

# lab7

AUTHOR

Felipe Pedroso Popic

```
library(RSQLite)
```

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

```
# conectar ao banco
conn <- dbConnect(SQLite(), "database.sqlite3")

# listar tabelas disponíveis
dbListTables(conn)
```

```
[1] "course_offerings"  "courses"           "grade_distributions"
[4] "instructors"       "rooms"              "schedules"
[7] "sections"          "subject_memberships" "subjects"
[10] "teachings"
```

```
query_professores <- "
SELECT DISTINCT i.name AS professor
FROM instructors i
JOIN teachings t ON i.id = t.instructor_id
JOIN sections s ON t.section_uuid = s.uuid
JOIN course_offerings co ON s.course_offering_uuid = co.uuid
JOIN subject_memberships sm ON co.uuid = sm.course_offering_uuid
JOIN subjects sub ON sm.subject_code = sub.code
WHERE sub.abbreviation = 'STAT';
"

professores <- dbGetQuery(conn, query_professores)
cat("Quantidade de professores de Estatística:", nrow(professores), "\n")
```

Quantidade de professores de Estatística: 377

```
query_gpa <- "
SELECT
  co.uuid AS course_offering_uuid,
  s.number AS section_number,
  i.name AS professor,
  c.number AS disciplina,
  (
    4.0 * gd.a_count +
    3.5 * gd.ab_count +
    3.0 * gd.b_count +
    2.5 * gd.bc_count +
    2.0 * gd.c_count +
    1.0 * gd.d_count +
    0.0 * gd.f_count
  ) * 1.0 / NULLIF(
```

```

        gd.a_count + gd.ab_count + gd.b_count + gd.bc_count + gd.c_count +
        gd.d_count + gd.f_count, 0
    ) AS gpa
FROM grade_distributions gd
JOIN course_offerings co ON gd.course_offering_uuid = co.uuid
JOIN courses c ON co.course_uuid = c.uuid
JOIN sections s ON gd.course_offering_uuid = s.course_offering_uuid
        AND gd.section_number = s.number
JOIN teachings t ON s.uuid = t.section_uuid
JOIN instructors i ON t.instructor_id = i.id
JOIN subject_memberships sm ON co.uuid = sm.course_offering_uuid
JOIN subjects sub ON sm.subject_code = sub.code
WHERE sub.abbreviation = 'STAT';
"

```

```
gpa_por_oferecimento <- dbGetQuery(conn, query_gpa)
```

```

gpa_prof <- aggregate(gpa ~ professor, data = gpa_por_oferecimento, mean, na.rm = TRUE)

prof_dificil <- gpa_prof[which.min(gpa_prof$gpa), ]
prof_facil <- gpa_prof[which.max(gpa_prof$gpa), ]

cat("Professor mais difícil:", prof_dificil$professor, "(GPA médio:", prof_dificil$gpa

```

Professor mais difícil: JAMES D KUELBS (GPA médio: 2.6375 )

```
cat("Professor mais fácil:", prof_facil$professor, "(GPA médio:", prof_facil$gpa, ")\\
```

Professor mais fácil: GUANHUA CHEN (GPA médio: 4 )

```

gpa_disc <- aggregate(gpa ~ disciplina, data = gpa_por_oferecimento, mean, na.rm = TRUE)

disc_dificil <- gpa_disc[which.min(gpa_disc$gpa), ]
disc_facil <- gpa_disc[which.max(gpa_disc$gpa), ]

cat("Disciplina mais difícil:", disc_dificil$disciplina, "(GPA médio:", disc_dificil$gpa

```

Disciplina mais difícil: 431 (GPA médio: 2.891568 )

```
cat("Disciplina mais fácil:", disc_facil$disciplina, "(GPA médio:", disc_facil$gpa, ")\\
```

Disciplina mais fácil: 628 (GPA médio: 4 )

```
dbDisconnect(conn)
```