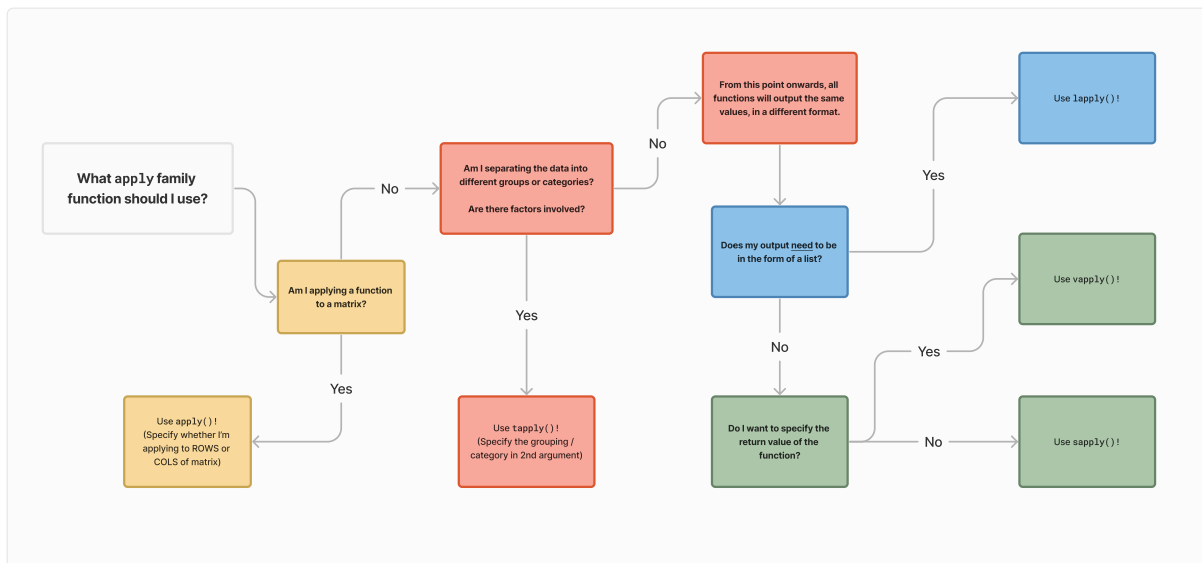


# apply Family Review

## STATS 20: Introduction to Statistical Programming with R

Selina Cheng

This decision tree and table reflects **general guidelines** for when to use each **apply** function.



Function	Input	Output
<code>apply()</code>	Matrix	Vector
<code>lapply()</code>	List	List
<code>sapply()</code> *	List	Vector, Matrix
<code>vapply()</code> **	List, Vector	Vector, Matrix
<code>tapply()</code>	Vector, Data Frame	Vector, List

\* `lapply()` and `sapply()` take in the same input and output different formats of the same values.

\*\* `vapply()` outputs the same type of object as `sapply()`, but it requires the additional input of the return value of your function. Knowing the output of the function you're applying can reduce mistakes in your code.

If you need more information about each function, enter `?`  before a function name to read its documentation.

```
?vapply
```