INTRODUCTION TO R

Subsetting Vectors

Subset by index

```
> remain <- c(spades = 11, hearts = 12,
              diamonds = 11, clubs = 13)

> remain[1]
spades
    11

> remain[3]
diamonds
      11
```

[1] -> take element at index 1

result is a (named) vector too!

Subset by name

```
> remain <- c(spades = 11, hearts = 12,
              diamonds = 11, clubs = 13)

> remain["spades"]
spades
    11

> remain["diamonds"]
diamonds
      11
```

Subset multiple elements

```
> remain <- c(spades = 11, hearts = 12,
              diamonds = 11, clubs = 13)

> remain_black <- remain[c(1, 4)]
> remain_black
spades  clubs
    11     13

> remain[c(4, 1)]
 clubs spades
    13     11

> remain[c("clubs", "spades")]
 clubs spades
    13     11
```

order in selection vector matters!

Subset all but some

```
> remain <- c(spades = 11, hearts = 12,
              diamonds = 11, clubs = 13)

> remain[-1]
  hearts diamonds    clubs
      12        11       13

> remain[-c(1, 2)]
diamonds    clubs
      11       13

> remain[-"spades"]
Error in -"spades" : invalid argument to unary operator
```

All but index 1 are returned

Subset using logical vector

```
> remain <- c(spades = 11, hearts = 12,
              diamonds = 11, clubs = 13)

> remain[c(FALSE, TRUE, FALSE, TRUE)]
hearts  clubs
    12     13

> selection_vector <- c(FALSE, TRUE, FALSE, TRUE)
> remain[selection_vector]
hearts  clubs
    12     13
```

Subset using logical vector

```
> remain <- c(spades = 11, hearts = 12,
              diamonds = 11, clubs = 13)

> remain[c(TRUE, FALSE)]
  spades diamonds
      11       11
> remain[c(TRUE, FALSE, TRUE, FALSE)]
  spades diamonds
      11       11

> remain[c(TRUE, FALSE, TRUE)]
  spades diamonds    clubs
      11       11       13
> remain[c(TRUE, FALSE, TRUE, TRUE)]
  spades diamonds    clubs
      11       11       13
```

R recycles `c(T, F)` to `c(T, F, T, F)`