

# Dplyr lab

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## Exercise 1

### Question 1

There are in this database: 1879 different song names but there are in reality: 1926 different songs, made by 835 different artists. Moreover, there are: 59 different genres in this Spotify database.

### Question 2

Table 1: Distinct Artists per Year

year	artist_count
1998	1
1999	30
2000	58
2001	77
2002	56
2003	64
2004	65
2005	69
2006	63
2007	66
2008	63
2009	61
2010	62
2011	69
2012	67
2013	64
2014	70

year	artist_count
2015	69
2016	75
2017	86
2018	81
2019	73
2020	3

### Question 3

The most popular artist in the dataset is Rihanna with 23 songs.

### Question 4

Table 2: Summary of Tempo by Genre

genre	min_tempo	max_tempo	mean_tempo	median_tempo	num_songs
Dance/Electronic	75.255	179.642	125.5075	126.0410	41
Folk/Acoustic, pop	94.931	128.945	111.9380	111.9380	2
Folk/Acoustic, rock	84.192	84.192	84.1920	84.1920	1
Folk/Acoustic, rock, pop	138.585	138.585	138.5850	138.5850	1
R&B	71.815	170.661	106.9248	100.4600	13
World/Traditional, Folk/Acoustic	82.803	82.803	82.8030	82.8030	1
World/Traditional, hip hop	98.077	101.993	100.0350	100.0350	2
World/Traditional, pop	108.102	108.102	108.1020	108.1020	1
World/Traditional, pop, Folk/Acoustic	100.380	104.833	102.6065	102.6065	2
World/Traditional, rock	96.000	140.083	118.0415	118.0415	2
World/Traditional, rock, pop	132.013	139.048	135.5305	135.5305	2
country	103.055	205.570	137.4096	133.3705	9
country, latin	96.055	96.055	96.0550	96.0550	1
easy listening	157.920	157.920	157.9200	157.9200	1
hip hop	64.934	179.974	116.8596	111.6795	120
hip hop, Dance/Electronic	95.948	190.151	136.6533	131.4960	15
hip hop, R&B	100.215	151.181	121.1220	111.9700	3
hip hop, country	97.984	97.984	97.9840	97.9840	1
hip hop, latin, Dance/Electronic	171.993	171.993	171.9930	171.9930	1
hip hop, pop	73.003	203.911	118.9581	120.0150	265
hip hop, pop, Dance/Electronic	72.022	196.093	122.0034	126.0780	75

genre	min_temp	max_temp	mean_temp	median_temp	num_songs
hip hop, pop, R&B	60.019	203.862	115.1300	107.2030	234
hip hop, pop, R&B, Dance/Electronic	82.820	127.901	103.9113	101.0130	3
hip hop, pop, R&B, latin	82.331	100.010	88.2240	82.3310	2
hip hop, pop, country	129.370	129.370	129.3700	129.3700	1
hip hop, pop, latin	89.661	180.184	127.2119	127.0265	14
hip hop, pop, rock	84.858	179.999	123.1123	125.2500	9
hip hop, rock, pop	90.052	90.052	90.0520	90.0520	1
latin	90.013	198.075	121.6049	97.0620	15
metal	79.012	147.387	106.2089	101.9680	9
pop	65.043	195.685	120.5545	119.9515	411
pop, Dance/Electronic	84.878	198.065	123.4202	124.0210	213
pop, Folk/Acoustic	76.026	171.790	118.3595	109.9505	8
pop, R&B	68.942	210.851	117.0981	111.9100	170
pop, R&B, Dance/Electronic	84.021	176.051	112.0338	104.0865	6
pop, R&B, easy listening	108.984	108.984	108.9840	108.9840	1
pop, country	97.865	147.905	130.5087	136.9250	8
pop, easy listening, Dance/Electronic	135.099	135.099	135.0990	135.0990	1
pop, easy listening, jazz	82.168	127.831	104.9995	104.9995	2
pop, latin	79.997	177.833	113.5903	104.2540	28
pop, rock	77.967	176.667	121.0976	119.0095	26
pop, rock, Dance/Electronic	87.016	189.857	130.3682	129.9590	12
pop, rock, Folk/Acoustic	102.961	112.960	107.9605	107.9605	2
pop, rock, metal	82.952	155.827	128.9358	134.7165	14
rock	74.989	199.935	129.9427	123.8380	57
rock, Dance/Electronic	127.988	127.988	127.9880	127.9880	1
rock, Folk/Acoustic, easy listening	122.979	122.979	122.9790	122.9790	1
rock, Folk/Acoustic, pop	80.529	80.529	80.5290	80.5290	1
rock, R&B, Folk/Acoustic, pop	105.987	105.987	105.9870	105.9870	1
rock, blues	123.904	141.933	132.9185	132.9185	2
rock, blues, latin	97.911	127.981	112.9460	112.9460	2
rock, classical	81.663	81.663	81.6630	81.6630	1
rock, easy listening	114.999	114.999	114.9990	114.9990	1
rock, metal	89.342	187.961	126.2446	118.9815	36
rock, pop	68.976	184.086	124.9503	126.3260	39
rock, pop, Dance/Electronic	113.049	181.994	135.7678	127.4480	8
rock, pop, metal	126.115	152.034	140.2785	141.4825	4
rock, pop, metal, Dance/Electronic	105.013	105.013	105.0130	105.0130	1

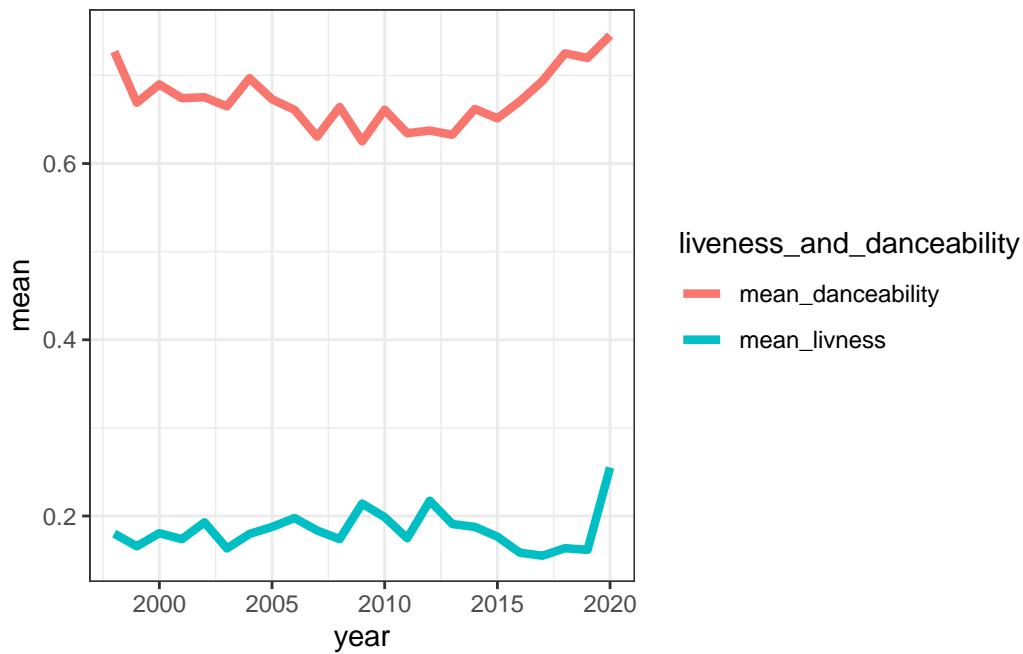
genre	min_temp	max_temp	mean_temp	median_temp	num_songs
set()	68.507	184.819	120.1329	126.9620	22

## Question 5

Table 3: Mean of livness and danceability by genre.

year	mean_livness	mean_danceability
1998	0.1800000	0.7270000
1999	0.1656000	0.6689737
2000	0.1805216	0.6898243
2001	0.1736685	0.6741296
2002	0.1928467	0.6752444
2003	0.1631701	0.6648763
2004	0.1796552	0.6968333
2005	0.1875663	0.6729231
2006	0.1976642	0.6608632
2007	0.1836223	0.6305213
2008	0.1737474	0.6641856
2009	0.2141405	0.6251667
2010	0.1986150	0.6610748
2011	0.1747636	0.6344040
2012	0.2173391	0.6373652
2013	0.1908663	0.6326404
2014	0.1876317	0.6619327
2015	0.1765152	0.6512626
2016	0.1583172	0.6707071
2017	0.1549054	0.6937387
2018	0.1634561	0.7250374
2019	0.1615809	0.7197640
2020	0.2550000	0.7453333

## Question 6



## Exercise 2

### Question 1

### Question 2

Table 4: Admission grade median conditioned both on the Target variable and on the Marital status

Marital status	Dropout	Graduate	Enrolled
single	123.35	127.3	124.05
married	126.50	130.0	122.95
divorced	126.50	126.0	130.20
widower	129.40	170.0	151.75
facto union	119.40	120.0	119.70
legally separated	112.50	114.8	119.00

### Question 3

### Question 4

Table 5: Curricular variable median conditioned on the Genders

Curricular	Male	Female
Curricular units 1st sem (approved)	4.00000	6.0
Curricular units 1st sem (credited)	0.00000	0.0
Curricular units 1st sem (enrolled)	6.00000	6.0
Curricular units 1st sem (evaluations)	8.00000	8.0
Curricular units 1st sem (grade)	11.83333	12.5
Curricular units 1st sem (without evaluations)	0.00000	0.0
Curricular units 2nd sem (approved)	4.00000	5.0
Curricular units 2nd sem (credited)	0.00000	0.0
Curricular units 2nd sem (enrolled)	6.00000	6.0
Curricular units 2nd sem (evaluations)	8.00000	8.0
Curricular units 2nd sem (grade)	11.63604	12.5
Curricular units 2nd sem (without evaluations)	0.00000	0.0