**R Language Definition**

<https://cran.r-project.org/doc/manuals/r-release/R-lang.html>

<http://www.cyclismo.org/tutorial/R/types.html>

<https://extras.csc.fi/biosciences/courses/bioconductor/lectures/Basics.ppt>

**Concatenate Strings in R**

<https://stat.ethz.ch/R-manual/R-devel/library/base/html/paste.html>

**Reactivity in R**

<http://shiny.rstudio.com/articles/reactivity-overview.html>

Observation: Things with render\* are reactives. This is the portion of the code that will change / update / rerun when user interacts. Kind of like post back.

**What is Vector - Data type**

<http://www.r-tutor.com/r-introduction/vector>

**For each**

<https://cran.r-project.org/web/packages/foreach/vignettes/foreach.pdf>

**Apply family of functions** *- A kind of loop for ‘array’ that calls a function with each elements as para*

http://www.r-bloggers.com/using-apply-sapply-lapply-in-r/

**Iterators** *- not loop function, can be used as part to get each elements in an ‘array’*

http://www.exegetic.biz/blog/2013/11/iterators-in-r/

https://cran.r-project.org/web/packages/iterators/iterators.pdf

**For Loop**

http://www.r-bloggers.com/how-to-write-the-first-for-loop-in-r/

**Looping through data frame**

http://stackoverflow.com/questions/1699046/for-each-row-in-an-r-dataframe

**Creating for loop in Leaflet**

<http://stackoverflow.com/questions/36811943/for-loop-for-multiple-polygons-in-leafletproxy>

**RMySQL** *- package to access sql from R scripts*

<http://www.r-bloggers.com/accessing-mysql-through-r/>

<https://cran.r-project.org/web/packages/RMySQL/RMySQL.pdf>

# Single-file Shiny apps *- no longer need to build separate server.R and ui.R*

<http://shiny.rstudio.com/articles/single-file.html>

**uiOutput, renderUI** Build a dynamic UI that reacts to user input

<http://shiny.rstudio.com/articles/dynamic-ui.html>

**Shiny UI elements**

<http://shiny.rstudio.com/reference/shiny/latest/>

<http://shiny.rstudio.com/reference/shiny/latest/sliderInput.html>

**About Leaflet**

<https://rstudio.github.io/leaflet/>

<https://rstudio.github.io/leaflet/markers.html>

<https://rstudio.github.io/leaflet/shapes.html>

<https://rstudio.github.io/leaflet/popups.html>

R Packages Reference, and R community

http://www.inside-r.org/packages

Ways we tried to add polylines

http://stackoverflow.com/questions/32275213/how-do-i-connect-two-coordinates-with-a-line-using-leaflet-in-r

**Few probable issues in R**

https://www.google.com.sg/search?client=opera&q=R+3.2.1+changed+the+number+of+arguments+to+nchar&sourceid=opera&ie=UTF-8&oe=UTF-8

Warning: Error in for: 4 arguments passed to 'for' which requires 3 <- Solution 'Creating for loop in Leaflet'