**My upcoming tutorial series on “Introduction to Data Analysis Using R”**

I am about to start a data analysis tutorial using R. This will be a series of gradual learning centered at introducing data analysis and R. If you have thought of learning some analysis or R, come along and learn with me.

**Who is the training for?**

This training is aimed at anyone interested in transforming readily available data into insightful information as well as those interested in reproducible analysis.

It is most suitable for those new to data analysis and R.

**What will you need?**

All you need for this tutorial series is a working computer with about 150mb of disk space for the installation of R. You will of course need internet to download the slides.

But above all, you will need a great amount of interest and an open mind.

**What will you learn?**

The main goal of this tutorial is to enable you to use R for data analysis. The tutorial is divided into two levels. The first level will give you the foundation, while the second level delves right into R's core which is programming. Level two is optional but highly recommended for effective and efficient coding in R.

Each level is divided into a series of four sessions aimed at giving you a gradual learning structure. Below is the general outline:

Level 1: Main goal is to introduce R and R's graphics

Here you will learn:

*Session One*

* About `base R` and `RStudio`
* How to download and install the programs
* Their layout (Windows and Panes)/interface
* How to interactively work with their console
* What the global environment/working space and history files are
* How to code using scripts
* How to install R Packages

*Session two*

* R's built-in functions
  + What they are
  + Calling functions
* Know how R handles data
* Data objects/structures in R
* Subset different data objects
* How to transform/manipulate data

*Session three*

* Working with R's date and time
* How to import data into R
* Know how and where to get help

*Session four*

* Producing Graphs in R using
  + Base R
  + Lattice and
  + ggplot 2

Level 2: Main goal is to learn how to Programming in R

By the end of this level, you should be able to:

*Session One*

* Understand
  + Relational or Binary Operators
  + Control Structures

*Session two*

* Loop through data objects

*Session three*

* Grasp the concept of environments in R
* Develop own functions

*Session four*

* Appreciate
  + Scoping Rules in R
  + The parsing process in R
  + R Expressions
  + The evaluation process
  + Debugging and profiling
  + Some basic programming terms for non programmers
  + Regular Expressions in R

**Approach used**

Level one is geared towards introducing R and preparing for the real application. This is a requirement for the rest of the tutorial as the core foundation of R is introduced. In this level, you get to appreciate that data need not be survey data that is usually collected for inference. It can be data that can be easily sourced from everyday activity. For example income generated from services rendered or data from training exercise monitors. The idea is that *analytical literacy is essential* in turning readily available data into useful knowledge.

Level two is meant to impart some programming skills for those interested in going beyond simple analysis. The skills learnt in this level will aid in developing user defined functions. If your goal is to learn how to use R to do basic analysis, then you can skip the second level and only refer to it as need be.

Actual application or analysis begins at level three (course outline will be share later). In this level, you get to learn data analysis from descriptive to inferential statistics using survey data. At this point the assumption is that you know how to use one of the statistical programs and more so R. So the discussion will be on the analysis rather than the codes used to do the analysis.

**Becoming an R'st**

The biggest question anyone will eventually ask you as you work with R is, *‘Why R?’*. Indeed, R is one of the many analytical tools, and the key word here is "a tool". So why select it as your analytical tool and not another? I will leave you to answer that question after you have worked with R for some time.

But what I can tell you, R grows on you. At first it might seem a bit different and if you are not well grounded, you might find it difficult in the beginning. As time goes by and you interact with R, learning and using its vast capabilities, you start getting used to it. I personally think its growing usage and most importantly the increasing innovations and packages (add-on), is a big indicator as to where R is headed. For example, the notes as well as the power point presentations are all done using R; there is no need to open text documents and copying your code in it. There are also web apps (applications) like Shinny that you can use to build online analytical applications. But what R is best known for, is its graphing capabilities and a lot of analysts use R for their graphs. Well, I could go on, but it would be good for you to experience R and make your recommendations.

As a new user of R, my strongest advice (based on experience), is to get the basics right. The issues we shall soon be discussing like data types, objects, workingspace, getting help, etcetera, are key to becoming a good R user or programmer. In addition to this tutorial, I recommend you join some of the well known online courses like [DataCamp](https://www.datacamp.com/home), swirl as well as [coursera's data science specialization](https://www.coursera.org/specializations/jhu-data-science). YouTube also has very good lecture series on R and lastly but definitely not the least, I recommend the good old fashioned way of learn anything – reading an R textbook. In addition, try and do as many exercises as you can from these resources, or go to the help pages like the R mailing group and try to figure out solutions for areas you have covered then assess your progress with solutions offered. This will gain you a substantial mileage as far as R programming is concerned.

Of course I cannot fail to mention that R is completely free, and maintained by passionate people. It has its shortcomings, but in every one of them, there is someone somewhere driven by sheer desire to solve the problem, so you would find that the solution to any of the shortcomings has been addressed or is on the pipeline to being solved.

It is therefore my hope that these tutorials will create more r users or what I fondly call R'sts. I believe anyone can learn to code if they are given a good foundation and no assumptions are made. So code away and become a budding analyst or R'st.

**Fee**

This is a free online course. But feel free to support this noble venture.