CSCI-4047-901
Tyler Burleson
Exercise 11

Problem 1)

```
> uni.plot(cars)
$outliers
          Mazda RX4       Mazda RX4 Wag          Datsun 710      Hornet 4 Drive   Hornet Sportabout
               TRUE               FALSE               FALSE               FALSE               FALSE
            Valiant          Duster 360           Merc 240D           Merc 230            Merc 280
              FALSE               FALSE               FALSE                TRUE               FALSE
           Merc 280C          Merc 450SE          Merc 450SL         Merc 450SLC  Cadillac Fleetwood
              FALSE               FALSE               FALSE               FALSE               FALSE
Lincoln Continental   Chrysler Imperial            Fiat 128          Honda Civic      Toyota Corolla
              FALSE               FALSE                TRUE               FALSE                TRUE
      Toyota Corona    Dodge Challenger          AMC Javelin          Camaro Z28    Pontiac Firebird
              FALSE               FALSE               FALSE               FALSE               FALSE
          Fiat X1-9       Porsche 914-2         Lotus Europa      Ford Pantera L        Ferrari Dino
              FALSE               FALSE               FALSE               FALSE               FALSE
      Maserati Bora          Volvo 142E
               TRUE               FALSE
```

The outliers from our tasks are the following:

- Mazda RX4
- Merc 230
- Fiat 128
- Toyota Corolla
- Maserati Bora

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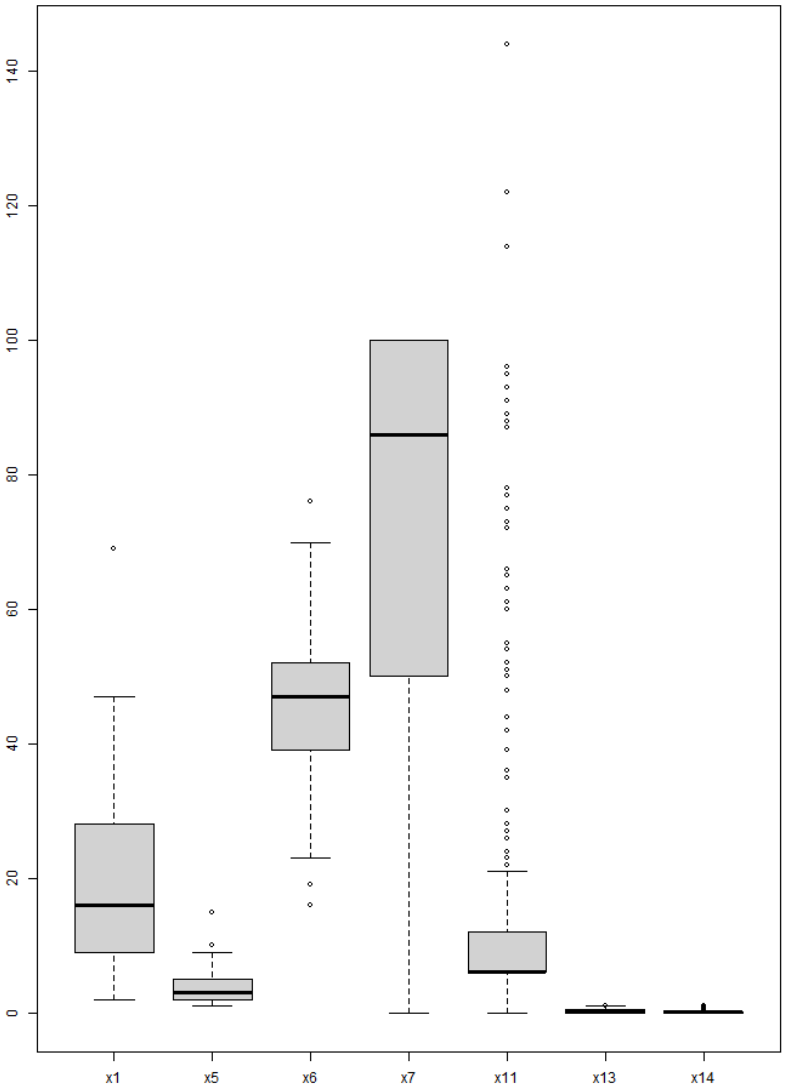
Problem 2)



Boxplot for all columns

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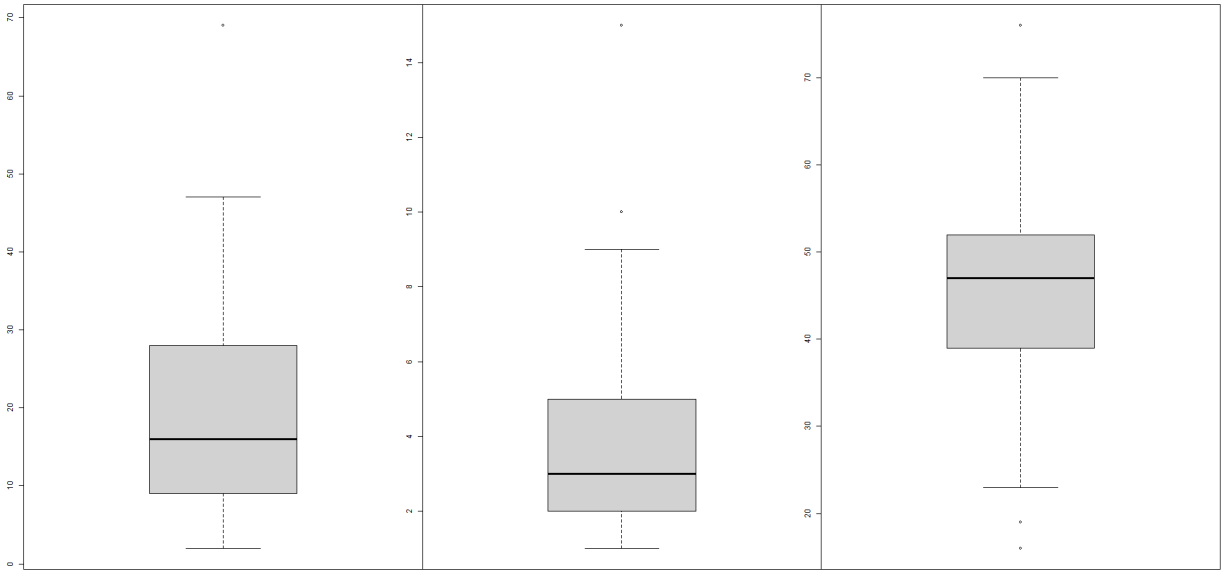
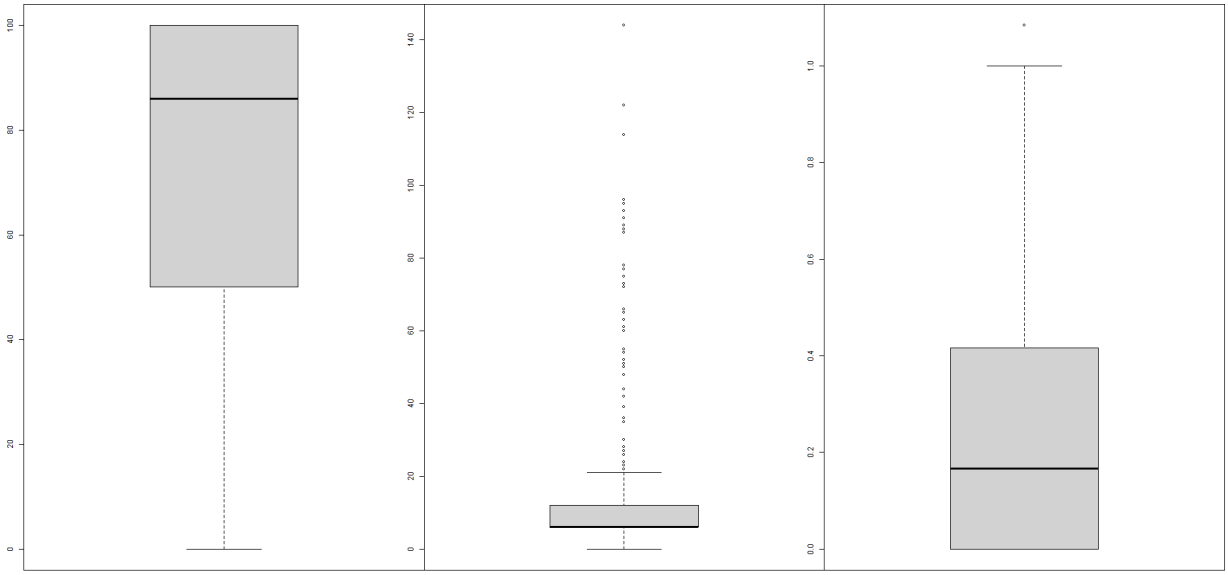


In order left to right (x1, x5, x6)



In order left to right (x7, x11, x13)

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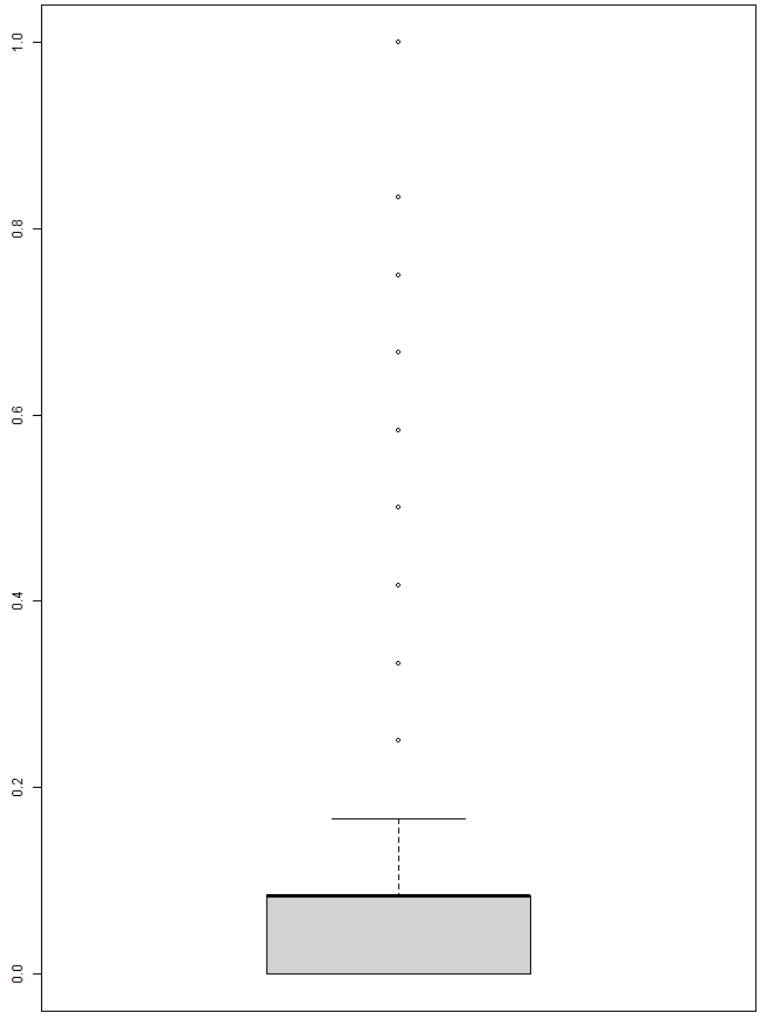

(x14)

```
> print(out$rank.outliers, max = 10)
 [1] 1165 1164 1163 1162 1161 1160 1159 1158 1157 1156
 [ reached getOption("max.print") -- omitted 1301 entries ]
```

Top 10 multivariate outliers using Gower Distance