R Basic

Charlene P. Garridos

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R Basic: Syntax, Command, Data Types, Variables, Operators, Functions, Vectors, List and Matrices

```
my_sum <- 3+3
my_sum +3
```

```
## [1] 9
```

```
my_sum <- 3+3
my_list <- list
my_sum +3
```

```
## [1] 9
```

```
my_sum
```

```
## [1] 6
```

```
(another_sum <- 5+6)
```

```
## [1] 11
```

```
my_integer <- 1L
typeof(my_integer)
```

```
## [1] "integer"
```

```
my_integer <- 9
typeof(my_integer)
```

```
## [1] "double"
```

```
my_character <- "This is Text"
typeof(my_character)
```

```
## [1] "character"
```

```r
(my_logical <- FALSE)
```

```
## [1] FALSE
```

```r
typeof(my_logical)
```

```
## [1] "logical"
```

```r
my_double <- 5.6
typeof(my_double)
```

```
## [1] "double"
```

```r
double_vec <- c(3.1, 31, 311, 3111, 3.111)
str(double_vec)
```

```
##  num [1:5] 3.1 31 311 3111 3.11
```

```r
categories <- factor(c("C", "H", "A", "R", "L"))
str(categories)
```

```
##  Factor w/ 5 levels "A","C","H","L",..: 2 3 1 5 4
```

```r
categories_char <- c("C", "H", "A", "R", "L")
str(categories_char)
```

```
##  chr [1:5] "C" "H" "A" "R" "L"
```

```r
ranking <- c("Medium", "High", "Low")
str(ranking)
```

```
##  chr [1:3] "Medium" "High" "Low"
```

```r
ranking_factors <- ordered(ranking, levels = c("Low", "Medium", "High"))
str(ranking_factors)
```

```
##  Ord.factor w/ 3 levels "Low"<"Medium"<..: 2 3 1
```

```r
length(categories)
```

```
## [1] 5
```

```r
length(ranking_factors)
```

```
## [1] 3
```

```r
(my_sequence <- 1:10)
```

```
##  [1]  1  2  3  4  5  6  7  8  9 10
```

```r
(my_sequence <- seq(from = 1, to = 10))
```

```
##  [1]  1  2  3  4  5  6  7  8  9 10
```

```r
my_seq_two <- seq(from = 1, to = 10, by = 5)
my_seq_two
```

```
## [1] 1 6
```

```r
my_seq_three <- seq(from = 1, to = 10, by = 2)
my_seq_three
```

```
## [1] 1 3 5 7 9
```

```r
vec <- 1:5
str(vec)
```

```
##  int [1:5] 1 2 3 4 5
```

```r
new_vec <- c(vec, "hello")
str(new_vec)
```

```
##  chr [1:6] "1" "2" "3" "4" "5" "hello"
```

```r
mix <- c(TRUE, 6)
str(mix)
```

```
##  num [1:2] 1 6
```

```r
new_categories <- c(categories, 1)
str(new_categories)
```

```
##  num [1:6] 2 3 1 5 4 1
```

```r
str(categories)
```

```
##  Factor w/ 5 levels "A","C","H","L",..: 2 3 1 5 4
```

```r
(m <- matrix(c(1, 2, 3, 4), nrow = 2, ncol = 2))
```

```
##      [,1] [,2]
## [1,]    1    3
## [2,]    2    4
```

```r
(m <- matrix(vec, nrow = 5, ncol = 2))
```

```
##      [,1] [,2]
## [1,]    1    1
## [2,]    2    2
## [3,]    3    3
## [4,]    4    4
## [5,]    5    5
```

```r
my_list <- list(6, TRUE, "hello")
str(my_list)
```

```
## List of 3
##  $ : num 6
##  $ : logi TRUE
##  $ : chr "hello"
```

```r
new_list <- list(scalar = 6, vector = c("Heloo", "Goodbye"), matrix = matrix(1:4, nrow = 2, ncol = 2))
str(new_list)
```

```
## List of 3
##  $ scalar: num 6
##  $ vector: chr [1:2] "Heloo" "Goodbye"
##  $ matrix: int [1:2, 1:2] 1 2 3 4
```

```r
new_list$matrix
```

```
##      [,1] [,2]
## [1,]    1    3
## [2,]    2    4
```

```r
new_list$vec
```

```
## [1] "Heloo"   "Goodbye"
```