Assignment 5.2

1. Obtain the elements of the union between two character vectors.

vec1 = c(rownames(mtcars[1:15,]))

vec2 = c(rownames(mtcars[10:32,]))

vec1

vec2

union(vec1, vec2) # returns all the elements of vec1 and vec2 without repeating common elements

Answer:

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| --- |
| > union(vec1, vec2) # returns all the elements of vec1 and vec2 without repeating common elements  [1] "Mazda RX4" "Mazda RX4 Wag" "Datsun 710" "Hornet 4 Drive"  [5] "Hornet Sportabout" "Valiant" "Duster 360" "Merc 240D"  [9] "Merc 230" "Merc 280" "Merc 280C" "Merc 450SE"  [13] "Merc 450SL" "Merc 450SLC" "Cadillac Fleetwood" "Lincoln Continental"  [17] "Chrysler Imperial" "Fiat 128" "Honda Civic" "Toyota Corolla"  [21] "Toyota Corona" "Dodge Challenger" "AMC Javelin" "Camaro Z28"  [25] "Pontiac Firebird" "Fiat X1-9" "Porsche 914-2" "Lotus Europa"  [29] "Ford Pantera L" "Ferrari Dino" "Maserati Bora" "Volvo 142E" |
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| |  | | --- | |  | |

2. Get those elements that are common to both vectors.

Solution:

vec1 = c(rownames(mtcars[1:15,]))

vec2 = c(rownames(mtcars[10:32,]))

intersect(vec1,vec2) # names of common elements

which(vec1 %in% vec2) # index of common elements

vec1[which(vec1 %in% vec2)] # names of common elements

Answser:

> intersect(vec1,vec2) # names of common elements

[1] "Merc 280" "Merc 280C" "Merc 450SE" "Merc 450SL"

[5] "Merc 450SLC" "Cadillac Fleetwood"

> which(vec1 %in% vec2) # index of common elements

[1] 10 11 12 13 14 15

> vec1[which(vec1 %in% vec2)] # names of common elements

[1] "Merc 280" "Merc 280C" "Merc 450SE" "Merc 450SL"

[5] "Merc 450SLC" "Cadillac Fleetwood"

3. Get the difference of the elements between two character vectors.

vec1 = c(rownames(mtcars[1:15,]))

vec2 = c(rownames(mtcars[10:32,]))

setdiff(vec1, vec2) # difference of vec 1 with vec 2

setdiff(vec2, vec1) # difference of vec 2 with vec 1

Answer:

> setdiff(vec1, vec2) # difference of vec 1 with vec 2

[1] "Mazda RX4" "Mazda RX4 Wag" "Datsun 710" "Hornet 4 Drive"

[5] "Hornet Sportabout" "Valiant" "Duster 360" "Merc 240D"

[9] "Merc 230"

> setdiff(vec2, vec1) # difference of vec 2 with vec 1

[1] "Lincoln Continental" "Chrysler Imperial" "Fiat 128" "Honda Civic"

[5] "Toyota Corolla" "Toyota Corona" "Dodge Challenger" "AMC Javelin"

[9] "Camaro Z28" "Pontiac Firebird" "Fiat X1-9" "Porsche 914-2"

[13] "Lotus Europa" "Ford Pantera L" "Ferrari Dino" "Maserati Bora"

[17] "Volvo 142E"

4. Test the quality of two character vectors.

vec1 = c(rownames(mtcars[1:15,]))

vec2 = c(rownames(mtcars[11:25,]))

setequal(vec1, vec2) # is vec1 equal to vec 2

> setequal(vec1, vec2) # is vec1 equal to vec 2

[1] FALSE

setequal( union(vec1, vec2),

c(setdiff(vec1, vec2), intersect(vec1, vec2), setdiff(vec1, vec2)))

Answer:

setequal( union(vec1, vec2),

c(setdiff(vec1, vec2), intersect(vec1, vec2), setdiff(vec1, vec2)))

[1] FALSE