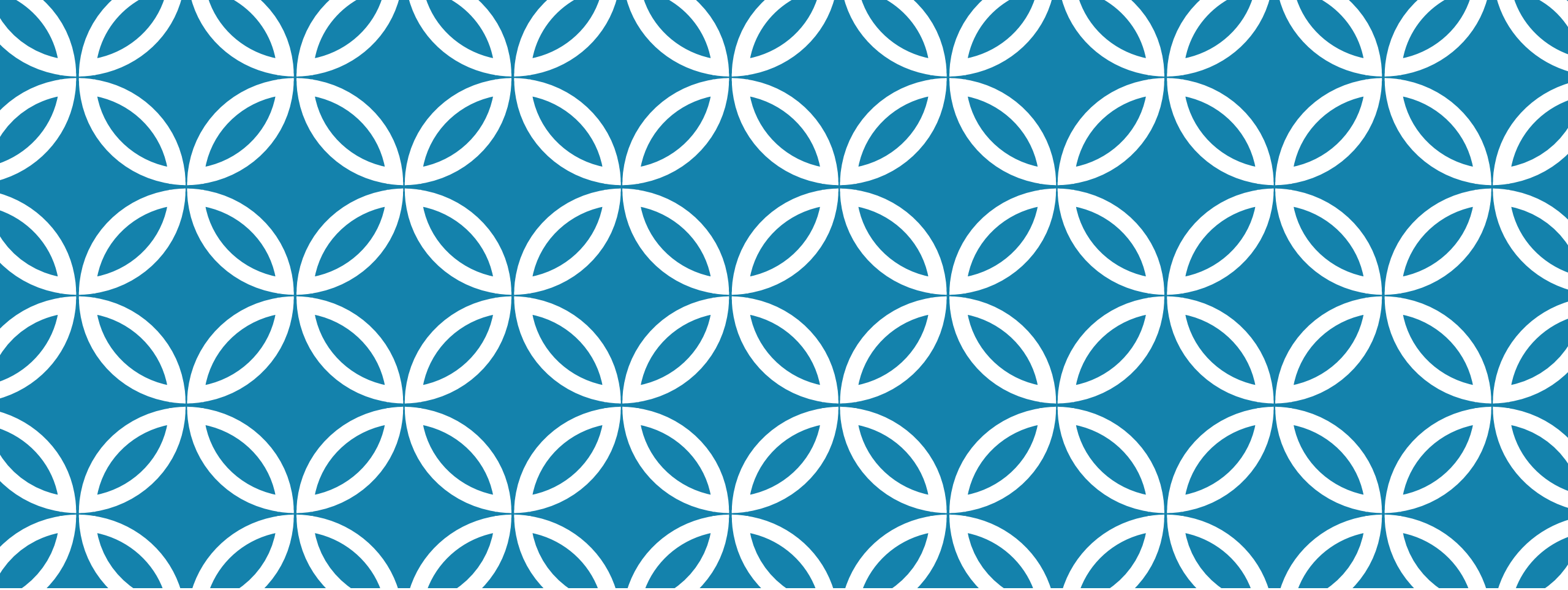
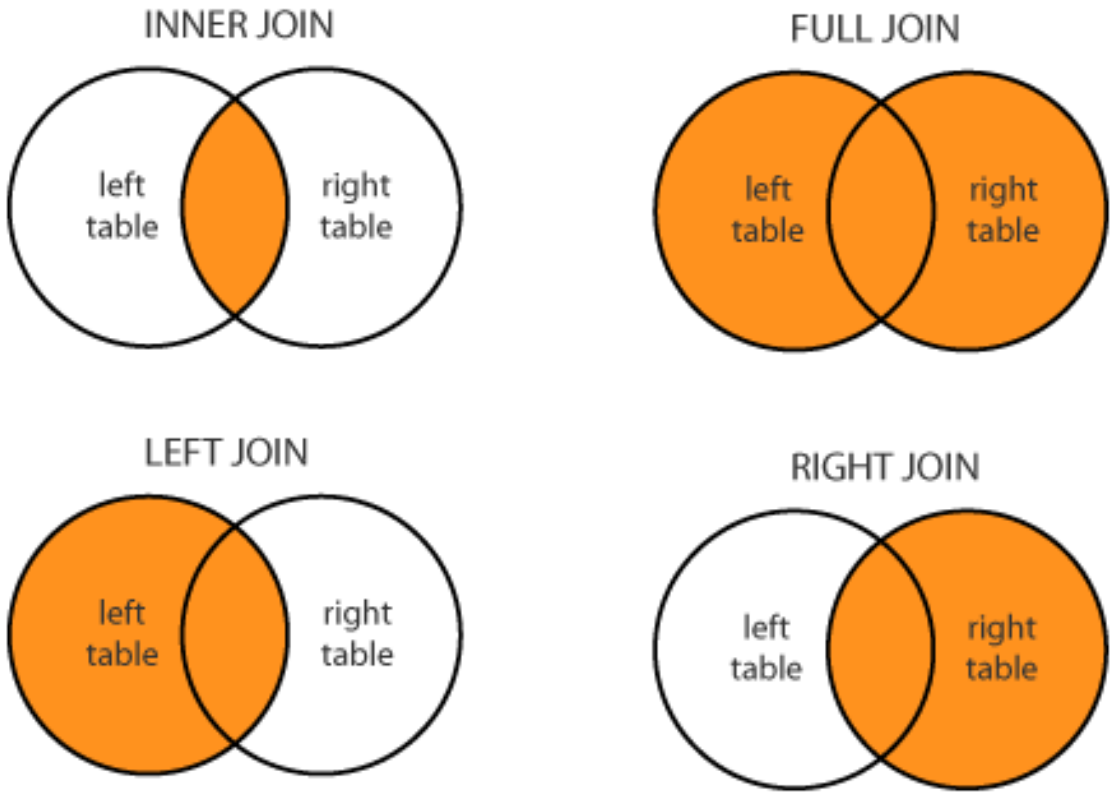


DATAFRAMES PART 2

mgr Maria Kubara, WNE UW

JOINING DATSETS



https://i.stack.imgur.com/iJUMl.png

```
# Inner join

merge(set1, set2)


# Outer join

merge(x = set1, y = set2,
by = "IdClient", all =
TRUE)


# Left outer join

merge(x = set1, y = set2,
by = "IdClient", all.x =
TRUE)


# Right outer join

merge(x = set1, y = set2,
by = "IdKlienta", all.y =
TRUE)
```

TEXT DATA – USEFUL FUNCTIONS

„Cutting-off" signs at given position:

- `substr()`

Merging elements into one text sequence:

- `paste()` `paste0()`

Returning the length of elements in subsequent positions of text vector:

- `nchar()`

Changing letter capitalization:

- `toupper()` `tolower()`

ORDERING DATA

Transpose data/matrix:

- `t()`

Sorting a variable by its values:

- `sort()`

Ordering dataset by values of given variable:

- `order()`

FILTERING DATA

Choosing rows by the condition on column values:

- `set12[set1$Product == "Bike",]`

Creating a subset using certain feature:

- `subset(set12, Product == "Bike")`

CHECKING FOR MISSING DATA

Checking which values are missing:

- `is.na()`

Checking which rows do not include missing values:

- `complete.cases()`

RANDOM NUMBERS

Random number generator:

- `runif()`

Specifying the starting point for random numer generating:

- `set.seed()`

USING PACKAGES

Using a package in R:

1. install the package when using it for the first time in the given R version on a given computer

```
install.packages("packageName")
```

2. load the package every time you'd like to use it - once per working R session

```
library("packageName")
library(packageName) #both notations are ok
```

Package documentation website

cluster: "Finding Groups in Data": Cluster Analysis Extended Rousseeuw et al.

Methods for Cluster analysis. Much extended the original from Peter Rousseeuw, Anja Struyf and Mia Hubert, bas

Version:	2.1.4 Package version
Priority:	recommended
Depends:	R (≥ 3.5.0)
Imports:	graphics, grDevices, stats, utils
Suggests:	MASS, Matrix Dependencies
Published:	2022-08-22
Author:	Martin Maechler [aut, cre], Peter Rousseeuw [aut] (Fortran original), Anja Struyf [au (volume.ellipsoid({d >= 3}))
Maintainer:	Martin Maechler <maechler at stat.math.ethz.ch> Authors and maintainers
License:	GPL-2 | GPL-3 [expanded from: GPL (≥ 2)]
URL:	https://svn.r-project.org/R-packages/trunk/cluster/ Webpage of the package – usually with tutorials and further descriptions
NeedsCompilation:	yes
Citation:	cluster citation info Citation
Materials:	README NEWS ChangeLog
In views:	Cluster, Environmetrics, Robust
CRAN checks:	cluster results

Documentation:

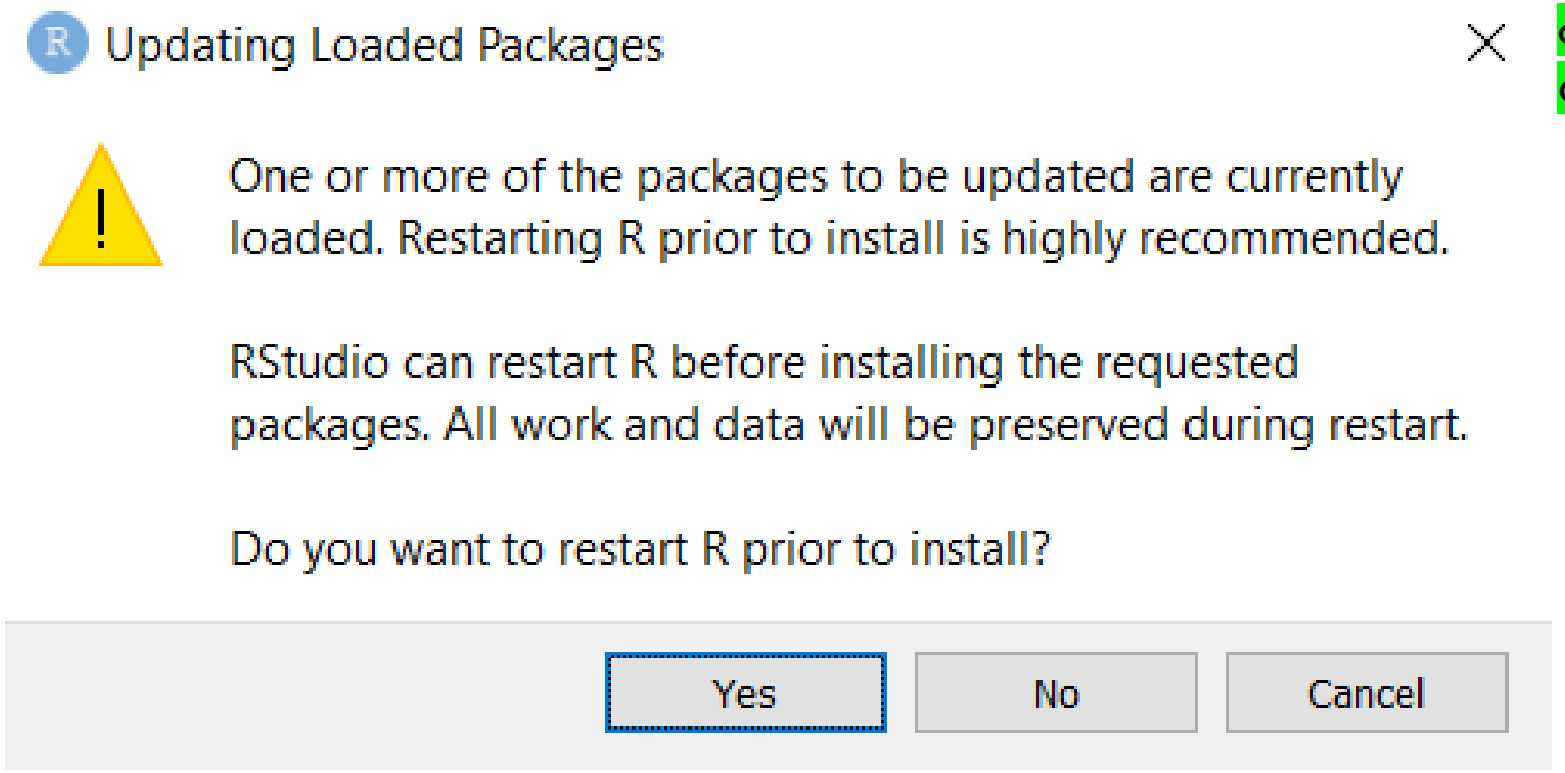
Reference manual: cluster.pdf Documentation!!!

Downloads:

Package source:	cluster_2.1.4.tar.gz Source code
Windows binaries:	r-devel: cluster_2.1.4.zip, r-release: cluster_2.1.4.zip, r-oldrel: cluster_2.1.4.zip
macOS binaries:	r-release (arm64): cluster_2.1.4.tgz, r-oldrel (arm64): cluster_2.1.4.tgz, r-release (x86_64): clu
Old sources:	cluster archive Older versions

Reverse dependencies:

Reverse depends:	abodOutlier, aCGH, AssocTests, bios2mds, BoutrosLab.plotting.general, briKmeans, ClassDis NMF, nomclust, optpart, Oscope, PAMhm, pamr, RnBeads, RPMM, saccadr, STROMA4, Stru
Reverse imports:	ADaCGH2, adiv, ADPclust, adSplit, agricolae, anocva, Anthropometry, aPCoA, aqp, artMS, A clusterExperiment, clusterHD, Clustering, clustrd, CLUSTShiny, cobiclust, coca, CoGAPS, co EvaluateCore, EvoPhylo, factoextra, FactoMineR, FADPclust, FairMclus, fdm2id, flowStats, f



If you try to install a package that is already loaded to the R session – and it's outdated compared to the newest version available on CRAN:

CANCEL → You will just close this pop-up and stay with the currently loaded package version.

NO → You will reinstall the package to the newest version, then you need to reload it again. R session won't be restarted – there may be some issues with the package running.

YES → You will reinstall the package to the newest version, then you need to reaload it again. R session WILL BE RESTARTED. R Studio tries to preserve your work and keep it in the memory but you should be prepared to re-run all your code. Stable solution – updated package will be working as it should.