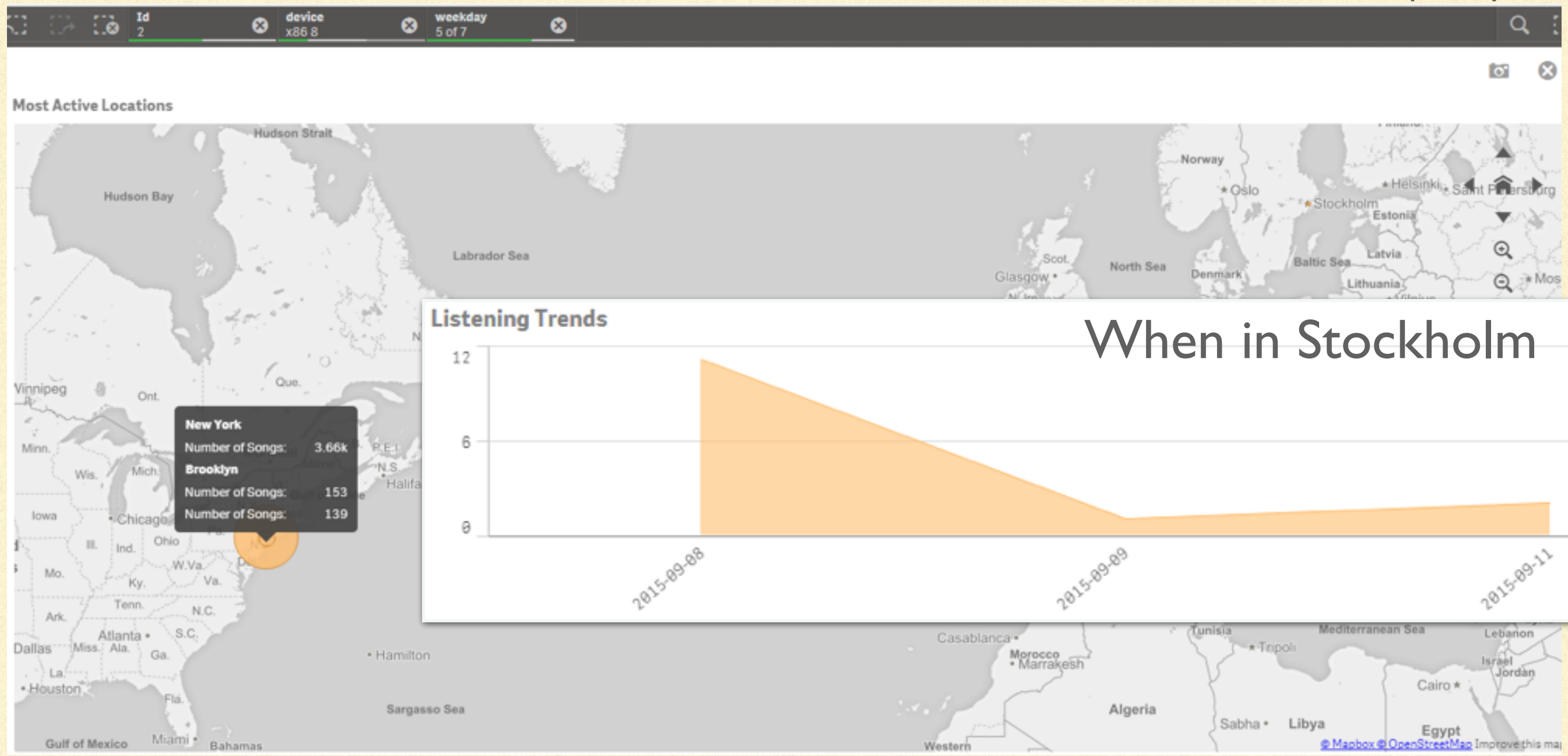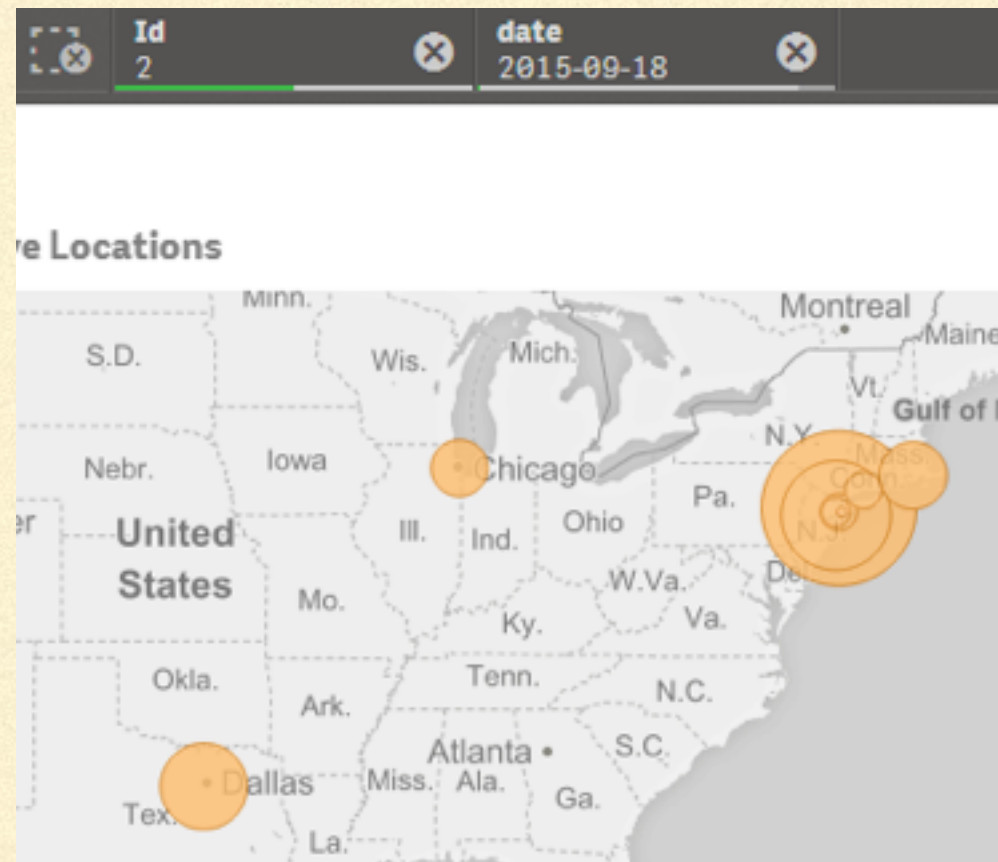
USER2 - WHERE

- User2 lives in Brooklyn

USER2 - WHERE

- User2 also works in New York and Stockholm, but he / she works from home more frequently
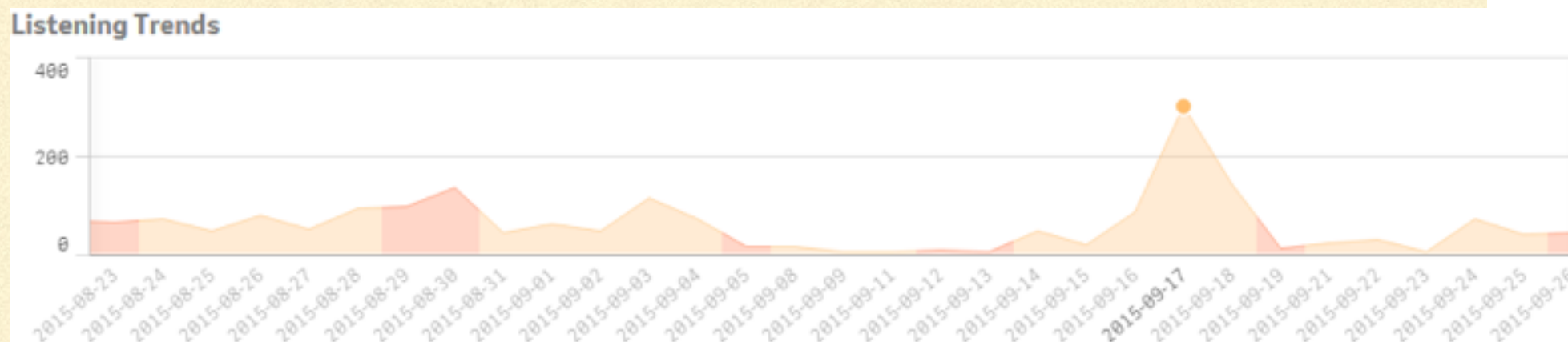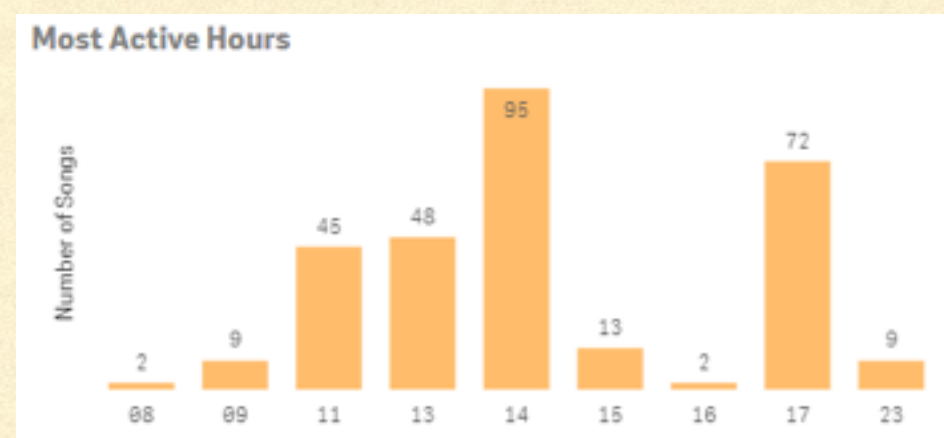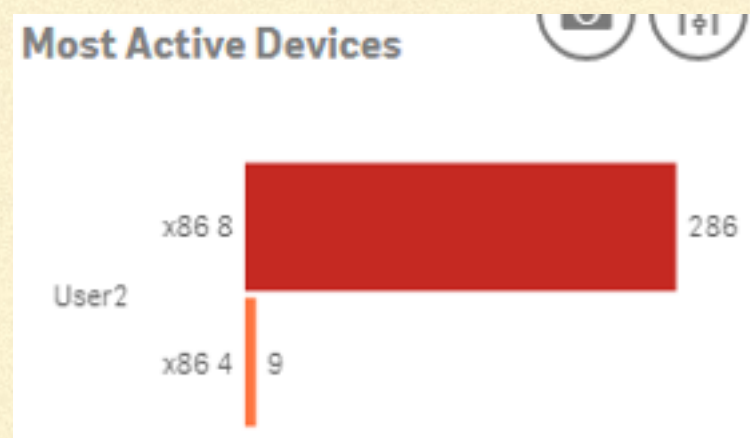
USER2 - WHERE

- User2 used Spotify at many locations on 2015-09-18

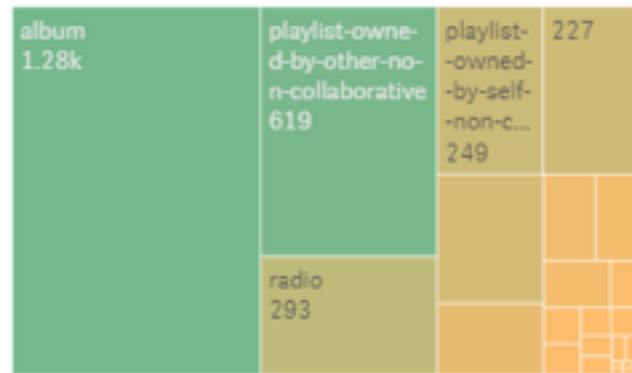 - The user might use VPN

  - Other reasons?

USER2 - WHAT

- The skipping rate is very high on 2015-09-17

    - User2 might test Spotify or check a lot of Spotify player embedded on websites
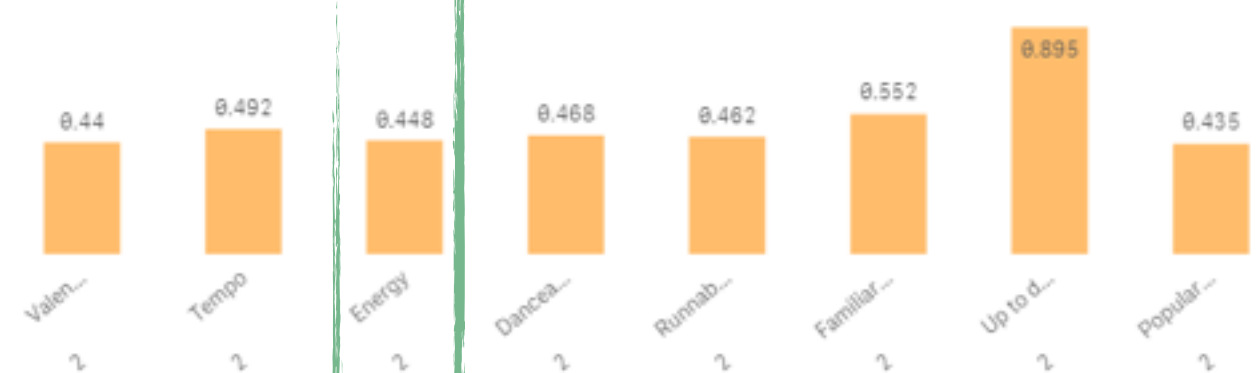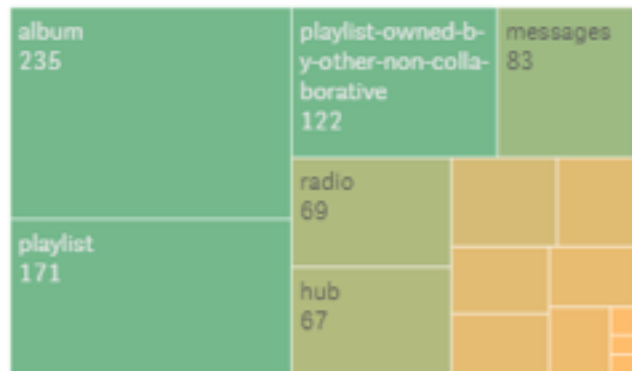
USER2 - WHAT

WORK

Most Active Sources
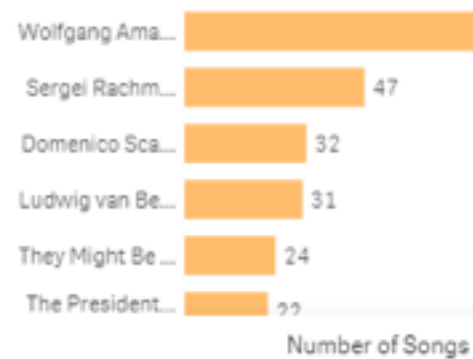
album 1.28k	playlist-owned-by-other-non-collaborative 619	playlist-owned-by-self-non-c... 249
		227
	radio 293	

Favorite Artists

Artist	Number of Songs
They Might Be ...	250
Johann Sebast...	113
Domenico Sca...	81
Explosions In ...	68
Wolfgang Ama...	68
Death Cab for ...	55

Average Scores of Songs Not Skipped

Valen...	Tempo	Energy	Dancea...	Runnab...	Familiar...	Up to d...	Popular...
0.44	0.492	0.448	0.468	0.462	0.552	0.895	0.435
2	2	2	2	2	2	2	2

HOME

Most Active Sources

album 235	playlist-owned-by-other-non-collaborative 122	messages 83
playlist 171	radio 69	
	hub 67	

Favorite Artists

Artist	Number of Songs
Wolfgang Ama...	96
Sergei Rachm...	47
Domenico Sca...	32
Ludwig van Be...	31
They Might Be ...	24
The President...	22

Average Scores of Songs Not Skipped

Valen...	Tempo	Energy	Dancea...	Runnab...	Familiar...	Up to d...	Popular...
0.4	0.48	0.37	0.44	0.42	0.55	0.89	0.42
2	2	2	2	2	2	2	2

OUTDOOR RELAX

Most Active Sources

playlist 68	com.spotify.-feature.runni-ng 18	album 14
	collection 12	artist 9

Favorite Artists

Artist	Number of Songs
Old Crow Med...	12
Foo Fighters	9
Strung Out	9
The President...	6
Band of Horses	4
Cé...	4

Average Scores of Songs Not Skipped

Valen...	Tempo	Energy	Dancea...	Runnab...	Familiar...	Up to d...	Popular...
0.602	0.565	0.728	0.512	0.699	0.662	0.849	0.457
2	2	2	2	2	2	2	2

RECOMMENDATION & RISK

- Recommend different types of music based on users' activities

  - Type of music is decided by artists, scores of songs etc.

  - Activities includes work, home and outdoor

  - Activities can be drawn from time, devices and locations

- Many people may use same user account

- Location information may be incorrect

FURTHER STEPS

- Obtain genre of each tracks and analyze favorite genre of each user

- Text mining of album name and track name

- Understand the meaning of sources field and analyze it

- Get more accurate longitude and latitude data

- Change city to county or other detailed address information

THE END