

# Connect to a database

INTERMEDIATE IMPORTING DATA IN R



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# Up to now

- Flat files
- Excel files

# Relational Databases

- What is a relational database?
- How to connect?
- How to read table?

# company

# company

employees		
id	name	started_at
1	Tom	2009-05-17
4	Frank	2012-07-06
6	Julie	2013-01-01
7	Heather	2014-11-23
9	John	2014-11-23

# company

employees		
id	name	started_at
1	Tom	2009-05-17
4	Frank	2012-07-06
6	Julie	2013-01-01
7	Heather	2014-11-23
9	John	2014-11-23

products		
id	name	contract
1	Easy Call	0
2	Call Plus	1
5	Small Biz	0
9	Biz Unlimited	1

# company

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1	Tom	2009-05-17
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products		
id	name	contract
1	Easy Call	0
2	Call Plus	1
5	Small Biz	0
9	Biz Unlimited	1

sales				
id	employee_id	product_id	date	price
1	4	5	2015-09-05	99
2	7	2	2015-09-14	75
3	6	9	2015-09-18	152
4	9	2	2015-09-21	66
5	9	5	2015-09-21	70
7	1	5	2015-09-22	41
8	6	1	2015-09-24	86
9	9	9	2015-09-27	209

# company

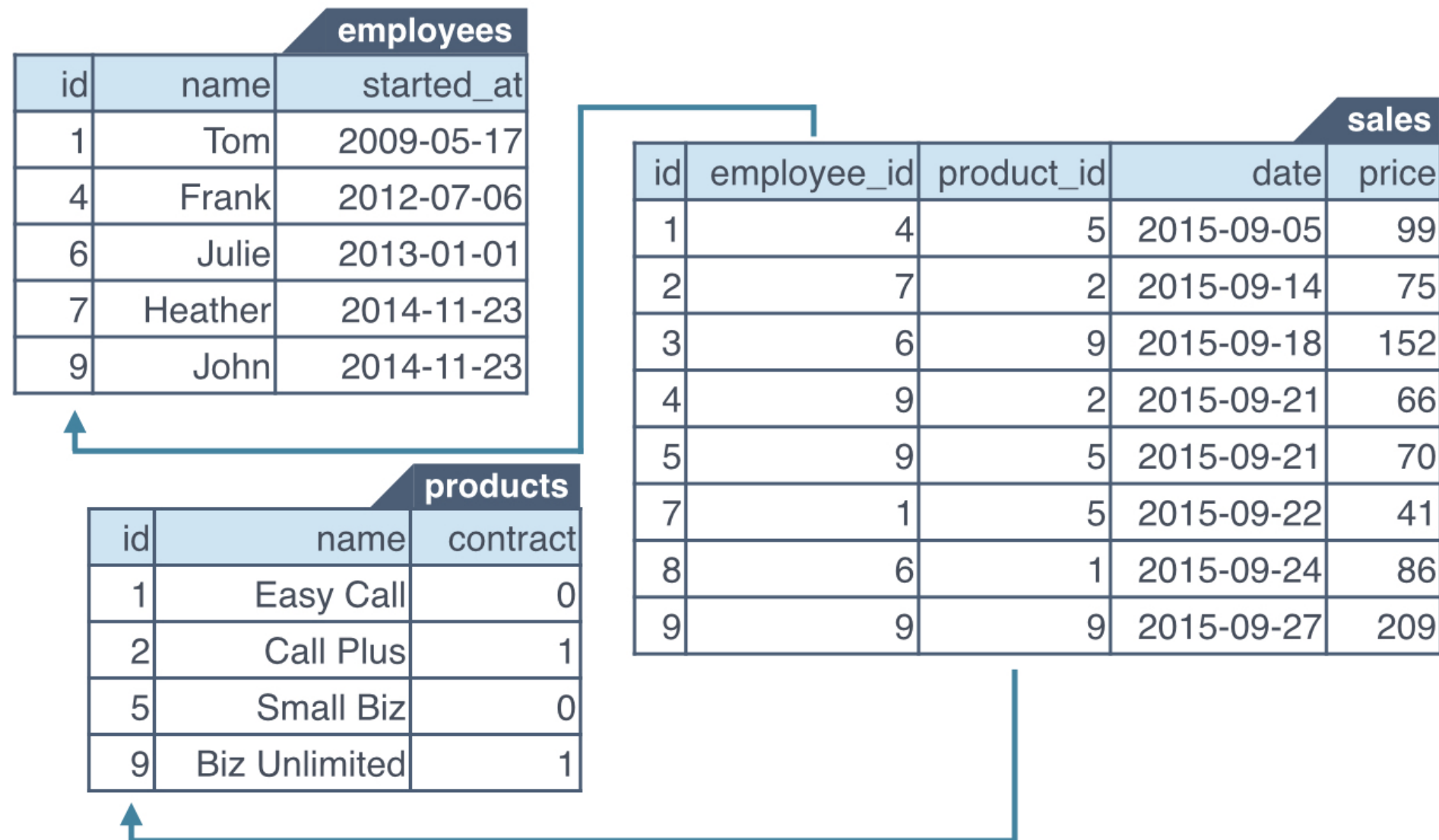
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id	name	started_at
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6	Julie	2013-01-01
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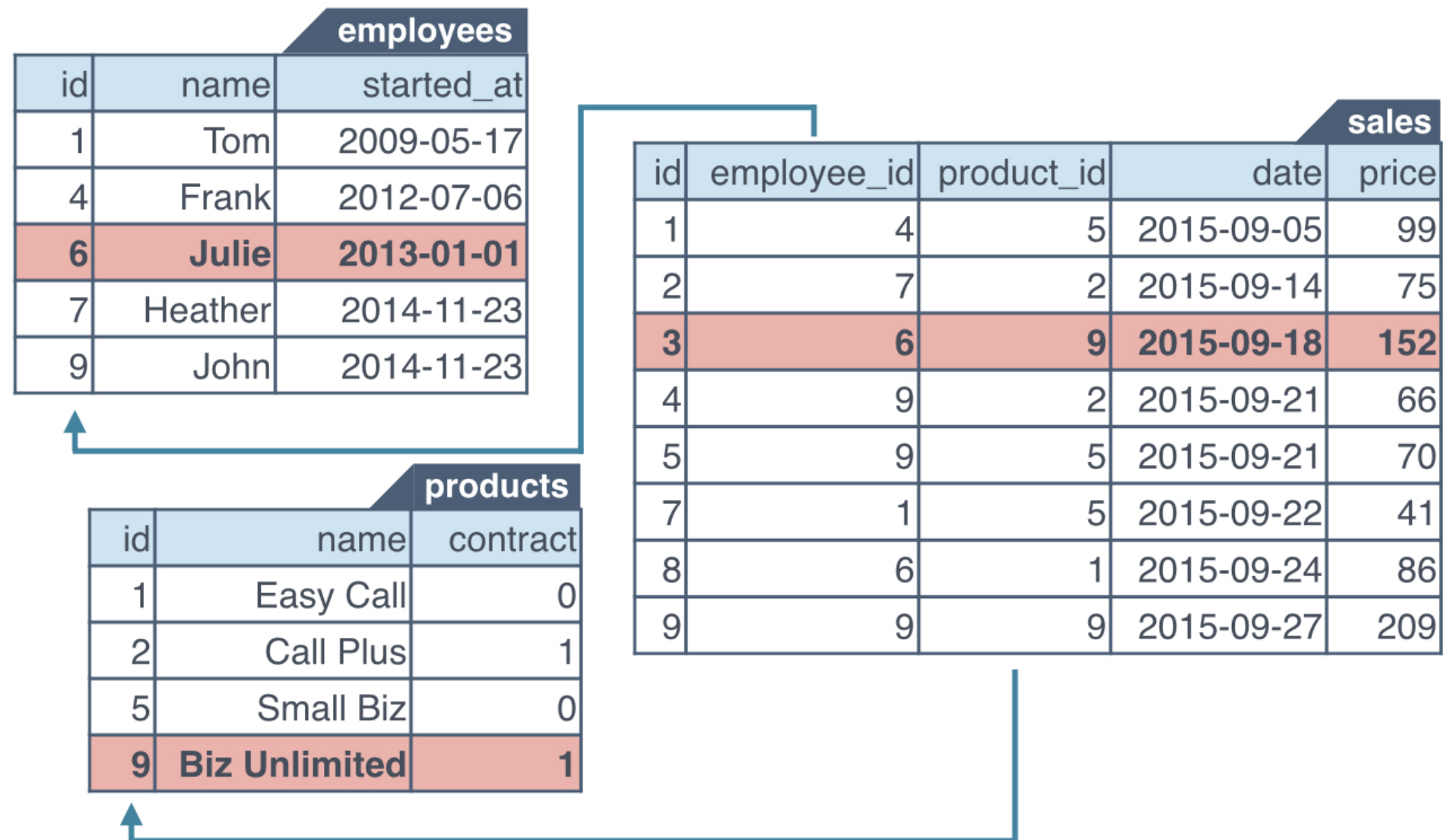
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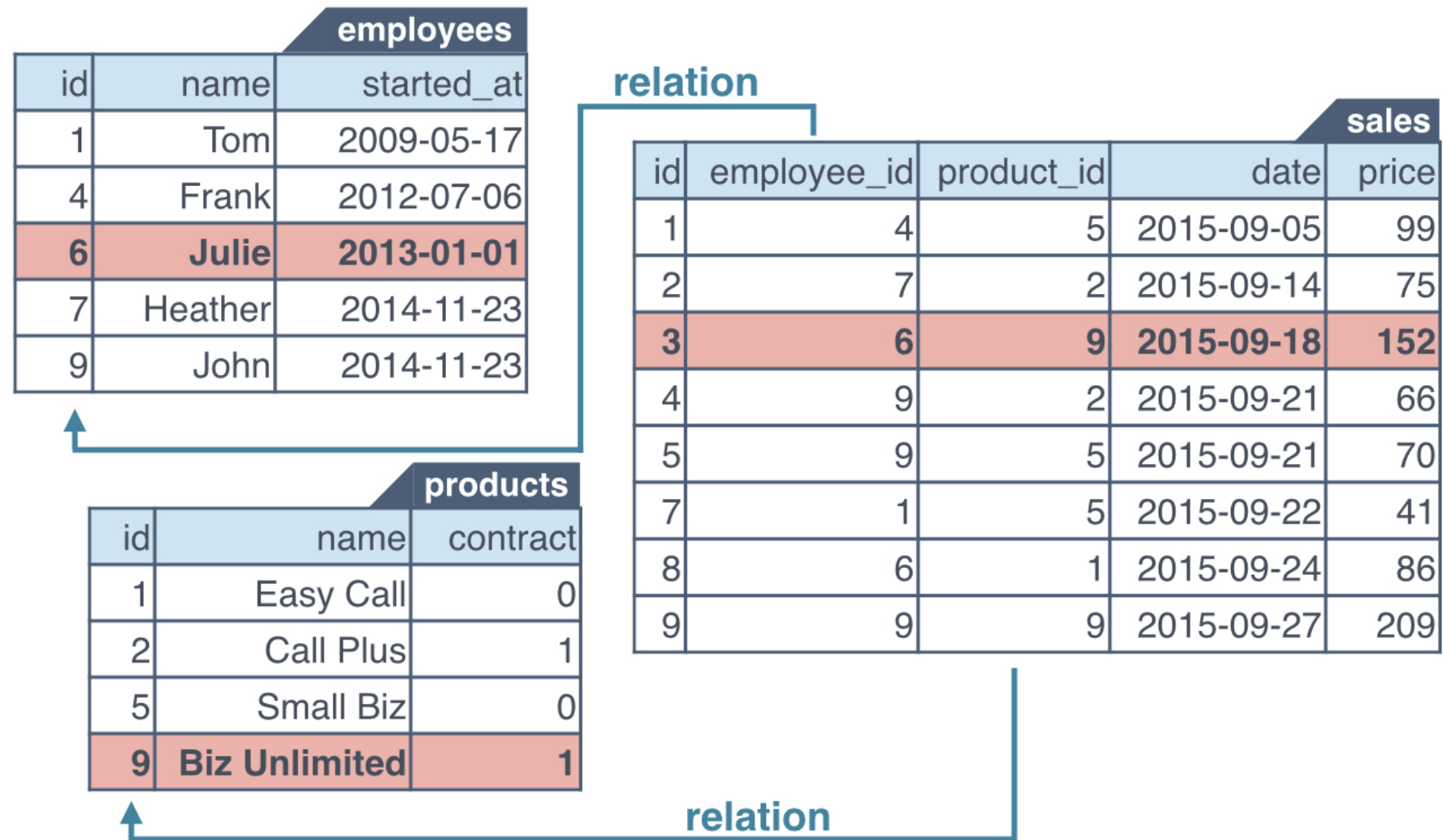
# company



# company



# company



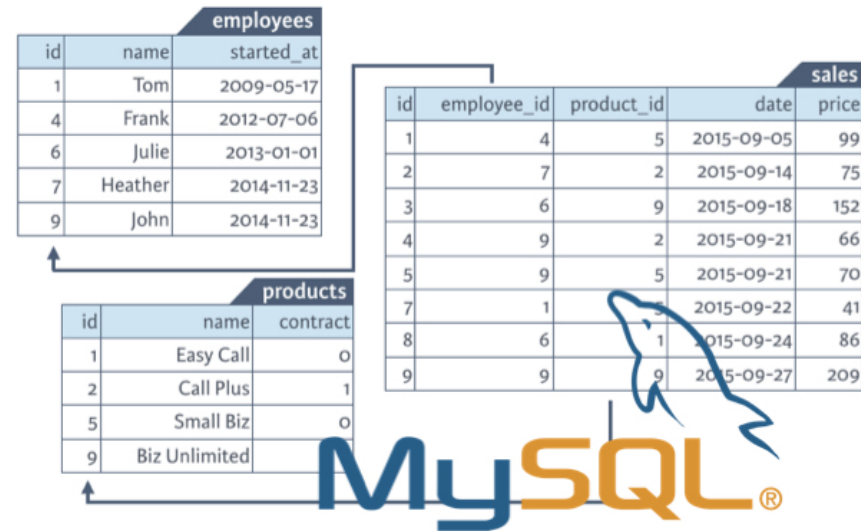
# Database Management System

- DBMS
- Open source
  - MySQL, PostgreSQL, SQLite
- Proprietary
  - Oracle Database, Microsoft SQL Server
- SQL = Structured Query Language

# Databases in R

- Different R packages
- MySQL: RMySQL
- PostgreSQL: RPostgreSQL
- Oracle Database: ROracle
- Conventions specified in DBI

```
install.packages("RMySQL")  
library(DBI)  
# library(RMySQL) not required
```



# Connect to database

```
con <- dbConnect(RMySQL::MySQL(), # Construct SQL driver
  dbname = "company",
  host = "courses.csrrinzqubik.us-
        east-1.rds.amazonaws.com",
  port = 3306,
  user = "student",
  password = "datacamp")
```

- con is DBIConnection object

# Import table data

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# con

```
con <- dbConnect(RMySQL::MySQL(),  
  dbname = "company",  
  host = "courses.csrrinzqubik.us-  
         east-1.rds.amazonaws.com",  
  port = 3306,  
  user = "student",  
  password = "datacamp")
```



# List and import tables

```
dbListTables(con)
```

```
"employees" "products" "sales"
```

employees		
id	name	started_at
1	Tom	2009-05-17
4	Frank	2012-07-06
6	Julie	2013-01-01
7	Heather	2014-11-23
9	John	2014-11-23

```
dbReadTable(con, "employees")
```

```
  id  name started_at
1  1   Tom  2009-05-17
2  4  Frank  2012-07-06
3  6  Julie  2013-01-01
4  7 Heather  2014-11-23
5  9   John  2015-05-12
```

```
dbDisconnect(con)
```

```
TRUE
```

```
con
```

```
Error in .local(dbObj, ...) :  
  internal error in RS_DBI_getConnection: ...
```