

R Generate and Combine Fixed and Random Matrix

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Generate Matrixes

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Create a N by 2 Matrix from 3 arrays Names of each array become row names automatically.

```
ar_row_one <- c(-1,+1)
ar_row_two <- c(-3,-2)
ar_row_three <- c(0.35,0.75)

mt_n_by_2 <- rbind(ar_row_one, ar_row_two, ar_row_three)
kable(mt_n_by_2) %>%
  kable_styling_fc()
```

ar_row_one	-1.00	1.00
ar_row_two	-3.00	-2.00
ar_row_three	0.35	0.75

```
# An empty matrix with Logical NA
mt_named <- matrix(data=NA, nrow=2, ncol=2)
colnames(mt_named) <- paste0('c', seq(1,2))
rownames(mt_named) <- paste0('r', seq(1,2))
mt_named
```

Name Matrix Columns and Rows

```
  c1 c2
r1 NA NA
r2 NA NA
```

Generate NA Matrix

- [Best way to allocate matrix in R, NULL vs NA?](#)

Allocate with NA or NA_real_ or NA_int_. Clarity in type definition is preferred.

```
# An empty matrix with Logical NA
mt_na <- matrix(data=NA, nrow=2, ncol=2)
str(mt_na)
```

```
logi [1:2, 1:2] NA NA NA NA
# An empty matrix with numerical NA
mt_fl_na <- matrix(data=NA_real_, nrow=2, ncol=2)
mt_it_na <- matrix(data=NA_integer_, nrow=2, ncol=2)

str(mt_fl_na)
```

```
num [1:2, 1:2] NA NA NA NA
str(mt_fl_na)
```

```
num [1:2, 1:2] NA NA NA NA
```

Generate Random Matrixes Random draw from the normal distribution, random draw from the uniform distribution, and combine resulting matrixes.

```
# Generate 15 random normal, put in 5 rows, and 3 columns
mt_rnorm <- matrix(rnorm(15,mean=0,sd=1), nrow=5, ncol=3)

# Generate 15 random normal, put in 5 rows, and 3 columns
mt_runif <- matrix(runif(15,min=0,max=1), nrow=5, ncol=5)

# Combine
mt_rnorm_runif <- cbind(mt_rnorm, mt_runif)

# Display
kable(mt_rnorm_runif) %>%
  kable_styling_fc_wide()
```

0.2778321	-0.3453633	-0.3920888	0.9862709	0.6349135	0.6179957	0.9862709	0.6349135
-1.9860529	-1.2907716	1.4650188	0.3604753	0.0232763	0.6548183	0.3604753	0.0232763
-0.1795298	0.0555064	-2.4365586	0.6472517	0.7209394	0.2922925	0.6472517	0.7209394
2.1734250	1.5875223	0.0480842	0.5215435	0.3434757	0.0393949	0.5215435	0.3434757
0.1594480	-0.9830977	1.0420199	0.8165124	0.8223376	0.6184914	0.8165124	0.8223376