

r_int_day_1_r_operator

Nicholus Tint Zaw

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Types of the operator in R language

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referenace: <https://www.geeksforgeeks.org/r-operators/>

Arithmetic Operators

Addition operator (+):

```
1 + 1
```

```
## [1] 2
```

```
c(1, 3, 5) + c(4, 6, 8)
```

```
## [1] 5 9 13
```

Subtraction Operator (-):

```
569 - 456
```

```
## [1] 113
```

```
c(4, 69, 20) - c(34, 45, 200)
```

```
## [1] -30 24 -180
```

```
set.seed(2435)

x <- sample(1:10, 3, replace=TRUE)
y <- sample(1:10, 3, replace=TRUE)

x
```

```
## [1] 6 8 9
```

```
y
```

```
## [1] 9 10 10
```

```
x - y
```

```
## [1] -3 -2 -1
```

Multiplication Operator (*):

```
4 * 5
```

```
## [1] 20
```

```
x * y
```

```
## [1] 54 80 90
```

Division Operator (/):

```
30/3
```

```
## [1] 10
```

```
y/x
```

```
## [1] 1.500000 1.250000 1.111111
```

Power Operator (^):

```
690 ^ 0
```

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

```
x ^ 1
```

```
## [1] 6 8 9
```

```
x ^ y
```

```
## [1] 10077696 1073741824 3486784401
```

Modulo Operator (%%):

```
22%%7
```

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

```
x %% 3
```

```
## [1] 0 2 0
```

```
x %% y
```

```
## [1] 6 8 9
```

Logical Operators

Logical AND operator (&):

```
random <- sample(1:20, 10, replace = TRUE)
```

```
random
```

```
## [1] 3 2 5 14 17 18 6 14 11 2
```

```
random >= 3 & random < 10
```

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

Logical OR operator (|):

```
random
```

```
## [1] 3 2 5 14 17 18 6 14 11 2
```

```
random > 3 | random < 10 # why all TRUE?
```

```
## [1] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE
```

Relational Operators

```
# greater than  
1 > 0
```

```
## [1] TRUE
```

```
c(c, y)
```

```
## [[1]]  
## function (...) .Primitive("c")  
##  
## [[2]]  
## [1] 9  
##  
## [[3]]  
## [1] 10  
##  
## [[4]]  
## [1] 10
```

```
# greater than and equal to  
x >= y
```

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

```
# less than  
5 < 2
```

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

```
x < y
```

```
## [1] TRUE TRUE TRUE
```

```
# less than and equal to  
5 <= 10
```

```
## [1] TRUE
```

```
x
```

```
## [1] 6 8 9
```

```
y
```

```
## [1] 9 10 10
```

```
x <= y
```

```
## [1] TRUE TRUE TRUE
```

```
# equal to
```

```
1 == 0 # note: it is double equal
```

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

```
1 == 1
```

```
## [1] TRUE
```

```
# not equal to
```

```
1 != 0
```

```
## [1] TRUE
```

```
0 != 0
```

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

Assignment Operators

```
x <- 1
```

```
i <- c(1, 3, 5)
```

```
y <- sample(100:200, 5, replace = TRUE)
```

```
c(x, i, y)
```

```
## [1] 1 1 3 5 196 121 156 199 198
```

Miscellaneous Operator

%in% Operator:

```
# with numeric vector
```

```
x <- c(1, 5, 7, 0, 10)
```

```
0 %in% x
```

```
## [1] TRUE
```

```
15 %in% x
```

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

```
# with string vector
```

```
strvector <- c("A", "B", "C", "D")
```

```
"A" %in% strvector
```

```
## [1] TRUE
```

```
"G" %in% strvector
```

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