Arrays Operations in R

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1 Array Basics

Go to the **RMD**, **R**, **PDF**, or **HTML** version of this file. Go back to fan's REconTools Package, R Code Examples Repository (bookdown site), or Intro Stats with R Repository (bookdown site).

1.1 Multidimesional Arrays

1.1.1 Repeat one Number by the Size of an Array

```
ar_a <- c(1,2,3)
ar_b <- c(1,2,3/1,2,3)
rep(0, length(ar_a))
```

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

1.1.2 Generate 2 Dimensional Array

```
# Multidimensional Array
# 1 is r1c1t1, 1.5 in r2c1t1, 0 in r1c2t1, etc.
# Three dimensions, row first, column second, and tensor third
x <- array(c(1, 1.5, 0, 2, 0, 4, 0, 3), dim=c(2, 2, 2))
dim(x)
```

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

```
print(x)
```

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

```
## [1,]  1.0    0
## [2,]  1.5    2
##
## , , 2
##
##      [,1] [,2]
## [1,]    0    0
## [2,]    4    3
```

1.2 Array Slicing

1.2.1 Remove Elements of Array

Select elements with direct indexing, or with head and tail functions. Get the first two elements of three elements array.

```
# Remove last element of array
vars.group.bydf <- c('23','dfa', 'wer')
vars.group.bydf[-length(vars.group.bydf)]
```

```
## [1] "23"  "dfa"
```

```
# Use the head function to remove last element
head(vars.group.bydf, -1)
```

```
## [1] "23"  "dfa"
```

```
head(vars.group.bydf, 2)
```

```
## [1] "23"  "dfa"
```

Get last two elements of array.

```
# Remove first element of array
vars.group.bydf <- c('23','dfa', 'wer')
vars.group.bydf[2:length(vars.group.bydf)]
```

```
## [1] "dfa" "wer"
```

```
# Use Tail function
tail(vars.group.bydf, -1)
```

```
## [1] "dfa" "wer"
```

```
tail(vars.group.bydf, 2)
```

```
## [1] "dfa" "wer"
```

1.3 NA in Array

1.3.1 Check if NA is in Array

```
# Convert Inf and -Inf to NA
x <- c(1, -1, Inf, 10, -Inf)
na_if(na_if(x, -Inf), Inf)
```

```
## [1]  1 -1 NA 10 NA
```

1.4 Notations

1.4.1 e notation

1. Case one: *1.149946e+00*
    - this is approximately: 1.14995
2. Case two: *9.048038e-01*
    - this is approximately: 0.90480
3. Case three: *9.048038e-01*
    - this is approximately: 0.90480