Dealing with database

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Introduction

Nowadays, most companies use database to store information. There are different kind of database but in this workshop we will handle Structured Query Language (SQL) type: SQLite. To start download these datasets

- SqLite file

Install Rstudio *(download)* or update version

```
#install.packages("installr")
#library(installr)
#updateR()
```

Content

- Import different database types
- Modify database

1. Import different database types

SQLite

Install sqlite in computer download file.

```
library(RSQLite)
conn <- dbConnect(SQLite(),'GeneratorRefilling.sqlite')
dtables<-dbListTables(conn) # list tables in db
query <- 'SELECT * From RefillingGen2018'
dGenR<- dbGetQuery(conn,query)
#tail(dGenR,3)
```

Dat files

```
tab<-read.delim2('3055.dat')
temp<-colnames(tab)
colnames(tab)<-c('num','val','Firstname','Lastname','Email','val1','unit','Date','Datetime','Verify')
head(tab,3)
```

```
##   num val Firstname Lastname                              Email val1 unit
## 1   1   1      Mary    Smith       mary.smith@sakilacustomer.org    5    t
## 2   2   1  Patricia  Johnson patricia.johnson@sakilacustomer.org    6    t
## 3   3   1     Linda Williams   linda.williams@sakilacustomer.org    7    t
##         Date                Datetime Verify
## 1 2006-02-14 2013-05-26 14:49:45.738      1
```

```
## 2 2006-02-14 2013-05-26 14:49:45.738      1
## 3 2006-02-14 2013-05-26 14:49:45.738      1
```

2 Modify database

Create new table

```
#query<- 'CREATE TABLE Workshop (id integer PRIMARYKEY, name char(25), time Date)'
#dbSendQuery(conn, query)
```

Create new table of an existing dataframe

```
dbCreateTable(conn,'Tab3055',tab)
dtables<-dbListTables(conn)
dtables
```

```
## [1] "RefillingGen2018" "Tab3055"          "Tab3057"          "Workshop"
```

Add rows in new table

```
query<-"INSERT INTO Workshop(id, name, time) VALUES ('1','Penina','12/01/2019')"
dbSendQuery(conn,query)
```

```
## <SQLiteResult>
##   SQL  INSERT INTO Workshop(id, name, time) VALUES ('1','Penina','12/01/2019')
##   ROWS Fetched: 0 [complete]
##        Changed: 1
```

Delete rows in table

```
query<-"DELETE FROM Tab3055 WHERE Firstname=='Mary'"
dbExecute(conn,query)
```

```
## Warning: Closing open result set, pending rows
```

```
## [1] 0
```

Change a value in the table

```
query<-"UPDATE Workshop SET name='Angela' WHERE id='1'"
dbExecute(conn,query)
```

```
## [1] 14
```

Check values of table

```
query<-"SELECT * FROM Workshop"
dbtab<-dbGetQuery(conn, query)
#dbtab
```

close the database

```
dbDisconnect(conn)
```

Challenge

1. Import “GeneratorRefilling.sqlite” and “3057.dat” and change the header of “3057.dat” to [‘num’,‘name’,‘surname’,‘date’]
2. Create a table in the database for “3057.dat” called Tab3057
3. Delete the “Tab3055” table

4. Add a row to Tab3057 table
5. Delete the 3rd row of Tab3057
6. Add column ‘Time’ to Tab3057