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#
# Name: Rishikesh Yadav
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# Description: Final Exam Submission for PostgreSQL API in R
# File: Rishikesh_Yadav_Final_API.r
#
############################

# 3.1 - Here we make a connection to your local PostgreSQL database
library(RPostgreSQL)
```

```
## Warning: package 'RPostgreSQL' was built under R version 4.2.3
```

```
## Loading required package: DBI
```

```
## Warning: package 'DBI' was built under R version 4.2.3
```

```
db_name <- "FE_513"
username <- "postgres"
driver <- dbDriver("PostgreSQL")
conn <-dbConnect(driver, dbname = db_name, user = username, password = "root")

# 3.2 - Here we query the PostgreSQL database via API to get the original bank data
result <- dbGetQuery(conn, "SELECT * FROM bank;")

# 3.3 - Here we calculate asset growth rate for each quarter and each bank with the
# given formula and store the result in a data frame.
library(dplyr)
```

```
## Warning: package 'dplyr' was built under R version 4.2.3
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
result <- result %>% group_by(id) %>% arrange(id, date) %>% mutate(asset.growth.rate = (asset - lag(asse
result
```

```
## # A tibble: 37,819 x 6
## # Groups:   id [9,614]
##       id date          asset liability   idx asset.growth.rate
##    <int> <date>        <int>     <int> <int>             <dbl>
```

```
##  1     9 2002-03-31   348727    321479 20912           NA
##  2     9 2002-06-30   361953    332900 20913            0.0379
##  3     9 2002-09-30   383246    352456 20914            0.0588
##  4     9 2002-12-31   371812    340365 20911           -0.0298
##  5    14 2002-03-31 68600000  64300000 27334           NA
##  6    14 2002-06-30 73600000  69200000 27335            0.0729
##  7    14 2002-09-30 72800000  68200000 27336           -0.0109
##  8    14 2002-12-31 79600000  74500000 27333            0.0934
##  9    28 2002-03-31    14340      7948  3937           NA
## 10    28 2002-06-30    12049      5354  3938           -0.160
## # i 37,809 more rows
```

```
#3.4 - Here we export the data frame of Q 3.3 to the PostgreSQL database via API
dbWriteTable(conn, "bank_data_from_api", result, row.names=FALSE, append=TRUE)
```

```
## [1] TRUE
```