

# Reading sheets

INTRODUCTION TO IMPORTING DATA IN R



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# XLConnect

- Martin Studer
- Work with Excel through R
- Bridge between Excel and R
- XLS and XLSX
- Easy-to-use functionality

# Installation

```
install.packages("XLConnect")
```

```
also installing the dependencies 'XLConnectJars', 'rJava'  
...
```

- Problems?
  - Install Oracle's Java Development Kit (JDK)
  - Google your error!

# loadWorkbook()

```
library("XLConnect")  
book <- loadWorkbook("cities.xlsx")  
str(book)
```

```
Formal class 'workbook' [package "XLConnect"] with 2 slots  
  ..@ filename: chr "cities.xlsx"  
  ..@ jobj      : ...
```

# getSheets()

```
getSheets(book)
```

```
"year_1990" "year_2000"
```

```
library(readxl)  
excel_sheets("cities.xlsx")
```

```
"year_1990" "year_2000"
```

# readWorksheet()

```
readWorksheet(book, sheet = "year_2000")
```

```
      Capital Population
1 New York    17800000
2   Berlin    3382169
3   Madrid    2938723
4 Stockholm    1942362
```

# readWorksheet()

Capital	Population	
New York	17800000	
Berlin	3382169	row 3
Madrid	2938723	row 4
Stockholm	1942362	
year_2000	col 2	

```
readWorksheet(book, sheet = "year_2000",  
             startRow = 3,  
             endRow = 4,  
             startCol = 2,  
             header = FALSE)
```

```
Col1  
1 3382169  
2 2938723
```



# Let's practice!

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# Adapting sheets

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# New data!

```
pop_2010 <- data.frame(Capital = c("New York", "Berlin", "Madrid", "Stockholm")  
  Population = c(8191900, 3460725, 3273000, 1372565))
```

```
pop_2010
```

	Capital	Population
1	New York	8191900
2	Berlin	3460725
3	Madrid	3273000
4	Stockholm	1372565

# createSheet()

```
pop_2010 <- ... # truncated  
library(XLConnect)  
book <- loadWorkbook("cities.xlsx")
```

Capital	Population
New York	16044000
Berlin	3382169
Madrid	2938723
Stockholm	1942362

year\_1990


Capital	Population
New York	17800000
Berlin	3382169
Madrid	2938723
Stockholm	1942362

year\_2000



# createSheet()


```
pop_2010 <- ... # truncated  
library(XLConnect)  
book <- loadWorkbook("cities.xlsx")  
createSheet(book, name = "year_2010")
```



Capital	Population
New York	16044000
Berlin	3
Madrid	3
Stockholm	1
year_1990	
Capital	Population
New York	17800000
Berlin	3
Madrid	2
Stockholm	1
year_2000	
year_2010	

# writeWorksheet()


```
pop_2010 <- ... # truncated
library(XLConnect)
book <- loadWorkbook("cities.xlsx")
createSheet(book, name = "year_2010")
writeWorksheet(book, pop_2010, sheet = "year_2010")
```



Capital	Population
New York	16044000
Berlin	3
Madrid	3
Stockholm	1
year_1990	
Capital	Population
New York	17800000
Berlin	3
Madrid	2
Stockholm	1
year_2000	
year_2010	

# saveWorkbook()

```
pop_2010 <- ... # truncated
library(XLConnect)
book <- loadWorkbook("cities.xlsx")
createSheet(book, name = "year_2010")
writeWorksheet(book, pop_2010, sheet = "year_2010")
```



Capital	Population
New York	16044000
Berlin	3382169
Madrid	2938723
Stockholm	1942362

year\_1990

Capital	Population
New York	17800000
Berlin	3382169
Madrid	2938723
Stockholm	1942362

year\_2000

Capital	Population
New York	17800000
Berlin	3382169
Madrid	2938723
Stockholm	1942362

year\_2010

# saveWorkbook()


```
pop_2010 <- ... # truncated
library(XLConnect)
book <- loadWorkbook("cities.xlsx")
createSheet(book, name = "year_2010")
writeWorksheet(book, pop_2010, sheet = "year_2010")

saveWorkbook(book, file = "cities2.xlsx")
```

Capital	Population
New York	16044000
Berlin	3382169
Madrid	2938723
Stockholm	1942362
year_1990	

Capital	Population
New York	17800000
Berlin	3382169
Madrid	2938723
Stockholm	1942362
year_2000	


Capital	Population
New York	17800000
Berlin	3382169
Madrid	2938723
Stockholm	1942362
year_2010	

 cities2.xlsx



# renameSheet()

```
renameSheet(book, "year_1990", "Y1990")
renameSheet(book, "year_2000", "Y2000")
renameSheet(book, "year_2010", "Y2010")
```



Capital	Population
New York	16044000
Berlin	3382169
Madrid	2938723
Stockholm	1942362

year\_1990

Capital	Population
New York	17800000
Berlin	3382169
Madrid	2938723
Stockholm	1942362


year\_2000

Capital	Population
New York	17800000
Berlin	3382169
Madrid	2938723
Stockholm	1942362

year\_2010

# renameSheet()

```
renameSheet(book, "year_1990", "Y1990")
renameSheet(book, "year_2000", "Y2000")
renameSheet(book, "year_2010", "Y2010")
saveWorkbook(book, file = "cities3.xlsx")
```

 cities3.xlsx

Capital	Population
New York	16044000
Berlin	3382169
Madrid	2938723
Stockholm	1942362

Y1990

Capital	Population
New York	17800000
Berlin	3382169
Madrid	2938723
Stockholm	1942362


Y2000

Capital	Population
New York	17800000
Berlin	3382169
Madrid	2938723
Stockholm	1942362

Y2010

# removeSheet()

```
removeSheet(book, sheet = "Y2010")
```



Capital	Population
New York	16044000
Berlin	3382169
Madrid	2938723
Stockholm	1942362

Y1990

Capital	Population
New York	17800000
Berlin	3382169
Madrid	2938723
Stockholm	1942362

Y2000

Capital	Population
New York	17800000
Berlin	3382169
Madrid	2938723
Stockholm	1942362

Y2010

# removeSheet()

```
removeSheet(book, sheet = "Y2010")  
saveWorkbook(book, file = "cities4.xlsx")
```

Capital	Population
New York	16044000
Berlin	3382169
Madrid	2938723
Stockholm	1942362
Y1990	
Capital	Population
New York	17800000
Berlin	3382169
Madrid	2938723
Stockholm	1942362
Y2000	



# Wrap-up

- Basic operations
- Reproducibility is the key!
- More functionality
  - Styling cells
  - Working with formulas
  - Arranging cells
  - ...

# Let's practice!

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