R Data Types

Young W. Lim

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Outline

Based on

"R for Everyone - Advanced Analytics and Graphic" J. P. Lander

TOC

- Numeric Data
- Character Data
- Dates
- Logical Data

Numeric Data

```
is.numeric(x)
i <- 5L
i
is.integer(i)
is.numeric(i)
class(4L)
class(2.8)
4L * 2.8
class(4L * 2.8)
class(5L)
class(2L)
5L/2L
class(5L/2L)
```

Converting into a CSV file

```
x<- "data"
x
y <- factor("data")
nchar("hello")
nchar(3)
nchar(422)
nchar(y)
```

Dates

```
date1 <- as.Date("2012-06-02")
date1
class(date1)
as.numeric(date1)
date2<- as.POSIXct("2012-06-02 11:32")
date2
class(date2)
as.numeric(date2)
class(date1)
class(as.numeric(date1))
```

Logical Data

```
TRUE * 5
FALSE * 6
k <- TRUE
class(k)
is.logical(k)
TURE
T
class(T)
T <- 7
T
class(T)
2 == 3
2 != 3
2 < 3
2 > 3
2 >= 3
"data" == "stats"
```

Double (1)

- Create, coerce to or test for a double-precision vector.
- `double(length = 0)`
- `as.double(x, ...)`
- `is.double(x)`
- `single(length = 0)`
- `as.single(x, ...)`
- `length`: A non-negative integer specifying the desired length. Double values will be coerced to integer: supplying an argument of length other than one is an error.

`https://stat.ethz.ch/R-manual/R-devel/library/base/html/double.html`

Double (2)

- double creates a double-precision vector of the specified length. The elements of the vector are all equal to 0. It is identical to numeric.
- as.double is a generic function. It is identical to as.numeric. Methods should return an object of base type "double".
- is.double is a test of double type.
- R has no single precision data type.

All real numbers are stored in double precision format. The functions as.single and single are identical to as.double and double except they set the attribute Csingle that is used in the .C and .Fortran interface, and they are intended only to be used in that context.

`https://stat.ethz.ch/R-manual/R-devel/library/base/html/double.html`

MPFR (Multiple Precision Floating-point Reliably)

```
exp(1)
print(exp(1), digits=17)

require("Rmpfr")
(one <- mpfr(1, 120))
exp(one)
ns <- 1:24; factorial(ns)

ns <- mpfr(1:24, 120); factorial(ns)
```

https://cran.r-project.org/web/packages/Rmpfr/vignettes/Rmpfr-pkg.pdf