Loop functions are some of the most powerful functions in the R language and

they make it kind of very easy to use, especially in an interactive setting.

The idea behind a loop function is you want to

execute a loop over an object or a set of

objects in a way that's kind of that does a

lot of work in, in a very small amount of space.

That way, you don't have to type as much on the command line.

Of course, we already learned about loops. We know about for loops and while

loops, things like that, and those are all, work very

well; however, they are com, less compact in a certain way.

So, there are a couple of loop functions in R

and they usually have the word apply in them somewhere.

So some of the key ones are lapply, sapply, apply, tapply, mapply and

the real workhorse function that I, that I'd like to talk about here is lapply.

And the idea behind lapply is

that you have a list of objects and you want to loop over

the list of objects and apply a function to every element of that list.

And so it's a very general concept.

And it can be used very powerfully to do a lot

of computations in a few, in just a little bit of typing.

Sapply is a variant of lapply that simplifies the results.

Apply is a function that operates over the margins of an array.

So, this is very useful

if you want to take summaries of matrices or other or, higher dimensional arrays.

Tapply is short for table apply.

And, it applies a function over subsets of a vector.

And mapply is a multivariate version of real of lapply.

So I'll go into details about how these work in a, in a, in a minute.