LORENZO AUSIELLO

ASSIGNMENT 3

PROBLEM 1

```
-- Import data from banks sec 2002 and banks al 2002. Delete duplicate
-- rows from banks sec 2002
DROP TABLE IF EXISTS banks_sec_2002;
SET datestyle = 'MDY';
CREATE TABLE banks_sec_2002(
 id INTEGER,
 date DATE,
 security INTEGER
);
SELECT * FROM banks_sec_2002;
COPY banks_sec_2002 (id, date, security)
FROM 'C:\Users\Public\banks_sec_2002.csv'
DELIMITER ','
CSV HEADER;
SELECT id, date, security, COUNT(*)
FROM banks_sec_2002
GROUP BY id, date, security
HAVING COUNT(*) > 1;
DELETE FROM banks_sec_2002 a
USING (
  SELECT id, date, security, MIN(ctid) AS min_ctid
  FROM banks_sec_2002
```

```
GROUP BY id, date, security
  HAVING COUNT(*) > 1
) AS b
WHERE a.id = b.id
 AND a.date = b.date
 AND a.security = b.security
 AND a.ctid <> b.min_ctid;
DROP TABLE IF EXISTS banks_al_2002;
CREATE TABLE banks_al_2002(
 id INTEGER,
 date DATE,
 asset INTEGER,
       liability INTEGER
);
SELECT * FROM banks_al_2002;
COPY banks_al_2002 (id, date, asset, liability)
FROM 'C:\Users\Public\banks_al_2002-1.csv'
DELIMITER ','
CSV HEADER;
SELECT id, date, asset, liability, COUNT(*)
FROM banks_al_2002
GROUP BY id, date, asset, liability
HAVING COUNT(*) > 1;
```

- -- Select proper join manner to join banks sec 2002 and banks al 2002. Make
- -- sure that all data from banks sec 2002 are kept in the joint table. Report

-- the first 10 observations.

SELECT *

FROM banks_sec_2002 AS bs

LEFT JOIN banks_al_2002 AS ba

ON bs.id = ba.id

AND bs.date = ba.date

LIMIT 10;

	id integer •	date date	security integer	id integer	date atte	asset integer	liability integer
1	32307	2002-09-30	0	32307	2002-09-30	53714	49350
2	22598	2002-03-31	0	22598	2002-03-31	57360	53205
3	15879	2002-06-30	5357	15879	2002-06-30	76960	62945
4	35373	2002-06-30	0	35373	2002-06-30	46551	38721
5	5226	2002-09-30	7960	5226	2002-09-30	53873	48146
6	22092	2002-12-31	0	22092	2002-12-31	147828	135596
7	13749	2002-03-31	17476	13749	2002-03-31	214733	189972
8	823	2002-12-31	44972	823	2002-12-31	271961	241138
9	29831	2002-03-31	6505	29831	2002-03-31	58300	43689
10	10203	2002-09-30	3889	10203	2002-09-30	320853	293453

- -- Create a new table banks total. Insert the values from previous joint table
- -- into this new one. And set a primary key for the table.

```
DROP TABLE IF EXISTS banks_total;
```

```
create table banks_total (
id Integer,
date Date,
security Integer,
asset Integer,
liability Integer,
```

);

PRIMARY KEY (id, date)

SELECT * FROM banks_total;

INSERT INTO banks_total (id, date, security, asset, liability)

SELECT bs.id, bs.date, bs.security, ba.asset, ba.liability

FROM banks_sec_2002 AS bs

LEFT JOIN banks_al_2002 AS ba

ON bs.id = ba.id

AND bs.date = ba.date;

SELECT * FROM banks_total;

	id [PK] integer	date [PK] date	security integer	asset integer	liability integer
1	32307	2002-09-30	0	53714	49350
2	22598	2002-03-31	0	57360	53205
3	15879	2002-06-30	5357	76960	62945
4	35373	2002-06-30	0	46551	38721
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10	10203	2002-09-30	3889	320853	293453

- -- For each quarter of the year 2002 count how many banks have security
- -- over 20% of its' asset.

SELECT

EXTRACT(quarter FROM date) AS quarter,

COUNT(*) AS banks_count_over_20_percent

FROM banks_total

WHERE

EXTRACT(year FROM date) = 2002

AND security > (0.2 * asset)

GROUP BY quarter

ORDER BY quarter;

	quarter numeric	banks_count_over_20_percent bigint
1	1	984
2	2	1023
3	3	1033
4	4	1048

- -- How many banks have liability over 90% of assets in first quarter of 2002
- -- but goes below 90% in the second quarter of 2002

SELECT COUNT(DISTINCT t1.id)

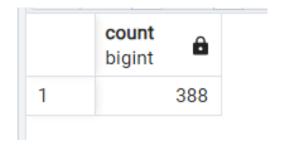
FROM banks_total t1

JOIN banks_total t2 ON t1.id = t2.id

WHERE t1.date = '2002-03-31' AND t2.date = '2002-06-30'

AND t1.liability > 0.9 * t1.asset

AND t2.liability < 0.9 * t2.asset;



-- create csv

COPY banks_total

TO 'C:\Users\Public\banks_total_export.csv'

DELIMITER ','

CSV HEADER;

PROBLEM 2

library("RPostgres")

Make a connection to your local PostgreSQL database using API.

con <- dbConnect(RPostgres::Postgres(),</pre>

```
dbname = "postgres",
        host = "127.0.0.1",
        port = 5432,
        user = "postgres",
        password = '******')
## Import the csv file you got from Problem 1 (banks total)
## into a new table in the database using API.
setwd('C:/Users/Public')
dbWriteTable(con, "new banks total", read.csv("banks total export.csv"))
## Retrieve the data of table 'banks total' using API. Count how many rows
## in the table.
banks_total <- dbGetQuery(con, "SELECT * FROM banks_total")
result <- dbGetQuery(con, "SELECT COUNT(*) FROM banks_total")
head(banks_total)
 > head(banks_total)
 3 15879 2002-06-30 5357 76960
4 35373 2002-06-30 0 46551
                                       62945
                                       38721
 5 5226 2002-09-30 7960 53873
                                      48146
 6 22092 2002-12-31
                     0 147828
                                     135596
print(result)
  > print(result)
    count
  1 37819
dbDisconnect(con)
```