

# Desafio 6

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## DESAFIO 6

1. Baixe o arquivo `disco.db` e armazene na variável `path` o caminho completo (pasta) na qual o arquivo foi gravado. Utilize o comando `file.path()` para combinar a variável `path` com o nome do arquivo (`disco.db`) e obter o nome do arquivo com seu respectivo caminho. Armazene este resultado na variável `fname`.

```
#diretorio onde os dados esta presente e esse arquivo tambem  
path <- getwd()  
getwd()
```

```
[1] "H:/Documentos/me315"
```

```
#salvando dados  
dados <- "disco.db"  
  
#combinando para dar o caminho do dado  
fname <- file.path(path, dados)
```

2. Utilizando o pacote `RSQLite`, conecte-se ao arquivo de banco de dados. Armazene a conexão na variável `conn`.

```
library(RSQLite)  
  
conn <- dbConnect(SQLite(), fname)  
dbIsValid(conn)
```

```
[1] TRUE
```

3. Liste as tabelas existentes no banco de dados.

```
#Tables presentes no banco de dados  
dbListTables(conn)
```

```

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

```

4. Identifique os nomes de todas as colunas existentes na tabela `customers`.

```

#Fields
dbListFields(conn, 'customers')

```

```

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

```

5. Utilizando **apenas** SQLite, com o apoio do comando `dbGetQuery`, identifique quantos clientes estão atualmente cadastrados neste banco de dados.

```

#total_clientes nome que vai aparecer no print, selecionou e contou o tptal de clientes
dbGetQuery(conn, 'SELECT COUNT (*) AS total_clientes FROM customers')

```

```

total_clientes
1                59

```

6. Utilizando **apenas** SQLite, identifique o número de países diferentes em que moram os clientes encontrados acima.

```

#seleciona e conta os paises sem repetição
dbGetQuery(conn, "SELECT COUNT(DISTINCT Country) AS total_paises FROM customers;")

```

```

total_paises
1                24

```

7. Utilizando **apenas** SQLite, quantos clientes existem por país? A tabela resultante deve conter o nome do país e a respectiva contagem, além de ser ordenada de maneira decrescente pela referida contagem.

```

#seleciona pais e conta a quantidade de clientes, resentes nos dados customers
dbGetQuery(conn, "SELECT Country, COUNT(*) AS total_clientes
FROM customers
GROUP BY Country
ORDER BY total_clientes DESC")

```

```

Country total_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

8. Quais são os 5 países com mais clientes registrados? Use apenas SQLite.

```
dbGetQuery(conn, 'SELECT Country, COUNT(*) AS total_clientes
                  FROM customers
                  GROUP BY Country ORDER BY total_clientes DESC
                  LIMIT 5')
```

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

9. Quais são os países registrados que possuem apenas 6 letras no nome?

```
#seleciona diferentes paises para nao ter repetição, dos dados customers, pega aqueles c
dbGetQuery(conn, 'SELECT DISTINCT Country
                  FROM customers
                  WHERE LENGTH(Country) = 6;
                  ')

```

Country

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

10. Quais foram as músicas compradas por clientes brasileiros?

```
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"')
```

	Mu
1	Experiment In T
2	Take the Cele
3	Shout It Out
4	Calling Dr.
5	Stru
6	Cold
7	Think About
8	Rocket C
9	Don't Cry (Orig
10	Back off B
11	Garden of
12	
13	All Along The Watcht
14	Karelia Suite, Op.11: 2. Ballade (Tempo Di Menuet
15	Fantasia On Greensle
16	Interlude 2
17	Rios Pontes & Overdr
18	Lixo Do Ma
19	Podes
20	A Cor Do
21	Do
22	Linha Do Equ
23	Tribot
24	Reggae T
25	Communication Breakdow
26	Carolina Hard-Core Ecs
27	X-9

28	Ipiranga
29	Água de F
30	Vamo Batê
31	Mensagen De Amor (2
32	Saber
33	Cinema
34	Meu
35	Será Que Vai Cho
36	Mama, I'm Coming
37	Flying High A
38	Para
39	Admirável Gado
40	Mis Penas Lloraba Yo (Ao Vivo) Soy Gitano (Tar
41	Dri
42	Child In
43	No M
44	Knocking At Your Back
45	The Unwritten
46	Maybe I'm A
47	Vavoom : Ted The Mech
48	D'Yer Ma
49	No Qua
50	Bitterswee
51	Binky The Doc
52	So Fast, So
53	Electro
54	
55	Sweetest T
56	All I Want Is
57	Like A Son
58	Red I
59	Baby
60	Aces
61	Pr
62	Down U
63	Most
64	Your Blue
65	Plot
66	Sanct
67	Unti
68	E
69	Big
70	Cropdu

71	1/2
72	00
73	Dissi
74	Don't Look
75	Pick Myself
76	Any Colour You
77	Leper Mes
78	Damage
79	Green Dis
80	WH
81	An
82	I
83	Wanted Dread And A
84	The Great Gig In The
85	F
86	Nega Do Cabelo
87	You're My Best Fr
88	Seven Seas Of
89	Get Down, Make
90	Ge
91	Be
92	Redun
93	Into The I
94	Cry For
95	Grito De AL
96	Lindo Lago Do
97	Ponto De Interrog
98	Voce Nao Entende Nada - Cotid
99	O Leaoz
100	Top
101	2 Minutes To Midn
102	Losfer V
103	Bora-
104	I Feel Good (I Got You) - Sos
105	Sincero
106	Selv
107	O Descobridor Dos Sete M
108	Não Vou F
109	Cristina
110	O Que Me Imp
111	Eu Amo
112	Nosso A
113	Is This Love (I

114	Right Next Door to
115	In The Eve
116	Fool In The
117	Saudade Dos Aviões Da Panair (Conversando No
118	Caso Você Queira S
119	D
120	Aos D
121	Demo
122	Home Sweet
123	D
124	Scentless Appren
125	In F
126	On A F
127	Mund
128	Nossa Gente (Avisa
129	Revolta OI
130	Vai V
131	Vai Pa
132	Morena De An
133	Meu Caro A
134	Mateus E
135	Samba Do
136	Um Satélite Na Ca
137	Amor De M
138	Banditismo Por Uma Qu
139	Maracatu De Tiro Cert
140	Stir It Up (I
141	Refavela (I
142	Be Good Jo
143	Down by the
144	It's a Mis
145	Shakes and Lac
146	
147	Stand Inside Your
148	FI
149	Jesus Christ
150	The Day I Tried To
151	Burden In My
152	Dust N' E
153	Live and Let
154	The Memory Rem
155	The Unforgive
156	Sli

157		Bad
158		Black Light Syn
159		Midnight From The Inside
160		Sometimes Salva
161		Girl From A Pawn
162		Title
163		Soul Sin
164		Lay Down S
165		Duel
166		Powers
167		A
168		
169		Pais E F
170		Rock And Roll Is
171		I Belong To
172		
173		A
174		Se
175		Heart Of Lothian: Wide Boy / Curtain
176		Cérebro Eletrô
177		A Menina D
178		You've Been A Long Time Co
179		Abraham, Martin And
180		Everything I
181		Help Your
182		Suite No. 3 in D, BWV 1068: III. Gavotte I
183	Music for the Funeral of Queen Mary: VI. "Thou Knowest, Lord, the Secrets of Our Hea	
184	Symphony No. 2, Op. 16 - "The Four Temperaments": II. Allegro Comodo e Flemma	
185	String Quartet No. 12 in C Minor, D. 703 "Quartettsatz": II. Andante - Allegro a	
186		Fast As a S
187		Snowba
188		Go
189		Hell Ain't A Bad Place T

```
#SELECT DISTINCT t.Name -> selecionando musicas apenas uma vez para evitar repetição

#FROM customers c JOIN invoices i ON c.CustomerId = i.CustomerId -> junção das tabelas c

#JOIN invoice_items ii ON i.InvoiceId = ii.InvoiceId -> junção de invoice_items com Invo

#JOIN tracks t ON ii.TrackId = t.TrackId -> junção da tabela tracks para obter os nomes

#WHERE c.Country = "Brazil" -> filtra os clientes que sao apenas do brasil
```



11. Qual o álbum mais tocado por país?

```
dbGetQuery(conn, "WITH AlbumPorPais AS (  
  SELECT  
    c.Country,  
    al.Title AS Album,  
    COUNT(*) AS TotalCompras  
  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.AlbumId  
)  
  
MaxComprasPorPais AS (  
  SELECT  
    Country,  
    MAX(TotalCompras) AS MaxCompras  
  FROM AlbumPorPais  
  GROUP BY Country  
)  
  
SELECT  
  a.Country,  
  a.Album,  
  a.TotalCompras  
FROM AlbumPorPais a  
JOIN MaxComprasPorPais m  
  ON a.Country = m.Country AND a.TotalCompras = m.MaxCompras  
ORDER BY a.Country, a.Album;  
")
```

	Country
1	Argentina
2	Australia
3	Austria
4	Belgium
5	Belgium
6	Brazil
7	Canada
8	Chile

9	Chile
10	Chile
11	Czech Republic
12	Denmark
13	Denmark
14	Finland
15	Finland
16	France
17	France
18	Germany
19	Germany
20	Hungary
21	India
22	Ireland
23	Italy
24	Netherlands
25	Norway
26	Norway
27	Poland
28	Portugal
29	Portugal
30	Spain
31	Sweden
32	USA
33	United Kingdom
34	United Kingdom

	Album
1	Acústico
2	The X Factor
3	My Generation - The Very Best Of The Who
4	Big Ones
5	Rotten Apples: Greatest Hits
6	Use Your Illusion I
7	Arquivo II
8	Battlestar Galactica, Season 3
9	Heroes, Season 1
10	My Way: The Best Of Frank Sinatra [Disc 1]
11	Prenda Minha
12	Chronicle, Vol. 1
13	Mezmerize
14	Greatest Hits
15	Greatest Kiss
16	Chronicle, Vol. 1

17		Minha Historia
18		Djavan Ao Vivo - Vol. 1
19		Unplugged
20		Pop
21		Up An' Atom
22		Lost, Season 2
23		Acústico
24		In Step
25		Cássia Eller - Coleção Sem Limite [Disc 2]
26		For Those About To Rock We Salute You
27		Rattle And Hum
28	Instant Karma: The Amnesty International Campaign to Save Darfur	
29		Raul Seixas
30		My Generation - The Very Best Of The Who
31		Volume Dois
32		The Office, Season 3
33		Load
34		No Prayer For The Dying
	TotalCompras	
1	4	
2	4	
3	4	
4	4	
5	4	
6	7	
7	9	
8	3	
9	3	
10	3	
11	5	
12	4	
13	4	
14	5	
15	5	
16	7	
17	7	
18	5	
19	5	
20	4	
21	6	
22	7	
23	4	
24	4	

25	4
26	4
27	4
28	4
29	4
30	5
31	4
32	14
33	5
34	5

12. Qual o artista mais tocado por país?

```
dbGetQuery(conn, "

WITH ArtistasPorPais AS (
  SELECT
    c.Country,
    ar.Name AS Artista,
    COUNT(*) AS TotalTocadas
  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.ArtistId
),

MaxPorPais AS (
  SELECT
    Country,
    MAX(TotalTocadas) AS MaxTocadas
  FROM ArtistasPorPais
  GROUP BY Country
)

SELECT
  a.Country,
  a.Artista,
  a.TotalTocadas
FROM ArtistasPorPais a
```

```

JOIN MaxPorPais m
  ON a.Country = m.Country AND a.TotalTocadas = m.MaxTocadas
ORDER BY a.Country, a.Artista;
")

```

	Country	Artista	TotalTocadas
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	Brazil	Pearl Jam	11
7	Canada	Os Paralamas Do Sucesso	16
8	Chile	Led Zeppelin	6
9	Czech Republic	Iron Maiden	9
10	Czech Republic	U2	9
11	Denmark	Creedence Clearwater Revival	7
12	Finland	Van Halen	6
13	France	Creedence Clearwater Revival	11
14	Germany	Iron Maiden	14
15	Hungary	Jamiroquai	5
16	Hungary	The Office	5
17	India	Iron Maiden	8
18	Ireland	Lost	8
19	Italy	Faith No More	5
20	Italy	The Rolling Stones	5
21	Netherlands	Red Hot Chili Peppers	6
22	Norway	Led Zeppelin	9
23	Poland	U2	6
24	Portugal	Iron Maiden	16
25	Spain	Pearl Jam	6
26	Sweden	Titãs	5
27	USA	Iron Maiden	34
28	United Kingdom	Metallica	9

13. Desconecte do banco de dados.

```
dbDisconnect(conn)
```