Laboratório 6 - SQLite no R

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```r
knitr::opts_chunk$set(echo = TRUE)
library(RSQLite)
```

```
Warning: pacote 'RSQLite' foi compilado no R versão 4.4.3
```

```r
library(DBI)
library(dplyr)
```

```
Anexando pacote: 'dplyr'
```

```
Os seguintes objetos são mascarados por 'package:stats':

    filter, lag
```

```
Os seguintes objetos são mascarados por 'package:base':

    intersect, setdiff, setequal, union
```

```r
fname <- file.path("disco.db")
conn <- dbConnect(SQLite(), fname)
```

```r
dbListTables(conn)
```

```
 [1] "albums"         "artists"        "customers"       "employees"
 [5] "genres"         "invoice_items"  "invoices"        "media_types"
 [9] "playlist_track" "playlists"      "sqlite_sequence" "sqlite_stat1"
[13] "tracks"
```

```r
dbListFields(conn, "customers")
```

```
 [1] "CustomerId"   "FirstName"    "LastName"     "Company"      "Address"
 [6] "City"         "State"        "Country"      "PostalCode"   "Phone"
[11] "Fax"          "Email"        "SupportRepId"
```

```r
dbGetQuery(conn, "SELECT COUNT(*) AS total_clientes FROM customers;")
```

```
  total_clientes
1             59
```

```r
dbGetQuery(conn, "SELECT COUNT(DISTINCT Country) AS total_paises FROM customers;")
```

```
  total_paises
1           24
```

```r
dbGetQuery(conn, "
  SELECT Country, COUNT(*) AS num_clientes
  FROM customers
  GROUP BY Country
  ORDER BY num_clientes DESC;
")
```

```
          Country num_clientes
1             USA           13
2          Canada            8
3          France            5
4          Brazil            5
5         Germany            4
6  United Kingdom            3
7        Portugal            2
8           India            2
9  Czech Republic            2
10         Sweden            1
11          Spain            1
12         Poland            1
13         Norway            1
14    Netherlands            1
15          Italy            1
```

```
16        Ireland          1
17        Hungary          1
18        Finland          1
19        Denmark          1
20          Chile          1
21        Belgium          1
22         Austria          1
23       Australia          1
24       Argentina          1
```

```
dbGetQuery(conn, "
  SELECT Country, COUNT(*) AS num_clientes
  FROM customers
  GROUP BY Country
  ORDER BY num_clientes DESC
  LIMIT 5;
")
```

```
  Country num_clientes
1     USA           13
2  Canada            8
3  France            5
4  Brazil            5
5 Germany            4
```

```
dbGetQuery(conn, "
  SELECT DISTINCT Country
  FROM customers
  WHERE LENGTH(Country) = 6;
")
```

```
  Country
1  Brazil
2  Canada
3  Norway
4  France
5  Poland
6  Sweden
```

```r
dbGetQuery(conn, "
  SELECT DISTINCT t.Name AS Musica
  FROM customers c
  JOIN invoices i ON c.CustomerId = i.CustomerId
  JOIN invoice_items ii ON i.InvoiceId = ii.InvoiceId
  JOIN tracks t ON ii.TrackId = t.TrackId
  WHERE c.Country = 'Brazil';
")
```

	Musica
1	Experiment In Terra
2	Take the Celestra
3	Shout It Out Loud
4	Calling Dr. Love
5	Strutter
6	Cold Gin
7	Think About You
8	Rocket Queen
9	Don't Cry (Original)
10	Back off Bitch
11	Garden of Eden
12	Coma
13	All Along The Watchtower
14	Karelia Suite, Op.11: 2. Ballade (Tempo Di Menuetto)
15	Fantasia On Greensleeves
16	Interlude Zumbi
17	Rios Pontes & Overdrives
18	Lixo Do Mangue
19	Podes Crer
20	A Cor Do Sol
21	Doutor
22	Linha Do Equador
23	TriboTchan
24	Reggae Tchan
25	Communication Breakdown(2)
26	Carolina Hard-Core Ecstasy
27	X-9 2001
28	Ipiranga 2001
29	Água de Beber
30	Vamo Batê Lata
31	Mensagen De Amor (2000)
32	Saber Amar

```
162                                                         Title Song
163                                                       Soul Singing
164                                                     Lay Down Sally
165                                                           Duelists
166                                                         Powerslave
167                                                              Aloha
168                                                               Será
169                                                     Pais E Filhos
170                                               Rock And Roll Is Dead
171                                                   I Belong To You
172                                                               Casa
173                                                             A Cura
174                                                             Sereia
175                         Heart Of Lothian: Wide Boy / Curtain Call
176                                                 Cérebro Eletrônico
177                                                   A Menina Dança
178                                         You've Been A Long Time Coming
179                                           Abraham, Martin And John
180                                                  Everything I Need
181                                                       Help Yourself
182                             Suite No. 3 in D, BWV 1068: III. Gavotte I & II
183 Music for the Funeral of Queen Mary: VI. "Thou Knowest, Lord, the Secrets of Our Hearts"
184        Symphony No. 2, Op. 16 -  "The Four Temperaments": II. Allegro Comodo e Flemmatico
185      String Quartet No. 12 in C Minor, D. 703 "Quartettsatz": II. Andante - Allegro assai
186                                                     Fast As a Shark
187                                                         Snowballed
188                                                            Go Down
189                                         Hell Ain't A Bad Place To Be
```

```r
tab_album_pais <- dbGetQuery(conn, "
  WITH AlbumCount AS (
    SELECT
      c.Country,
      al.Title AS Album,
      COUNT(*) AS qtd
    FROM customers c
    JOIN invoices i ON c.CustomerId = i.CustomerId
    JOIN invoice_items ii ON i.InvoiceId = ii.InvoiceId
    JOIN tracks t ON ii.TrackId = t.TrackId
    JOIN albums al ON t.AlbumId = al.AlbumId
    GROUP BY c.Country, al.Title
  ),
```

```
  Ranked AS (
    SELECT
      Country,
      Album,
      qtd,
      ROW_NUMBER() OVER (PARTITION BY Country ORDER BY qtd DESC) AS rank
    FROM AlbumCount
  )
  SELECT Country, Album, qtd
  FROM Ranked
  WHERE rank = 1
  ORDER BY Country;
")

tab_album_pais
```

	Country
1	Argentina
2	Australia
3	Austria
4	Belgium
5	Brazil
6	Canada
7	Chile
8	Czech Republic
9	Denmark
10	Finland
11	France
12	Germany
13	Hungary
14	India
15	Ireland
16	Italy
17	Netherlands
18	Norway
19	Poland
20	Portugal
21	Spain
22	Sweden
23	USA
24	United Kingdom

Album qtd

```
1                                                           Acústico    4
2                                                         The X Factor   4
3                        My Generation - The Very Best Of The Who       4
4                                                           Big Ones     4
5                                                 Use Your Illusion I    7
6                                                        Arquivo II      9
7                                     Battlestar Galactica, Season 3     3
8                                                     Prenda Minha       5
9                                                  Chronicle, Vol. 1     4
10                                                   Greatest Hits       5
11                                                 Chronicle, Vol. 1     7
12                                          Djavan Ao Vivo - Vol. 1     5
13                                                            Pop        4
14                                                       Up An' Atom     6
15                                                   Lost, Season 2      7
16                                                         Acústico      4
17                                                         In Step       4
18                        Cássia Eller - Coleção Sem Limite [Disc 2]    4
19                                                    Rattle And Hum     4
20 Instant Karma: The Amnesty International Campaign to Save Darfur     4
21                         My Generation - The Very Best Of The Who     5
22                                                     Volume Dois       4
23                                                 The Office, Season 3  14
24                                                            Load       5
```

```r
tab_artista_pais <- dbGetQuery(conn, "
  WITH ArtistCount AS (
    SELECT
      c.Country,
      ar.Name AS Artist,
      COUNT(*) AS qtd
    FROM customers c
    JOIN invoices i ON c.CustomerId = i.CustomerId
    JOIN invoice_items ii ON i.InvoiceId = ii.InvoiceId
    JOIN tracks t ON ii.TrackId = t.TrackId
    JOIN albums al ON t.AlbumId = al.AlbumId
    JOIN artists ar ON al.ArtistId = ar.ArtistId
    GROUP BY c.Country, ar.Name
  ),
  Ranked AS (
    SELECT
      Country,
```

```
    Artist,
    qtd,
    ROW_NUMBER() OVER (PARTITION BY Country ORDER BY qtd DESC) AS rank
  FROM ArtistCount
)
SELECT Country, Artist, qtd
FROM Ranked
WHERE rank = 1
ORDER BY Country;
")

tab_artista_pais
```

	Country	Artist	qtd
1	Argentina	Metallica	6
2	Australia	Iron Maiden	18
3	Austria	U2	9
4	Belgium	Faith No More	9
5	Brazil	Os Paralamas Do Sucesso	11
6	Canada	Os Paralamas Do Sucesso	16
7	Chile	Led Zeppelin	6
8	Czech Republic	Iron Maiden	9
9	Denmark	Creedence Clearwater Revival	7
10	Finland	Van Halen	6
11	France	Creedence Clearwater Revival	11
12	Germany	Iron Maiden	14
13	Hungary	Jamiroquai	5
14	India	Iron Maiden	8
15	Ireland	Lost	8
16	Italy	Faith No More	5
17	Netherlands	Red Hot Chili Peppers	6
18	Norway	Led Zeppelin	9
19	Poland	U2	6
20	Portugal	Iron Maiden	16
21	Spain	Pearl Jam	6
22	Sweden	Titãs	5
23	USA	Iron Maiden	34
24	United Kingdom	Metallica	9

```
dbDisconnect(conn)
```