

Lecture 12 - R Software

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rbind() and cbind()

```
> rbind(1:3, 1:3)
```

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

```
> cbind(1:3, 1:3)
```

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

```
> m = matrix(1:6, nrow = 2, byrow = TRUE )
```

```
> rbind(m, 7:9)
```

```
      [, 1] [, 2] [, 3]
[1, ]    1    2    3
[2, ]    4    5    6
[3, ]    7    8    9
```

```
> cbind(m, c(10, 11))
      [ , 1] [ , 2] [ , 3] [ , 4]
[1 , ]    1     2     3     10
[2 , ]    4     5     6     11
```

Naming a Matrix

Suppose, the matrix `m` is defined as above. In order to define, the names of individual rows and columns, we have

```
> m = matrix(1:6, nrow = 2, byrow = TRUE )
```

```
> rownames(m) = c( "row1", "row2 " )
```

```
> m
```

```
      [ , 1] [ , 2] [ , 3]
row1     1     2     3
row2     4     5     6
```

```
> colnames(m) = c( "col1", "col2", "col3" )
```

```
> m
```

```
      col1 col2 col3
row1     1     2     3
row2     4     5     6
```

List Objects

Definition: A list is a series of items(of same type or different) bundled together to form a single object.

Vector-Matrix-List

- Vector: 1D, same type
- Matrix: 2D, same type
- List
 - Different **R** objects
 - Loss of some functionality relating to objects.

`list()`: The command to create lists.

```
> c("Rsome times ", 190, 5)
[1] " Rsome times "    " 190 "    " 5 "
```

```
> list("Rsome times ", 190, 5)
[[1]]
[1] "Rsome times "
```

Name list

```
> song = list("Rsome times ", 190, 5)
> names(song) = c("title", "duration", "track")
> song
$title
[1] "Rsome times "
$duration
[1] 190
$track
[1] 5
```