Creating Variable by using <-

Example : a <- “abc” It is case sensitive

Checking data type such as character or numeric is done by: class (*variable*)

Example:

a <- “abc”

class (a)

“character”

Converting numeric to character by: as.character(*variable*)

Example:

a <- 10

class (a)

“numeric”

a <- as.character(a)

a

“10”

class(a)

“character”

Data types available in R

Numeric – Whole Number

Integer – Integers

Character – Strings

Factor – Categorical Variable

Logical – TRUE or FALSE

Commonly used data structures in R

Homogeneous: Can store values of only one data type

Vector – One dimensional

Matrix – Two dimensional – having rows and columns

Heterogeneous: Used to save two different data types in one object

Data frame – Two dimensional– having rows and columns

List

**Vectors:**

Why vectors are necessary? To create a single array of values of a specific data type

Example – to create 10 numeric values : numeric can be used

a <- numeric(10)

a

0 0 0 0 0 0 0 0 0 0

To create character values

b <- character(10)

b

“” “” “” “” “” “” “” “” “” “”

Assigning values by using the assignment operator: []

Example – to assign value 10 to 10th position

a[10] <- 10

a

0 0 0 0 0 0 0 0 0 10

Assigning values at one go by using combine function: c(*values*)

a <- numeric(10)

a

0 0 0 0 0 0 0 0 0 0

a <- c(1,2,3,4,5,6,7,8,9,10)

a

1 2 3 4 5 6 7 8 9 10

This further can be simplified by giving a range - :

a <- numeric(10)

a

0 0 0 0 0 0 0 0 0 0

a <- 1:10

a

1 2 3 4 5 6 7 8 9 10

To combine two variables we can use: out <- c(*variable a, variable b*)

a <- 1:10

a

1 2 3 4 5 6 7 8 9 10

b <- 11:20

b

11 12 13 14 15 16 17 18 19 20

out <- c(a,b)

out

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Creation of special vector sequences:

Repeat function: rep(*value to be repeated, times to be repeated*)

c <- rep(1,5)

c

1 1 1 1 1

Combine repeat: rep(c(1,2),5)

c <- rep(c(1,2),5)

c

1 2 1 2 1 2 1 2 1 2

Creating sequence: seq(*Starting value,ending value, by=interval*)

d <- seq(1,10,by=2)

d

1 3 5 7 9

seq(*Starting value,ending value, length=length of numbers*)

a <- seq(1,5,length=6)

a

1. 1.8 2.6 3.4 4.2 5.0