1. **obtain the elements of the union between two character vectors.**

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

```
> vec1 = c(rownames(mtcars[1:15,]))
> vec1
 [1] "Mazda RX4"          "Mazda RX4 Wag"      "Datsun 710"
 [4] "Hornet 4 Drive"     "Hornet Sportabout"  "Valiant"
 [7] "Duster 360"         "Merc 240D"          "Merc 230"
[10] "Merc 280"           "Merc 280C"          "Merc 450SE"
[13] "Merc 450SL"         "Merc 450SLC"        "Cadillac Fleetwood"
> vec2 = c(rownames(mtcars[10:32,]))
> vec2
 [1] "Merc 280"            "Merc 280C"           "Merc 450SE"
 [4] "Merc 450SL"          "Merc 450SLC"         "Cadillac Fleetwood"
 [7] "Lincoln Continental" "Chrysler Imperial"   "Fiat 128"
[10] "Honda Civic"         "Toyota Corolla"      "Toyota Corona"
[13] "Dodge Challenger"    "AMC Javelin"         "Camaro Z28"
[16] "Pontiac Firebird"    "Fiat X1-9"           "Porsche 914-2"
[19] "Lotus Europa"        "Ford Pantera L"      "Ferrari Dino"
[22] "Maserati Bora"       "Volvo 142E"
> union(vec1, vec2)
 [1] "Mazda RX4"           "Mazda RX4 Wag"       "Datsun 710"
 [4] "Hornet 4 Drive"      "Hornet Sportabout"   "Valiant"
 [7] "Duster 360"          "Merc 240D"           "Merc 230"
[10] "Merc 280"            "Merc 280C"           "Merc 450SE"
[13] "Merc 450SL"          "Merc 450SLC"         "Cadillac Fleetwood"
[16] "Lincoln Continental" "Chrysler Imperial"   "Fiat 128"
[19] "Honda Civic"         "Toyota Corolla"      "Toyota Corona"
[22] "Dodge Challenger"    "AMC Javelin"         "Camaro Z28"
[25] "Pontiac Firebird"    "Fiat X1-9"           "Porsche 914-2"
[28] "Lotus Europa"        "Ford Pantera L"      "Ferrari Dino"
[31] "Maserati Bora"       "Volvo 142E"
```

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

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

```
> intersect(vec1, vec2)
[1] "Merc 280"          "Merc 280C"          "Merc 450SE"
[4] "Merc 450SL"        "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)
[1] "Mazda RX4"         "Mazda RX4 Wag"     "Datsun 710"        "Hornet 4
Drive"
[5] "Hornet Sportabout" "Valiant"           "Duster 360"        "Merc 240D
"
[9] "Merc 230"
```

**4. Test the equality of two character vectors**

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

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

```
> vec3 = c(rownames(mtcars[1:15,]))
> vec3
 [1] "Mazda RX4"           "Mazda RX4 Wag"       "Datsun 710"
 [4] "Hornet 4 Drive"      "Hornet Sportabout"   "Valiant"
 [7] "Duster 360"          "Merc 240D"           "Merc 230"
[10] "Merc 280"            "Merc 280C"           "Merc 450SE"
[13] "Merc 450SL"          "Merc 450SLC"         "Cadillac Fleetwood"
> vec4 = c(rownames(mtcars[11:25,]))
> vec4
 [1] "Merc 280C"           "Merc 450SE"            "Merc 450SL"
 [4] "Merc 450SLC"         "Cadillac Fleetwood"    "Lincoln Continental"
 [7] "Chrysler Imperial"   "Fiat 128"              "Honda Civic"
[10] "Toyota Corolla"      "Toyota Corona"         "Dodge Challenger"
[13] "AMC Javelin"         "Camaro Z28"            "Pontiac Firebird"
> setequal(vec3, vec4)
[1] FALSE
```