Untitled

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2024-04-30

Connect R to postgresql

```
con <- dbConnect(RPostgres::Postgres(),
                 host = "localhost",port="5432",
                 user = "postgres", dbname ="Northwind",
                 password =my_pass )
tables<-dbListTables(con)
data.frame(tables=tables)
```

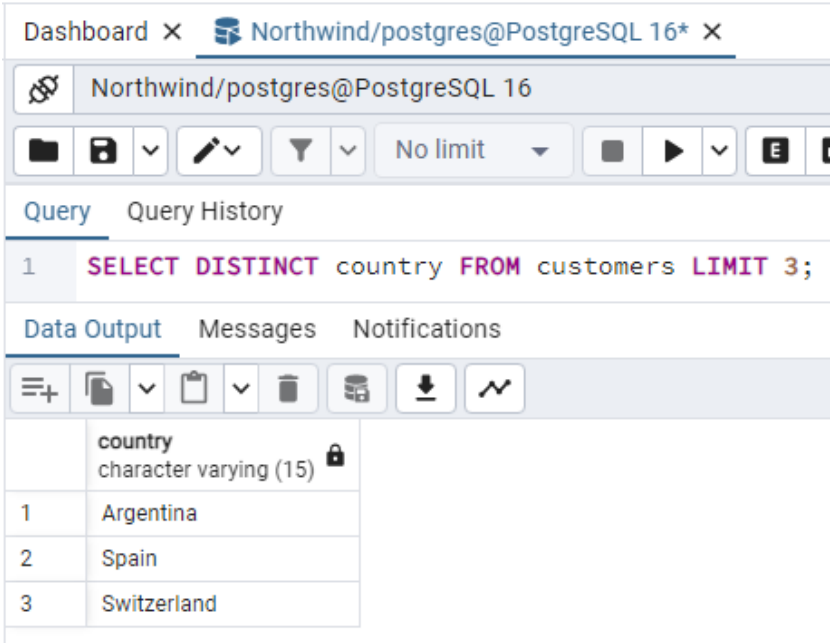
```
       tables
1   categories
2     products
3    suppliers
4    employees
5       orders
6    customers
7     shippers
8 orderdetails
```

Database Northwind https://en.wikiversity.org/wiki/Database_Examples/Northwind/PostgreSQL

PostgreSQL+pgAdmin

https://www.w3schools.com/sql/

SELECT DISTINCT country FROM customers LIMIT 3;




```
tbl(con,"customers") %>%
  distinct(country) %>% head(3)
```

```
# Source:   SQL [3 x 1]
# Database: postgres  [postgres@localhost:5432/Northwind]
  country
  <chr>
1 Argentina
2 Spain
3 Switzerland
```

show_query(): Generate SQL Query using R dbplyr

```
tbl(con,"customers") %>%
  select(customerid, customername) %>% head(5)
```

```
# Source:   SQL [5 x 2]
# Database: postgres  [postgres@localhost:5432/Northwind]
  customerid customername
       <int> <chr>
1          1 Alfreds Futterkiste
2          2 Ana Trujillo Emparedados y helados
3          3 Antonio Moreno Taquería
4          4 Around the Horn
5          5 Berglunds snabbköp
```

```
tbl(con,"customers") %>%
  select(customerid, customername) %>% show_query()
```

```
<SQL>
SELECT "customerid", "customername"
FROM "customers"
```

SELECT customername FROM Customers WHERE Country='Mexico';

```
tbl(con,"customers") %>%
  filter(country=="Mexico") %>%  select(customername)
```

```
# Source:   SQL [5 x 1]
# Database: postgres  [postgres@localhost:5432/Northwind]
  customername
  <chr>
1 Ana Trujillo Emparedados y helados
2 Antonio Moreno Taquería
3 Centro comercial Moctezuma
4 Pericles Comidas clásicas
5 Tortuga Restaurante
```

```
tbl(con,"customers") %>%
  filter(country=="Mexico") %>%
  select(customername) %>%   show_query()
```

```
<SQL>
SELECT "customername"
FROM "customers"
WHERE ("country" = 'Mexico')
```

SELECT * FROM Customers WHERE (Country = 'Germany') AND (city = 'Berlin');

```
tbl(con,"customers") %>%
  select(country,city, address) %>%
  filter(country=="Germany",city=="Berlin")
```

```
# Source:   SQL [1 x 3]
# Database: postgres  [postgres@localhost:5432/Northwind]
  country city   address
  <chr>   <chr>  <chr>
1 Germany Berlin Obere Str. 57
```

```
tbl(con,"customers") %>%
  select(country,city, address) %>%
  filter(country=="Germany",city=="Berlin")  %>% show_query()
```

```
<SQL>
SELECT "country", "city", "address"
FROM "customers"
WHERE ("country" = 'Germany') AND ("city" = 'Berlin')
```

SELECT productname, price FROM products WHERE (price > 80.0)

```
tbl(con,"products") %>%
  select(productname,price) %>%
  filter(price> 80)
```

```
# Source:   SQL [4 x 2]
# Database: postgres  [postgres@localhost:5432/Northwind]
  productname              price
  <chr>                    <dbl>
1 Mishi Kobe Niku            97
2 Sir Rodney's Marmalade     81
3 Thüringer Rostbratwurst   124.
4 Côte de Blaye             264.
```

```
tbl(con,"products") %>%
  select(productname,price) %>%
  filter(price> 80)  %>% show_query()
```

```
<SQL>
SELECT "productname", "price"
FROM "products"
WHERE ("price" > 80.0)
```

SELECT productname, price FROM products WHERE price > 3 * (SELECT AVG(price) FROM products)

```
tbl(con,"products") %>%
  select(productname,price) %>%
  filter(price> 3*mean(price,na.rm = TRUE))
```

```
# Source:   SQL [3 x 2]
# Database: postgres  [postgres@localhost:5432/Northwind]
  productname              price
  <chr>                    <dbl>
1 Mishi Kobe Niku           97
2 Thüringer Rostbratwurst  124.
3 Côte de Blaye            264.
```

```
SELECT productname, price FROM products
    WHERE price > 3 * (SELECT AVG(price) FROM products);
```

Table 1: 3 records

productname	price
Mishi Kobe Niku	97.00
Thüringer Rostbratwurst	123.79
Côte de Blaye	263.50

SELECT COUNT(*) AS “count_1” FROM Products;

```
tbl(con,"products") %>% count(name="count_1")
```

```
# Source:   SQL [1 x 1]
# Database: postgres  [postgres@localhost:5432/Northwind]
  count_1
  <int64>
1      77
```

```
tbl(con,"products") %>% count(name="count_1") %>% show_query()
```

```
<SQL>
SELECT COUNT(*) AS "count_1"
FROM "products"
```

```
SELECT COUNT(*) AS "count_1" FROM Products;
```

Table 2: 1 records

count_1
77

SELECT COUNT(ProductID) FROM Products WHERE Price > 20;

```
tbl(con,"products") %>%filter(price > 20) %>% count()
```

```
# Source:   SQL [1 x 1]
# Database: postgres  [postgres@localhost:5432/Northwind]
         n
  <int64>
1      37
```

```
tbl(con,"products") %>%filter(price > 20) %>% show_query()
```

```
<SQL>
SELECT *
FROM "products"
WHERE ("price" > 20.0)
```

```
SELECT COUNT(ProductID) FROM Products WHERE Price > 20;
```

Table 3: 1 records

count
37

SELECT COUNT(*) FROM products WHERE price > (SELECT AVG(price) FROM products);

```
tbl(con,"products") %>%filter(price > mean(price,na.rm = TRUE))
```

```
# Source:   SQL [1 x 1]
# Database: postgres  [postgres@localhost:5432/Northwind]
        n
  <int64>
1      25
```

```
SELECT COUNT(*) FROM products WHERE
price > (SELECT AVG(price) FROM products);
```

Table 4: 1 records

count
25

SELECT COUNT(CustomerID), Country FROM Customers GROUP BY Country ORDER BY COUNT(CustomerID) DESC;

```sql
SELECT COUNT(CustomerID), Country FROM Customers
GROUP BY Country ORDER BY COUNT(CustomerID) DESC
LIMIT 3;
```

Table 5: 3 records

count	country
13	USA
11	France
11	Germany

```sql
tbl(con,"customers") %>%  count(country,name = "count") %>%
  arrange(desc(count)) %>% head(3)
```

```
# Source:     SQL [3 x 2]
# Database:   postgres  [postgres@localhost:5432/Northwind]
# Ordered by: desc(count)
  country   count
  <chr>   <int64>
1 USA          13
2 France       11
3 Germany      11
```

END

```
dbDisconnect(con)
```

```
#
```