```r
car2= read.csv("car.csv")
head(car2)
```

```
##   carID    brand     model year transmission mileage fuelType tax  mpg
## 1 13207   hyundi  Santa Fe 2019    Semi-Auto    4223   Diesel 145 39.8
## 2 17314 vauxhall       GTC 2015       Manual   47870   Diesel 125 60.1
## 3 12342     audi       RS4 2019    Automatic    5151   Petrol 145 29.1
## 4 13426       vw  Scirocco 2016    Automatic   20423   Diesel  30 57.6
## 5 16004    skoda     Scala 2020    Semi-Auto    3569   Petrol 145 47.1
## 6 18964     merc   V Class 2019    Automatic    4170   Diesel 145 44.1
##   engineSize price
## 1        2.2 31995
## 2        2.0  7700
## 3        2.9 58990
## 4        2.0 12999
## 5        1.0 16990
## 6        2.1 40890
```

```r
library(mctest)
fullcar2 = lm(price ~ engineSize+mpg+tax+factor(fuelType)+mileage+factor(transmission)+year+factor(bran
summary(fullcar2)
```

```
##
## Call:
## lm(formula = price ~ engineSize + mpg + tax + factor(fuelType) +
##     mileage + factor(transmission) + year + factor(brand), data = car2)
##
## Residuals:
##    Min     1Q Median     3Q    Max
## -26049  -4689   -959   2586  87692
##
## Coefficients:
##                                 Estimate Std. Error t value Pr(>|t|)
## (Intercept)                   -3.606e+06  1.436e+05 -25.102  < 2e-16 ***
## engineSize                     9.265e+03  2.551e+02  36.316  < 2e-16 ***
## mpg                           -1.747e+01  4.939e+00  -3.537 0.000408 ***
## tax                           -9.689e+00  1.872e+00  -5.176 2.36e-07 ***
## factor(fuelType)Electric       1.237e+04  6.463e+03   1.914 0.055713 .
## factor(fuelType)Hybrid         7.446e+03  9.399e+02   7.923 2.85e-15 ***
## factor(fuelType)Other          6.036e+03  1.873e+03   3.222 0.001280 **
## factor(fuelType)Petrol         1.898e+03  3.018e+02   6.289 3.47e-10 ***
## mileage                       -1.306e-01  8.261e-03 -15.814  < 2e-16 ***
## factor(transmission)Manual    -1.943e+03  3.757e+02  -5.170 2.43e-07 ***
## factor(transmission)Other     -6.372e+02  8.725e+03  -0.073 0.941785
## factor(transmission)Semi-Auto  1.462e+03  3.428e+02   4.264 2.05e-05 ***
## year                           1.796e+03  7.112e+01  25.256  < 2e-16 ***
## factor(brand)bmw              -2.659e+03  5.951e+02  -4.468 8.09e-06 ***
## factor(brand)ford             -1.047e+04  6.664e+02 -15.710  < 2e-16 ***
## factor(brand)hyundi           -1.240e+04  6.892e+02 -17.994  < 2e-16 ***
## factor(brand)merc             -3.784e+03  5.877e+02  -6.439 1.32e-10 ***
## factor(brand)skoda            -1.279e+04  7.640e+02 -16.739  < 2e-16 ***
## factor(brand)toyota           -1.195e+04  7.386e+02 -16.182  < 2e-16 ***
## factor(brand)vauxhall         -1.278e+04  8.255e+02 -15.481  < 2e-16 ***
```

```
## factor(brand)vw               -8.993e+03  6.280e+02 -14.321  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 8709 on 4939 degrees of freedom
## Multiple R-squared:  0.7194, Adjusted R-squared:  0.7182
## F-statistic:   633 on 20 and 4939 DF,  p-value: < 2.2e-16
```

```
library(mctest)
imcdiag(fullcar2, method='VIF')
```

```
##
## Call:
## imcdiag(mod = fullcar2, method = "VIF")
##
##
##  VIF Multicollinearity Diagnostics
##
##                                 VIF detection
## engineSize                   2.6514         0
## mpg                          2.0383         0
## tax                          1.5560         0
## factor(fuelType)Electric     1.1011         0
## factor(fuelType)Hybrid       2.1173         0
## factor(fuelType)Other        1.1966         0
## factor(fuelType)Petrol       1.3619         0
## mileage                      2.6662         0
## factor(transmission)Manual   2.2018         0
## factor(transmission)Other    1.0035         0
## factor(transmission)Semi-Auto 1.5233        0
## year                         2.7510         0
## factor(brand)bmw             2.5960         0
## factor(brand)ford            3.7920         0
## factor(brand)hyundi          2.8704         0
## factor(brand)merc            3.0240         0
## factor(brand)skoda           2.9903         0
## factor(brand)toyota          2.9192         0
## factor(brand)vauxhall        2.3179         0
## factor(brand)vw              3.3750         0
##
## NOTE:  VIF Method Failed to detect multicollinearity
##
##
## 0 --> COLLINEARITY is not detected by the test
##
## ===================================
```