

# SESSION 5: Data Management Using R

# Assignment 2

#### **Problem Statement**

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

```
vec1 = c(rownames(mtcars[1:15,]))
vec2 = c(rownames(mtcars[10:32,]))
```

#### **R-Script**

#### R-snapshot

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

```
> vec2 = c(rownames(mtcars[10: 32,]))
> vec2
 [1] "Merc 280"
                            "Merc 280C"
                                                    "Merc 450SE"
                                                                           "Me
                    "Merc 450SLC"
                                           "Cadillac Fleetwood"
rc 450SL"
 [7] "Lincoln Continental" "Chrysler Imperial"
                                                    "Fiat 128"
                                                                           "Но
nda Civic"
                    "Toyota Corolla"
                                           "Toyota Corona"
[13] "Dodge Challenger"
                                                    "Camaro Z28"
                            "AMC Javelin"
                                                                           "Po
ntiac Firebird"
                    "Fiat X1-9"
                                           "Porsche 914-2"
[19] "Lotus Europa"
                            "Ford Pantera L"
                                                    "Ferrari Dino"
                                                                           "Ma
                    "Vol vo 142E"
serati Bora"
```

| LEGI MONO HOUSE                                    | MOLE TOOSES         | Cautitiae i recenoua |                    |                  |            |  |  |
|--|---------------------|----------------------|--------------------|------------------|------------|--|--|
| <pre>&gt; vec2 = c(rownames(mtcars[10:32,]))</pre> |                     |                      |                    |                  |            |  |  |
| > vec2   |                     |                      |                    |                  |            |  |  |
| [1] "Merc 280"                                     | "Merc 280C"         | "Merc 450SE"         | "Merc 450SL"       | "Merc 450SLC"    | "Cadillac  |  |  |
| Fleetwood"   |                     |                      |                    |                  |            |  |  |
| [7] "Lincoln Continental"                          | "Chrysler Imperial" | "Fiat 128"           | "Honda Civic"      | "Toyota Corolla" | "Toyota Co |  |  |
| rona"  |                     |                      |                    |                  |            |  |  |
| [13] "Dodge Challenger"                            | "AMC Javelin"       | "Camaro Z28"         | "Pontiac Firebird" | "Fiat X1-9"      | "Porsche 9 |  |  |
| 14-2"  |                     |                      |                    |                  |            |  |  |
| [19] "Lotus Europa"                                | "Ford Pantera L"    | "Ferrari Dino"       | "Maserati Bora"    | "Volvo 142E"     |            |  |  |

## **Output:**

# union(vec1,vec2)

```
> uni on(vec1, vec2)
 [1] "Mazda RX4"
                             "Mazda RX4 Wag"
                                                    "Datsun 710"
                                                                            "Ho
rnet 4 Drive"
                    "Hornet Sportabout"
                                            "Valiant"
 [7] "Duster 360"
                             "Merc 240D"
                                                    "Merc 230"
                                                                            "Me
                    "Merc 280C"
rc 280"
                                            "Merc 450SE"
                             "Merc 450SLC"
[13] "Merc 450SL"
                                                    "Cadillac Fleetwood"
                                                                            "Li
ncoln Continental"
                    "Chrysler Imperial"
                                            "Fiat 128"
                             "Toyota Corolla"
                                                    "Toyota Corona"
[19] "Honda Civic"
                                                                            "Do
dge Challenger"
                    "AMC Javelin"
                                            "Camaro Z28"
[25] "Pontiac Firebird"
                             "Fiat X1-9"
                                                    "Porsche 914-2"
                                                                            "Lo
tus Europa"
                    "Ford Pantera L"
                                            "Ferrari Dino"
[31] "Maserati Bora"
                            "Vol vo 142E"
```

|              | ion(vec1,vec2)<br>"Mazda RX4" | "Mazda RX4 Wag"  | "Datsun 710"         | "Hornet 4 Drive"      | "Hornet Sportabout" | "Valiant"  |
|--------------|-------------------------------|------------------|----------------------|-----------------------|---------------------|------------|
| [7]          | "Duster 360"                  | "Merc 240D"      | "Merc 230"           | "Merc 280"            | "Merc 280C"         | "Merc 450s |
| _            | "Merc 450SL"                  | "Merc 450SLC"    | "Cadillac Fleetwood" | "Lincoln Continental" | "Chrysler Imperial" | "Fiat 128" |
| [19]<br>8"   | "Honda Civic"                 | "Toyota Corolla" | "Toyota Corona"      | "Dodge Challenger"    | "AMC Javelin"       | "Camaro Z2 |
| [25]<br>ino" | "Pontiac Firebird"            | "Fiat X1-9"      | "Porsche 914-2"      | "Lotus Europa"        | "Ford Pantera L"    | "Ferrari D |
|              | "Maserati Bora"               | "Volvo 142E"     |                      |                       |                     |            |

#### **Problem Statement**

2. Get those elements that are common to both vectors

```
vec1 = c(rownames(mtcars[1:15,]))
vec2 = c(rownames(mtcars[10:32,]))
```

## **R-Script**

```
> vec1 = c(rownames(mtcars[1:15,]))
> vec1
[1] "Mazda RX4"
                    "Mazda RX4 Wag"
                                    "Datsun 710"
                                                    "Horne
t 4 Drive" "Hornet Sportabout" "Valiant"
[7] "Duster 360" "Merc 240D"
                                    "Merc 230"
                                                    "Merc
          "Merc 280C" "Merc 450SE"
                  "Merc 450SLC"
[13] "Merc 450SL"
                                    "Cadillac Fleetwood"
R-snapshot
```

```
> vec1
[1] "Mazda RX4" "Mazda RX4 wag" "Datsun 710" "Hornet 4 Drive" "Hornet Sportabout" "Valiant"
[7] "Duster 360" "Merc 240D" "Merc 230" "Merc 280" "Merc 280C" "Merc 450SE"
[13] "Merc 450SL" "Merc 450SLC" "Cadillac Fleetwood"
>
```

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

```
> vec2 = c(rownames(mtcars[10: 32,]))
> vec2
 [1] "Merc 280"
                                "Merc 280C"
                                                          "Merc 450SE"
                                                                                    "Me
rc 450SL"
                      "Merc 450SLC"
                                                "Cadillac Fleetwood"
                                                                                    "Но
 [7] "Lincoln Continental" "Chrysler Imperial" "Fiat 128"
nda Civic" "Toyota Corolla" "Toyota Corona" [13] "Dodge Challenger" "AMC Javelin" "Camaro
                                                         "Camaro Z28"
                                                                                    "Po
ntiac Firebird" "Fiat X1-9" "Porsche 914-2"
[19] "Lotus Europa" "Ford Pantera L" "Ferrari Dino"
                                                                                    "Ma
serati Bora" "Volvo 142E"
```

## **Output:**

## intersect(vec1,vec2)

#### **Problem Statement**

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

```
vec1 = c(rownames(mtcars[1:15,]))
vec2 = c(rownames(mtcars[10:32,]))
```

# **R-Script**

## R-snapshot

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

```
> vec2 = c(rownames(mtcars[10: 32,]))
> vec2
 [1] "Merc 280"
                          "Merc 280C"
                                                 "Merc 450SE"
                                                                       "Me
                                        "Cadillac Fleetwood"
rc 450SL"
                  "Merc 450SLC"
[7] "Lincoln Continental" "Chrysler Imperial" "Fiat 128"
                                                                       "Но
nda Civic"
                  "Toyota Corolla"
                                         "Toyota Corona"
[13] "Dodge Challenger" "AMC Javelin"
                                                 "Camaro Z28"
                                                                       "Po
                                        "Porsche 914-2"
ntiac Firebird"
                   "Fiat X1-9"
[19] "Lotus Europa"
                          "Ford Pantera L"
                                                 "Ferrari Dino"
                                                                       "Ma
                  "Vol vo 142E"
serati Bora"
```

## **Output:**

## setdiff(vec1,vec2)

```
> setdiff(vec1, vec2)
[1] "Mazda RX4"
                                "Mazda RX4 Wag"
                                                            "Datsun 710"
                                                                                        "Hornet 4
Drive" "Hornet Sportabout" "Valiant"
[7] "Duster 360"
                                 "Merc 240D"
                                                            "Merc 230"
> setdiff(vec1,vec2)
[1] "Mazda RX4"
[7] "Duster 360"
                      "Mazda RX4 Wag"
                                       "Datsun 710"
                                                                         "Hornet Sportabout" "Valiant"
                                                        "Hornet 4 Drive"
                      "Merc 240D"
                                       "Merc 230'
```

## setdiff(vec2,vec1)

```
> setdiff(vec2, vec1)
 [1] "Lincoln Continental" "Chrysler Imperial" "Fiat 128"
                                                                                                                    "Но
 nda Civic" "Toyota Corolla" "Toyota Corona"

[7] "Dodge Challenger" "AMC Javelin" "Camarontiac Firebird" "Fiat X1-9" "Porsche 914-2"
nda Civic"
                                                                                "Camaro Z28"
                                                                                                                     "Po
ntiac Firebird" "Fiat X1-9" "Porsche 914-2" [13] "Lotus Europa" "Ford Pantera L" "Ferrari Dino"
                                                                                                                    "Ma
                           "Vol vo 142E"
serati Bora"
Setdiff(vec2,vec1)
[1] "Lincoln Continental" "Chrysler Imperial" "Fiat 128"
rona"
[7] "Dodge Challenger" "AMC Javelin" "Camaro Z28"
                                                                    "Honda Civic"
                                                                                           "Toyota Corolla"
                                                                                                                 "Toyota Co
                                                                    "Pontiac Firebird"
                                                                                          "Fiat X1-9"
[13] "Lotus Europa"
                          "Ford Pantera L"
                                               "Ferrari Dino"
                                                                     "Maserati Bora"
                                                                                           "Volvo 142E"
```

#### **Problem Statement**

4. Test the quality of two character vectors

```
vec1 = c(rownames(mtcars[1:15,]))
vec2 = c(rownames(mtcars[11:25,]))
```

## **R-Script**

# **R-snapshot**

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

```
> vec2 = c(rownames(mtcars[10: 32,]))
> vec2
[1] "Merc 280"
                                                                     "Me
                          "Merc 280C"
                                                "Merc 450SE"
rc 450SL"
                  "Merc 450SLC"
                                        "Cadillac Fleetwood"
[7] "Lincoln Continental" "Chrysler Imperial" "Fiat 128"
                                                                     "Но
nda Ci vi c"
                  "Toyota Corolla"
                                        "Toyota Corona"
[13] "Dodge Challenger"
                          "AMC Javelin"
                                                                     "Po
                                                "Camaro Z28"
                                       "Porsche 914-2"
ntiac Firebird" "Fiat X1-9"
[19] "Lotus Europa" "Ford Pantera L"
                                               "Ferrari Dino"
                                                                     "Ma
serati Bora"
                  "Vol vo 142E"
```

| > vec2 = c(rownames(mtcars                | [10:32,]))          | Cadiffac Freeemood |                    |                  |            |
|---|---------------------|--------------------|--------------------|------------------|------------|
| > vec2<br>[1] "Merc 280"                  | "Merc 280C"         | "Merc 450SE"       | "Merc 450SL"       | "Merc 450SLC"    | "Cadillac  |
| Fleetwood" [7] "Lincoln Continental"      | "Chrysler Imperial" | "Fiat 128"         | "Honda Civic"      | "Toyota Corolla" | "Toyota Co |
| rona"<br>[13] "Dodge Challenger"<br>14-2" | "AMC Javelin"       | "Camaro Z28"       | "Pontiac Firebird" | "Fiat X1-9"      | "Porsche 9 |
| [19] "Lotus Europa"                       | "Ford Pantera L"    | "Ferrari Dino"     | "Maserati Bora"    | "Volvo 142E"     |            |

#### **Output:**

## is.element(vec1,vec2)

```
> is.element(vec1, vec2)
```

[1] FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE TRUE TRUE TRUE TRUE TRUE TRUE TRUE

## identical(vec1,vec2)

> i denti cal (vec1, vec2)
[1] FALSE

## setequal(vec1,vec2)

> setequal (vec1, vec2)
[1] FALSE

# vec1 %in% vec2