Learning R with Kalekye- From once a Beginner’s Perspective

Kalekye

## R Basics

* **R** is an open-source software and a programming language
* **R** runs on Mac OS, Windows and Linux
* Latest version of R can be downloaded from <https://cran.r-project.org>
* Once downloaded, you can install **R** like any other software
* Accept all default settings during installation for simplicity
* The R you have installed is called the **base R**, it has in built functions called packages that can handle tasks like data manipulation and visualization.
* There are specialized packages that can be downloaded and installed in the **base R**.
* R is a language and does not recognize other languages, for instance hello and “hello” are not the same - we shall see later.
* For any other language written in R which is not intended to be recognized as a code, should be preceded by a # (comment), for R not to return an error. For example; #hello
* R is also case sensitive; hello and Hello are two different things, be careful!
* If you need help in R precede the function with ?; (eg. ?tidy)

## R Studio

* It is a good practice to use an IDE when using R, the most recommended is **Rstudio** which can be downloaded from <https://posit.co/download/rstudio-desktop/>, and install it in the same location where you installed R.
* Install **R** before installing **Rstudio**
* Accept all default settings during installation for simplicity
* **Rstudio** has different panes, but for a beginner, you need the R script, Console, Environment, history, Files, Plots, and Packages.
* **R script**: Where you write and edit R codes. Located in the top-left of the interface.
* **Console**: Where you directly execute R commands and see their output. Located in the bottom-left of the interface.
* **Environment/History**: Shows your current variables and command history. Located in the top-right of the interface.
* **Files/Plots/Packages/Help**: Displays file browser, plots, package management, and help documentation. Located in the bottom-right of the interface
* *Tip: You can customize pane layouts using the “Pane Layout” option in RStudio’s global options menu*

## pre-class quiz

**Instructions:** Answer the questions below by writing short responses or trying them in R. We will discuss them at the beginning of the next class.

1. What is the result of running this code in R?

x <- "hello"  
y <- 1  
z <- c(x, y)

* What is the data type of x and y

1. Try this in R and say the output

typeof(TRUE)  
typeof(3.14)  
typeof("R is fun")  
typeof(c(1, 2, 3))

* Can a vector contain both numbers and characters?

1. What does the mean() function do? Try this

mean(c(5, 10, 15))

* What happens if you run the following instead?

mean(5, 10, 15)

1. R comes with datasets you can explore. Try running this and explain what kind of data you see:

data()  
head(mtcars)

1. Find out what function is used to import a .csv file and an .xlsx file into R.
2. Find out the difference between c(), list(), and data.frame()