Cheat Sheet

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getwd() # Outputs the current working directory
[1] "/Users/mike"
setwd("~/Desktop") # Changes working directory to desktop
rm() #remove objects rm(list = ls()) remove everything
objects() & ls()#gives me a list of all object
We can't name a object start with a number
46 %% 7 = 4
46 %/% 7 = 6
order of operations:
1. Parentheses (or Brackets)
2. Exponents
3. Multiplication and Division
4. Addition and Subtraction

c(TRUE, FALSE, TRUE, T, F) # This is a logical vector
The mode() function inputs an object and outputs the type (or mode) of the object.
the mode hierarchy:
logical < numeric < character

seq(0, 5) # numbers increase by 1
[1] 0 1 2 3 4 5
seq(0, 10, by = 2) # numbers now increase by 2
[1] 0 2 4 6 8 10
seq_len(8)
[1] 1 2 3 4 5 6 7 8
seq_along(c(1, 3, 5, 7, 9))
[1] 1 2 3 4 5
running_times[] = running_times

- sum(x) computes the sum of the values of x
- prod(x) computes the product of the values of x
- mean(x) computes the mean of x
- sd(x) computes the standard deviation of x
- var(x) computes the variance of x
- median(x) computes the median of x
- IQR(x) computes the interquartile range of x
- min(x) computes the minimum value of x
- max(x) computes the maximum value of x
- range(x) computes the minimum and maximum values of x • diff(x) computes consecutive differences of x

- cumsum(x) computes the cumulative sum of x
- cumprod(x) computes the cumulative product of x
- sort(x) orders the values of x (increasing order by default) • fivenum(x) computes the five-number summary of x
- summary(x) computes a few summary statistics of x

The any() function inputs a logical vector and outputs TRUE if any of the values is TRUE.
The all() function inputs a logical vector and outputs TRUE if all of the values are TRUE.
The identical() function tests whether two R objects are exactly identical objects
is.na(),
is.nan(),
is.null()
which() function inputs a logical vector and outputs a numeric vector of the indices (or positions) of the TRUE values.

The && and || operators are similar to their respective & and | counterparts but with two key differences.
The && and || operators are not vectorized.
The && and || operators use short-circuit evaluation: They will evaluate expressions from left to right and only evaluate the right expression if necessary.

The stop() function stops the execution of the current expression and throws an error message.
stop("The input has NA values!")
The warning() function throws a warning message but does not stop the execution of the current expression.
A related function is the message() function, which is used for printing diagnostic messages.

```
fib1 <- 1 # Initialize fib1
fib2 <- 1 # Initialize fib2

full_fib <- c(fib1, fib2)

while (fib1 + fib2 < 500) {
old_fib2 <- fib2
fib2 <- fib1 + fib2
full_fib <- c(full_fib, fib2)
fib1 <- old_fib2
}
full_fib
```

```
repeat{
Commands go here
if (condition) { break
}
}
```

We have now learned several additional operations in R to consider. The combined order of operations is:
- Parentheses ()
- Exponents ^
- Unary operators -, + (changing the sign of a number, e.g. -1)
- Colon operator : (making a regular sequence)

- Infix operators of the form %xyz% (e.g., mod %%, integer division %/%, or matrix multiplication %*%)
- *Multiplication and Division* , /
- Addition and subtraction +, -
- Relational operators >, >=, <, <=, ==, !=
- Logical negation !
- Logical AND &, &&
- Logical OR |, ||
- Assignment operator <-