Objects

R has five basic or “atomic” classes of objects:

- character
- numeric (real numbers)
- integer
- complex
- logical (True/False)

The most basic object is a vector

- A vector can only contain objects of the same class
- BUT: The one exception is a *list*, which is represented as a vector but can contain objects of different classes (indeed, that’s usually why we use them)

Empty vectors can be created with the `vector()` function.

Numbers

- Numbers in R a generally treated as numeric objects (i.e. double precision real numbers)
- If you explicitly want an integer, you need to specify the `L` suffix
- Ex: Entering `1` gives you a numeric object; entering `1L` explicitly gives you an integer.
- There is also a special number `Inf` which represents infinity; e.g. `1 / 0`; `Inf` can be used in ordinary calculations; e.g. `1 / Inf` is 0
- The value `NaN` represents an undefined value ("not a number"); e.g. 0 / 0; `NaN` can also be thought of as a missing value (more on that later)

Attributes

R objects can have attributes

- names, dimnames
- dimensions (e.g. matrices, arrays)
- class
- length
- other user-defined attributes/metadata

Attributes of an object can be accessed using the `attributes()` function.