Data Types

1. type: num

```
# add a L if you want integers
a <- 2L + 3L
str(a)
```

```
 int 5
```

```
# is.double
b <- 2 + 3
str(b)
```

```
 num 5
```

```
# convert with as.integer
bi <- as.integer(b)
str(bi)
```

```
 int 5
```

```
c <- pi/3
str(c)
```

```
 num 1.05
```

```
c(c, typeof(c))
```

```
[1] "1.0471975511966" "double"
```

2. type: chr

(strings are represented as `chr`)

```
# single letter single quotes
# multiple letters double quotes

c <- c("I believe")
str(c)
```

```
 chr "I believe"
```

```
typeof(c)
```

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

```
# merge strings
d <- paste("I really","believe")
str(d)
```

```
 chr "I really believe"
```

3. type: factor

```
e <- factor(c("head","tail"))
str(e)
```

```
 Factor w/ 2 levels "head","tail": 1 2
```

4. type: vector

```
vec = c(1, 2, 3, 5)
vec <- vec + 1
vec
```

```
[1] 2 3 4 6
```

```
str(vec)
```

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

1. type: vec-matrix
2. type: dataframe

5. type: matrix

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

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

```
str(m)
```

```
 num [1:2, 1:2] 1 2 3 4
```

6. type: dataframe

```
f <- c("dogs","cats","gerbils")
g <- c(3, 5, 8)
df <- data.frame(animal=f, num=g)
df
```

```
   animal num
1    dogs   3
2    cats   5
3 gerbils   8
```

```
str(df)
```

```
'data.frame':   3 obs. of  2 variables:
 $ animal: chr  "dogs" "cats" "gerbils"
 $ num   : num  3 5 8
```

7. type: list

```r
fruitlist <- list("apple","cherry",1024)
fruitlist[1]
```

```
[[1]]
[1] "apple"
```

```r
str(fruitlist)
```

```
List of 3
 $ : chr "apple"
 $ : chr "cherry"
 $ : num 1024
```