INTRODUCTION TO R

Subsetting Matrices

Subset element

```
> m <- matrix(sample(1:15, 12), nrow = 3)

> m
     [,1] [,2] [,3] [,4]
[1,]    5   11   15    3
[2,]   12   14    8    9
[3,]    6    1    4    2

> m[1,3]
[1] 15

> m[3,2]
[1] 1
```

Subset column or row

```
> m[3,]
[1] 6 1 4 2

> m[,3]
[1] 15  8  4

> m[4]
[1] 11

> m[9]
[1] 4
```

```
> m
     [,1] [,2] [,3] [,4]
[1,]    5   11   15    3
[2,]   12   14    8    9
[3,]    6    1    4    2
```

Subset multiple elements

```
> m[2, c(2, 3)]
[1] 14  8

> m[c(1, 2), c(2, 3)]
     [,1] [,2]
[1,]   11   15
[2,]   14    8

> m[c(1, 3), c(1, 3, 4)]
     [,1] [,2] [,3]
[1,]    5   15    3
[2,]    6    4    2
```

```
> m
     [,1] [,2] [,3] [,4]
[1,]    5   11   15    3
[2,]   12   14    8    9
[3,]    6    1    4    2
```

Subset by name

```
> rownames(m) <- c("r1", "r2", "r3")
> colnames(m) <- c("a", "b", "c", "d")
> m
    a  b  c d
r1  5 11 15 3
r2 12 14  8 9
r3  6  1  4 2
```

```
> m[2,3]
[1] 8

> m["r2","c"]
[1] 8
```

```
> m[2,"c"]
[1] 8

> m[3, c("c", "d")]
c d
4 2
```

Subset with logical vector

```
> m[c(FALSE, FALSE, TRUE),
    c(FALSE, FALSE, TRUE, TRUE)]
c d
4 2

> m[c(FALSE, FALSE, TRUE),
    c(FALSE, TRUE)]
b d
1 2

> m[c(FALSE, FALSE, TRUE),
    c(FALSE, TRUE, FALSE, TRUE)]
b d
1 2
```

```
> m
    a  b  c d
r1  5 11 15 3
r2 12 14  8 9
r3  6  1  4 2
```

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Let’s practice!