LOGICAL OPERATORS

> greater than
>= greater than or equal to
< less than
<= less than or equal to
== equal to
!= not equal to

LOGICAL VECTORS

For all [i], is u[i] > 5?

u > 5

v1 = (u > 5)

The output is a vector of size same as u with elements 0 (false) and/or 1 (true)

How many elements are > 5?

sum(v1)

sum(u > 5)

To see which elements are > 5

which(u > 5)

Is u[i] > 2 AND u[i] <= 3 ?

v2 = (u > 2 & u <= 3)

Is u[i] < 2 OR u[i] = 3?

v3 = (u < 2 | u == 3)

v4 = (u != 2)

Replace the values of u less than 1 or more than 2 by zero

u[u < 1 | u > 2] = 0

Taking subsets

u = seq(11, 13, .1)

v = seq(21, 26, .2)

u[u > 12]

v[u > 12]

What object is above?

v1 = v[u > 12]

Character vectors

c1 = c("A", "B", "C", "B", "A")

You can also use the following

c1 = c('A', 'B', 'C', 'B', 'A')

Recoding

2 categories:

For u < 12, w = 0
For u >= 12, w = 1

w = ifelse(u < 12, 0, 1)

More than 2 categories

For u <= 11.6, w = 0
For 11.6 < u < 12.5, w = 1
For u >= 12.5, w = 2

w = rep(1, length(u))
w[u <= 11.6] = 0
w[u > 12.5] = 2

Empty vectors

a = c()

a

a[3] = 7

a

NA means missing values in R