Resultados

Cícero

2022-09-30

R Markdown

Variáveis testadas:

SalePrice x LotArea : Significativa

SalePrice x ExterQual : Siginificativa

SalePrice x ExterCond : significativa

SalePrice x OverallCond : Meio meh

SalePrice x Neighborhood : significativa para algumas vizinhaças

SalePrice x TotalBsmtSF : significativa

SalePrice x MiscVal : Poha nenhuma

SalePrice x MiscFeature : Poha nenhuma

```
dados <- read.csv('train.csv')
modeloLotArea <- lm(SalePrice ~ LotArea,dados)
anova(modeloLotArea)
```

```
## Analysis of Variance Table
##
## Response: SalePrice
##             Df     Sum Sq    Mean Sq F value    Pr(>F)
## LotArea      1 6.4099e+11 6.4099e+11  109.09 < 2.2e-16 ***
## Residuals 1458 8.5669e+12 5.8758e+09
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
modeloExterQual <- lm(SalePrice ~ ExterQual,dados)
anova(modeloExterQual)
```

```
## Analysis of Variance Table
##
## Response: SalePrice
##             Df     Sum Sq    Mean Sq F value    Pr(>F)
## ExterQual    3 4.3957e+12 1.4652e+12  443.33 < 2.2e-16 ***
## Residuals 1456 4.8122e+12 3.3051e+09
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
modeloExterCond <- lm(SalePrice ~ ExterCond,dados)
anova(modeloExterCond)
```

```
## Analysis of Variance Table
##
## Response: SalePrice
##             Df     Sum Sq    Mean Sq F value    Pr(>F)
## ExterCond    4 2.1747e+11 5.4367e+10  8.7987 5.107e-07 ***
## Residuals 1455 8.9904e+12 6.1790e+09
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
modeloOverallCond <- lm(SalePrice ~ OverallCond,dados)
anova(modeloOverallCond)
```

```
## Analysis of Variance Table
##
## Response: SalePrice
##               Df     Sum Sq    Mean Sq F value   Pr(>F)
## OverallCond    1 5.5814e+10 5.5814e+10  8.8916 0.002912 **
## Residuals   1458 9.1521e+12 6.2772e+09
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
modeloNeighborhood <- lm(SalePrice ~ Neighborhood,dados)
anova(modeloNeighborhood)
```

```
## Analysis of Variance Table
##
## Response: SalePrice
##                Df     Sum Sq    Mean Sq F value    Pr(>F)
## Neighborhood   24 5.0236e+12 2.0932e+11  71.785 < 2.2e-16 ***
## Residuals    1435 4.1843e+12 2.9159e+09
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
modeloTotalBsmtSF <- lm(SalePrice ~ TotalBsmtSF,dados)
anova(modeloTotalBsmtSF)
```

```
## Analysis of Variance Table
##
## Response: SalePrice
##                Df     Sum Sq    Mean Sq F value    Pr(>F)
## TotalBsmtSF    1 3.4666e+12 3.4666e+12  880.34 < 2.2e-16 ***
## Residuals   1458 5.7413e+12 3.9378e+09
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

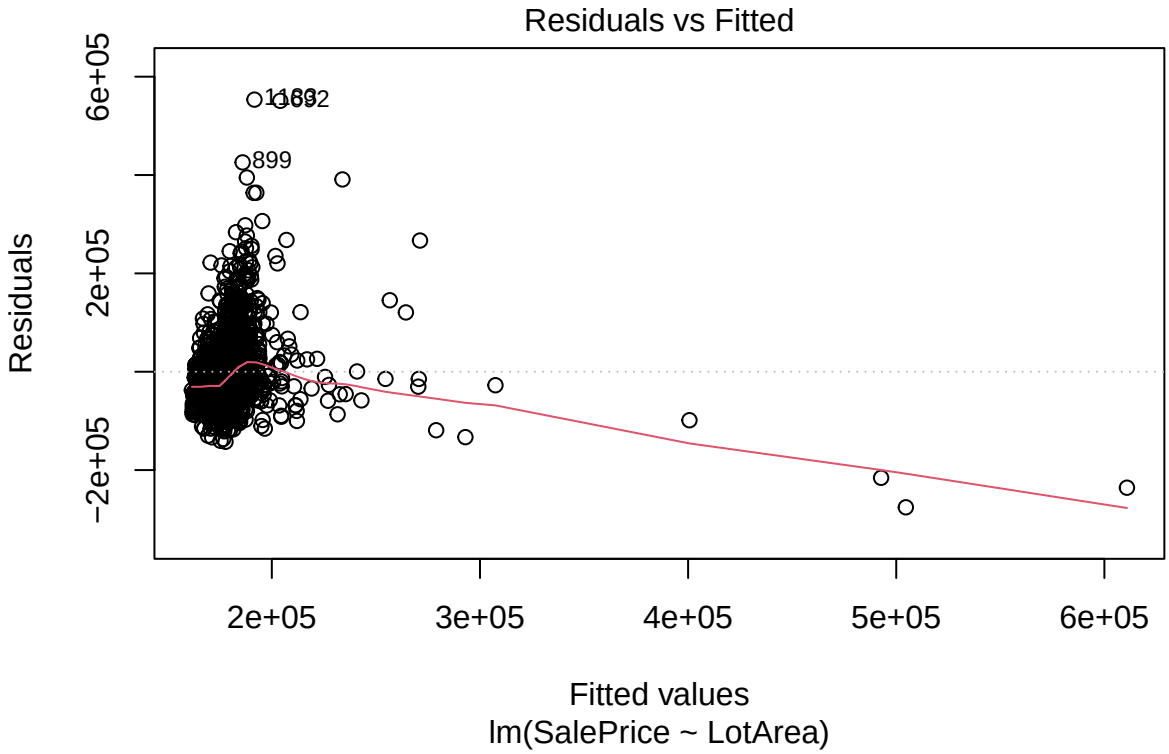
```r
modeloMiscVal <- lm(SalePrice ~ MiscVal,dados)
anova(modeloMiscVal)
```

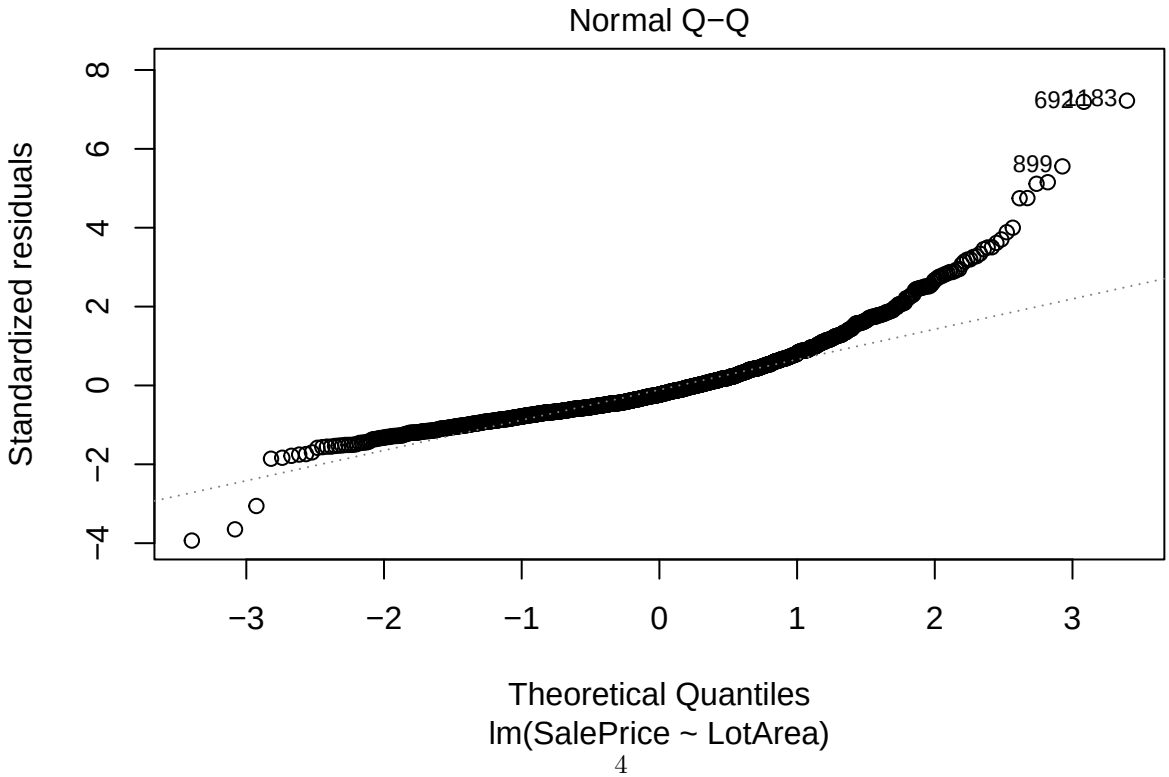
```
## Analysis of Variance Table
##
## Response: SalePrice
##             Df     Sum Sq    Mean Sq F value Pr(>F)
## MiscVal      1 4.1343e+09 4134336401  0.6549 0.4185
## Residuals 1458 9.2038e+12 6312604251
```

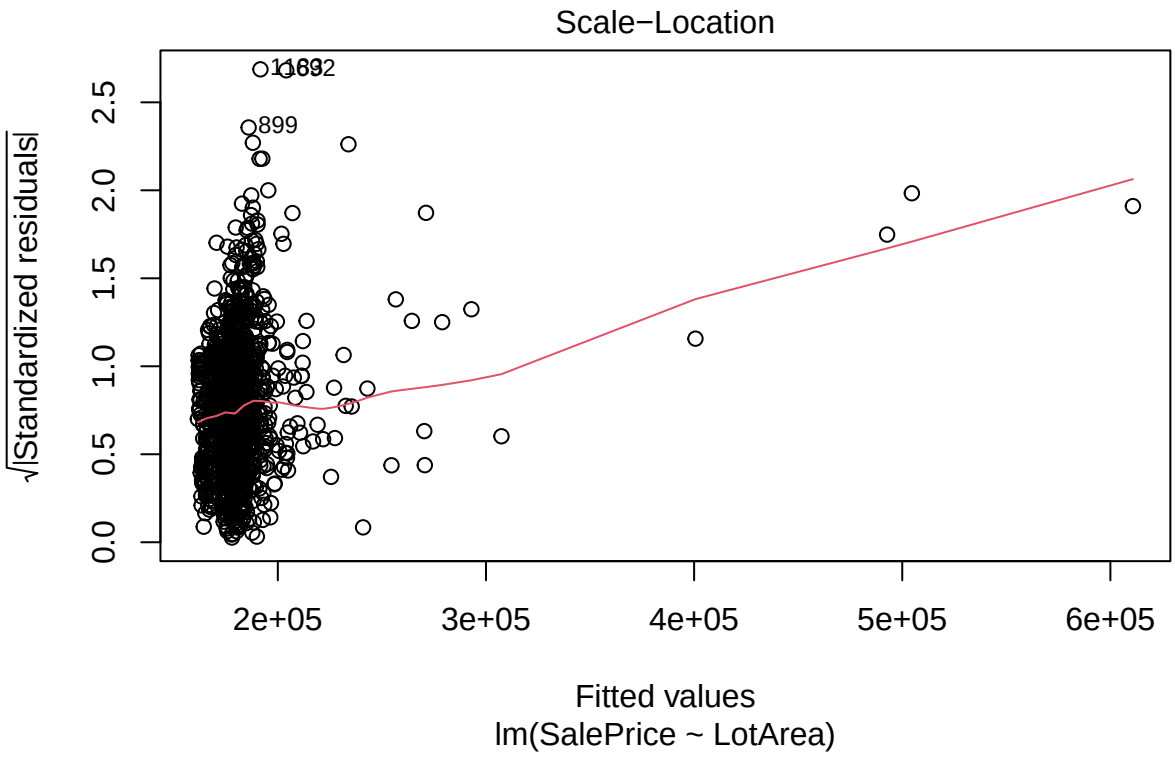
```
modeloMiscFeature <- lm(SalePrice ~ MiscFeature,dados)
anova(modeloMiscFeature)
```

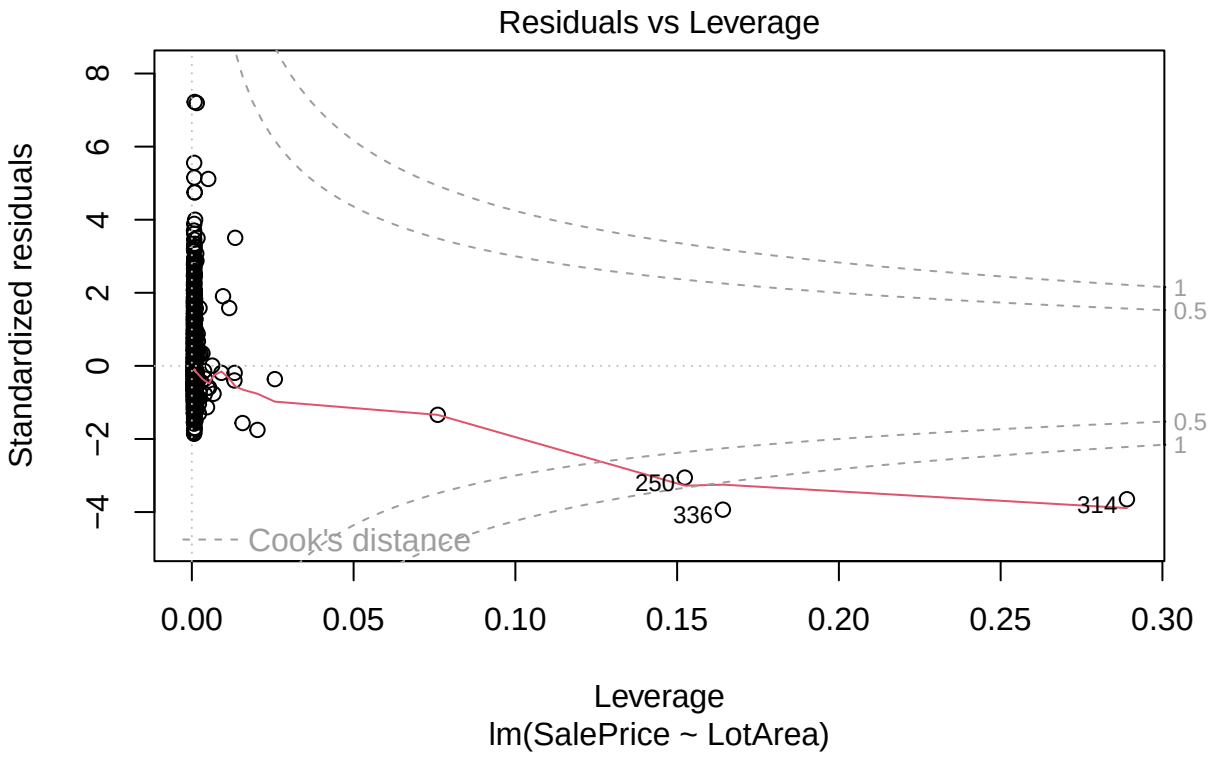
```
## Analysis of Variance Table
##
## Response: SalePrice
##             Df    Sum Sq    Mean Sq F value Pr(>F)
## MiscFeature  3 1.706e+10 5686609053  2.1573 0.1047
## Residuals   50 1.318e+11 2635955007
```

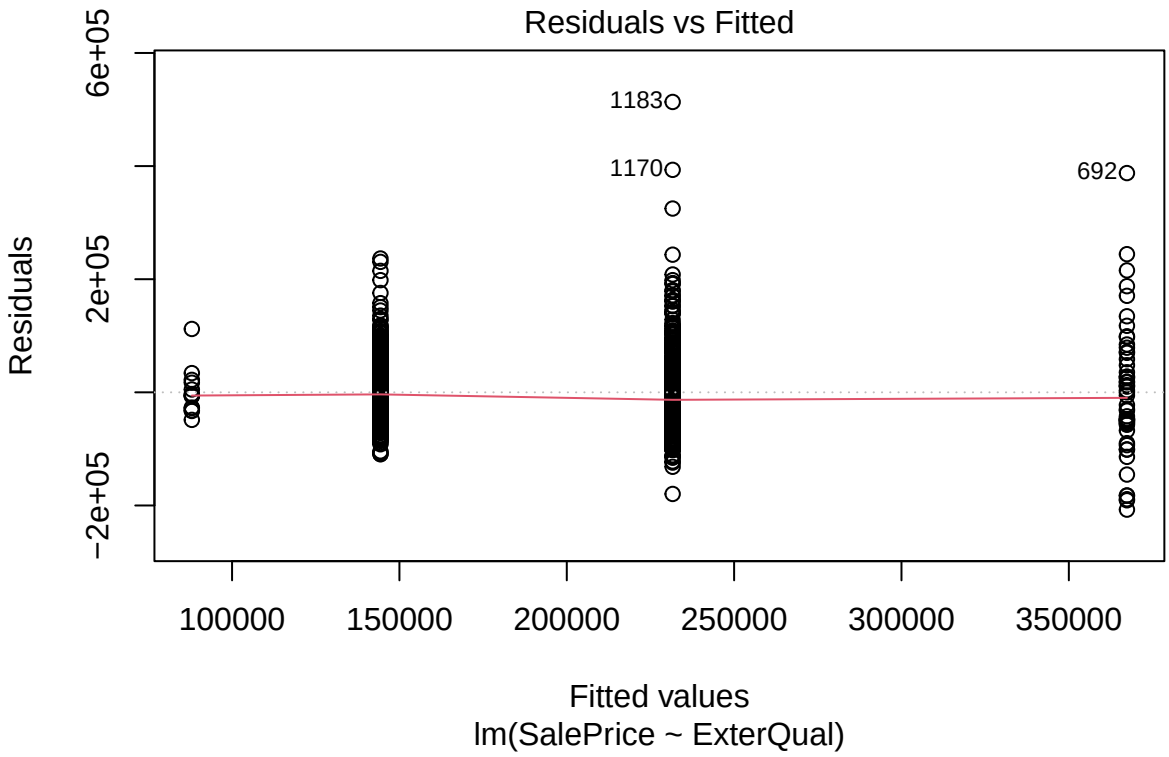
Lm Plots

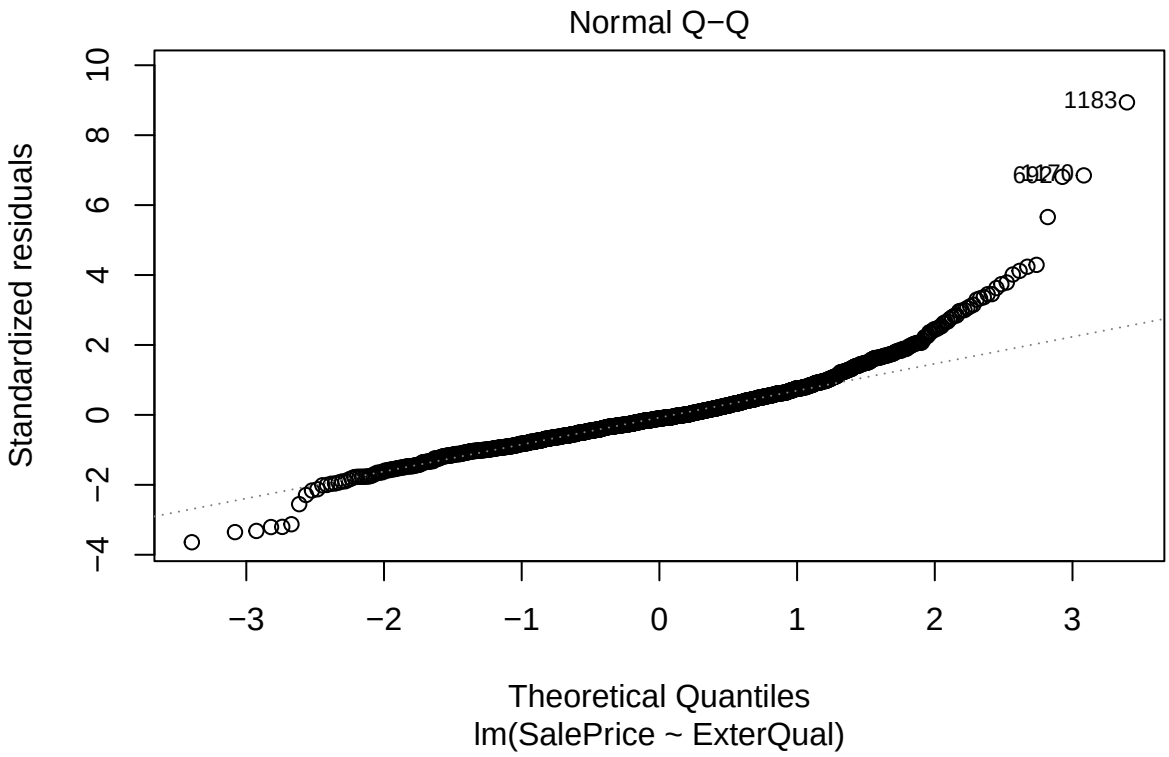

Residuals vs Fitted
Residuals
Fitted values
lm(SalePrice ~ LotArea)
899

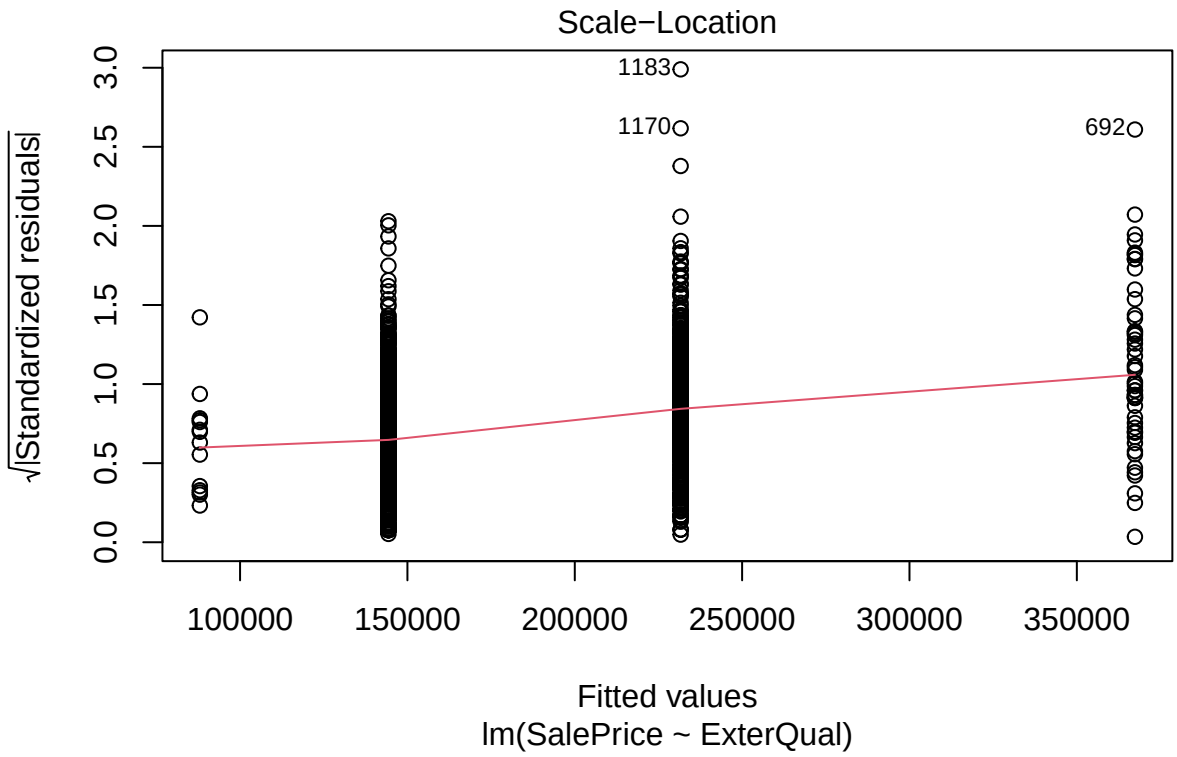

Normal Q−Q
Standardized residuals
Theoretical Quantiles
lm(SalePrice ~ LotArea)
899

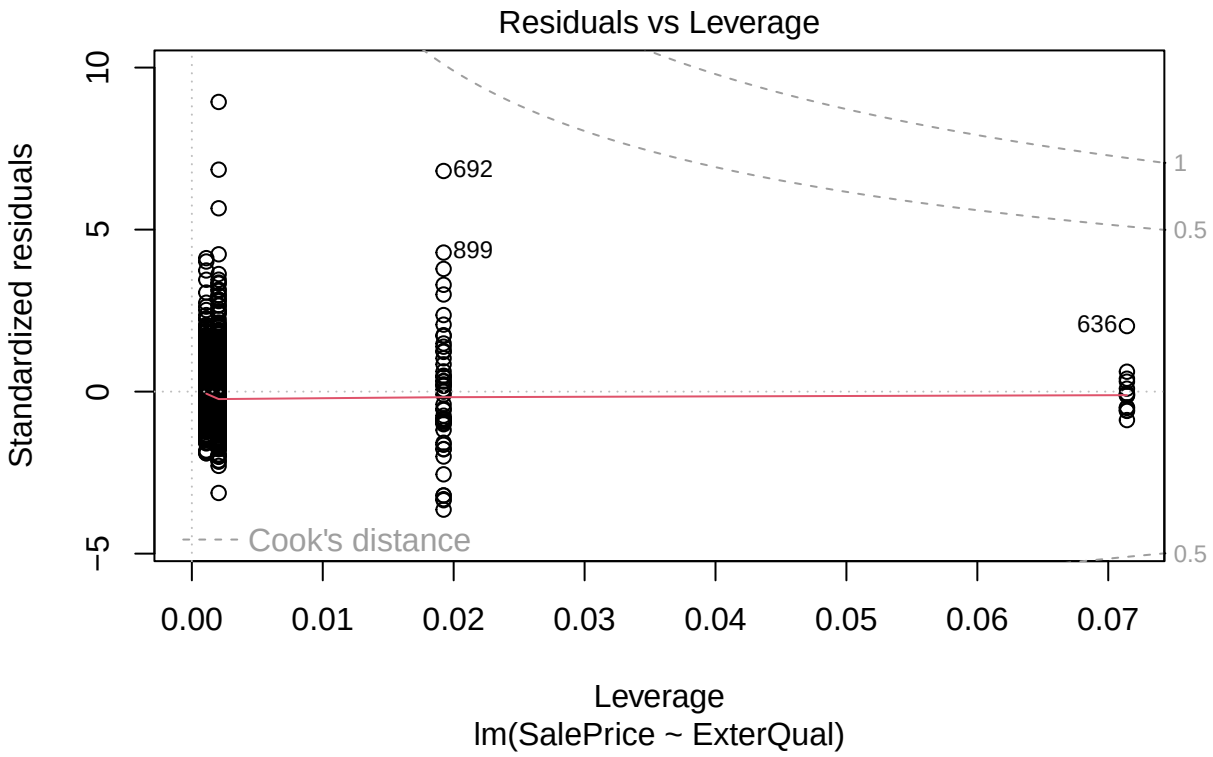

Scale−Location
√|Standardized residuals|
0.0
0.5
1.0
1.5
2.0
2.5
1169
899
2e+05
3e+05
4e+05
5e+05
6e+05
Fitted values
lm(SalePrice ~ LotArea)

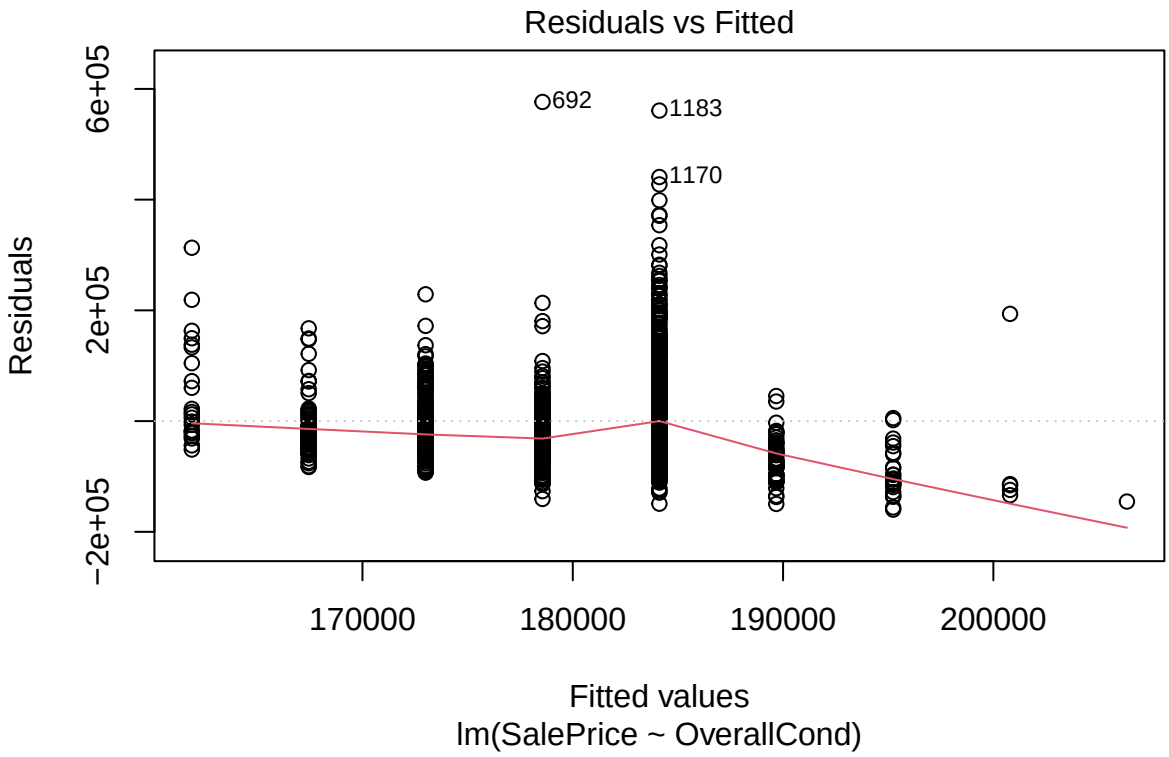

Residuals vs Leverage
Standardized residuals
8
6
4
2
0
−2
−4
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Leverage
lm(SalePrice ~ LotArea)
Cook's distance
1
0.5
0.5
1
250
336
314

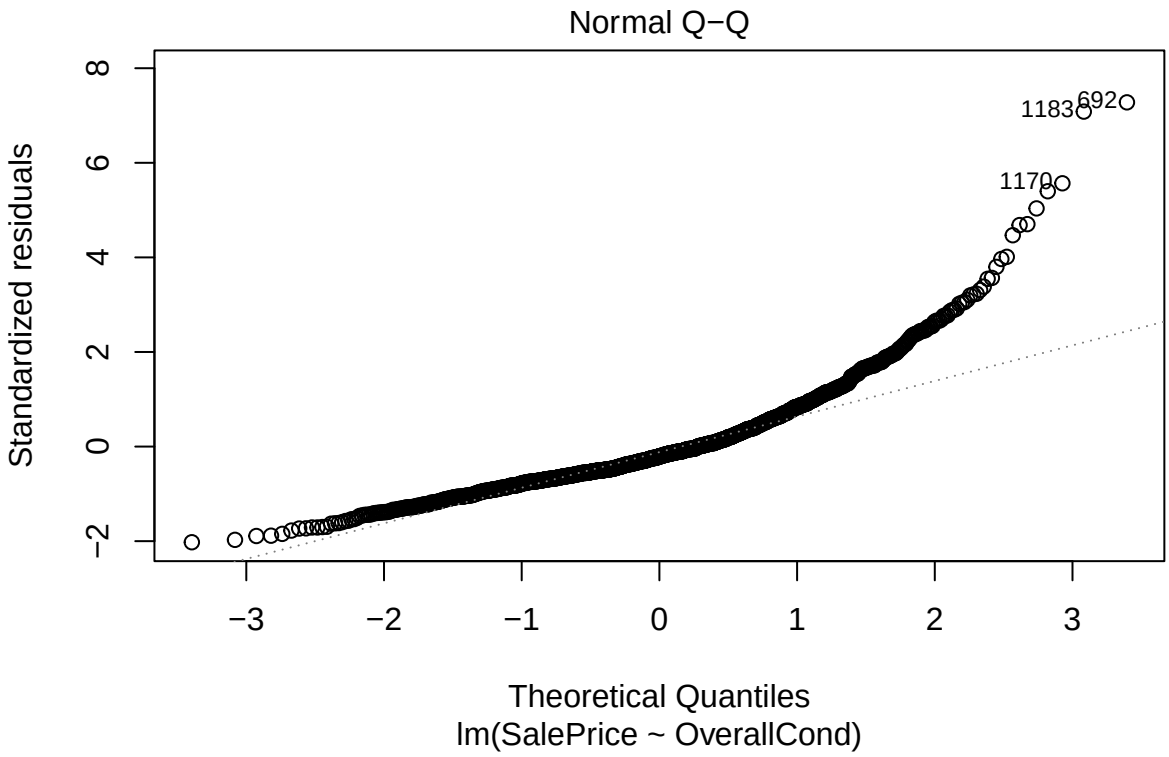

Residuals vs Fitted
Residuals
6e+05
2e+05
−2e+05
1183
1170
692
100000
150000
200000
250000
300000
350000
Fitted values
lm(SalePrice ~ ExterQual)

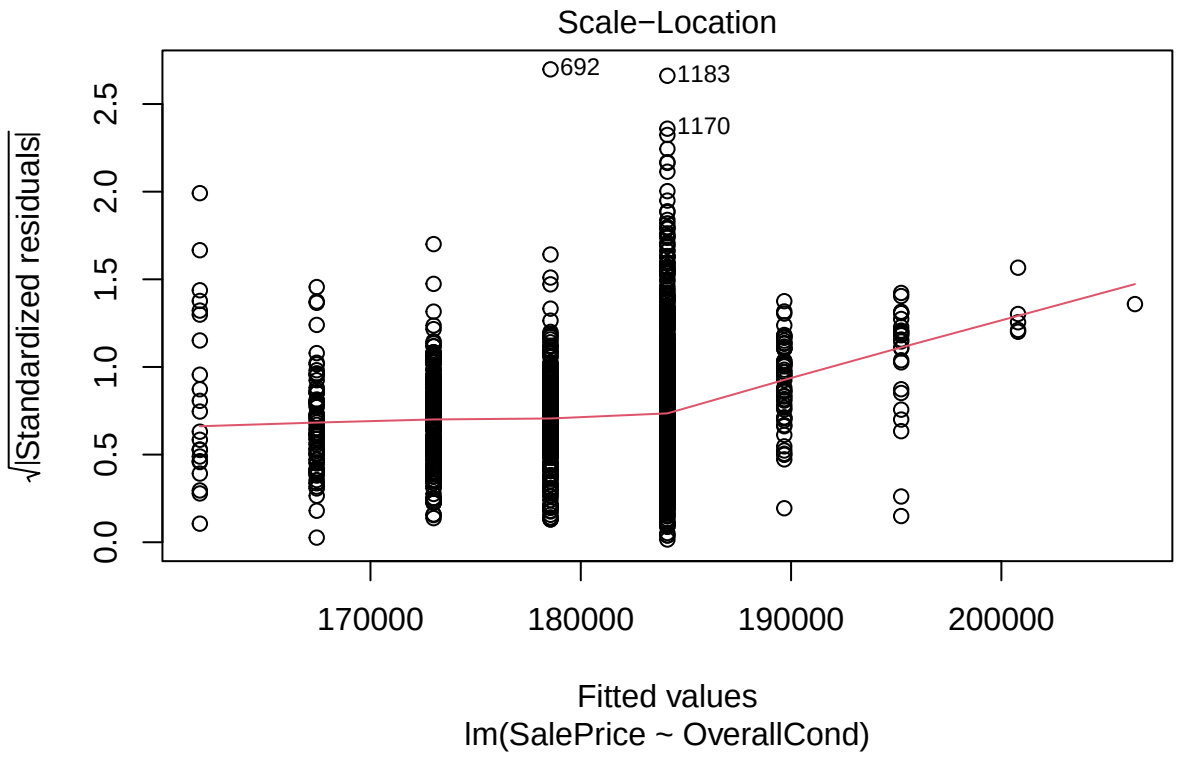

Normal Q−Q
Standardized residuals
Theoretical Quantiles
lm(SalePrice ~ ExterQual)
1183
−4
−2
0
2
4
6
8
10
−3
−2
−1
0
1
2
3

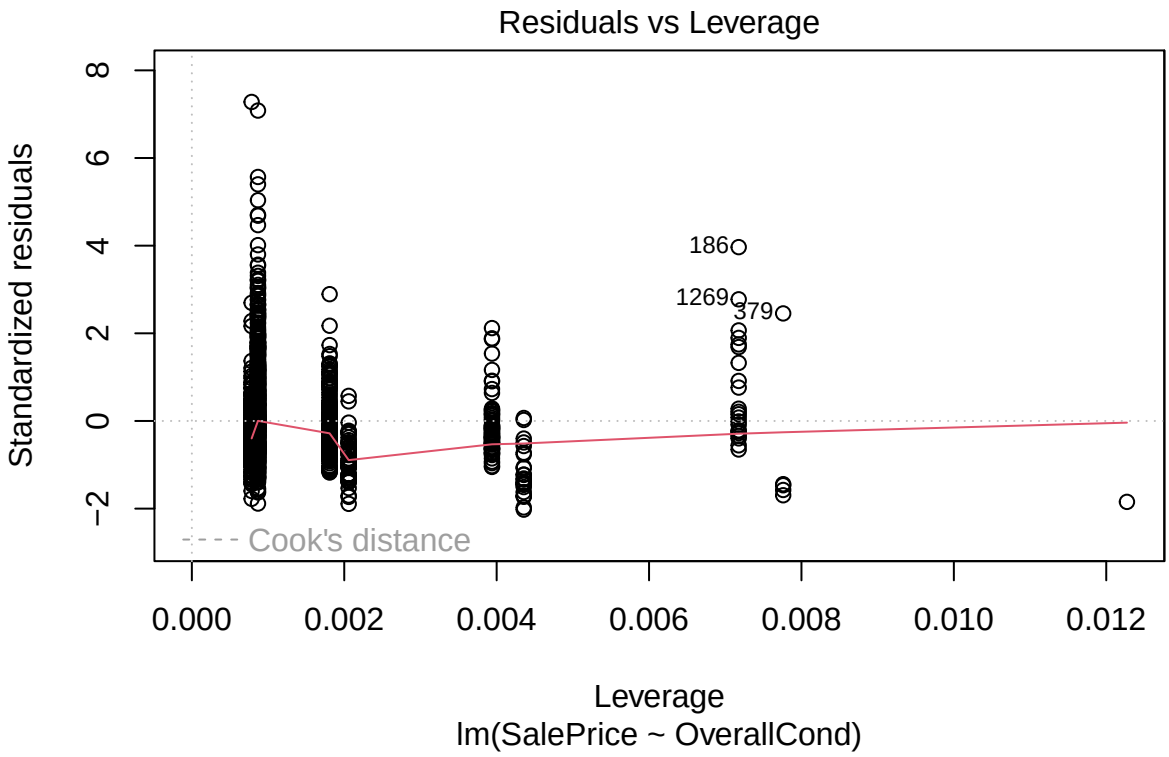

Scale−Location
√|Standardized residuals|
0.0
0.5
1.0
1.5
2.0
2.5
3.0
1183
1170
692
100000
150000
200000
250000
300000
350000
Fitted values
lm(SalePrice ~ ExterQual)

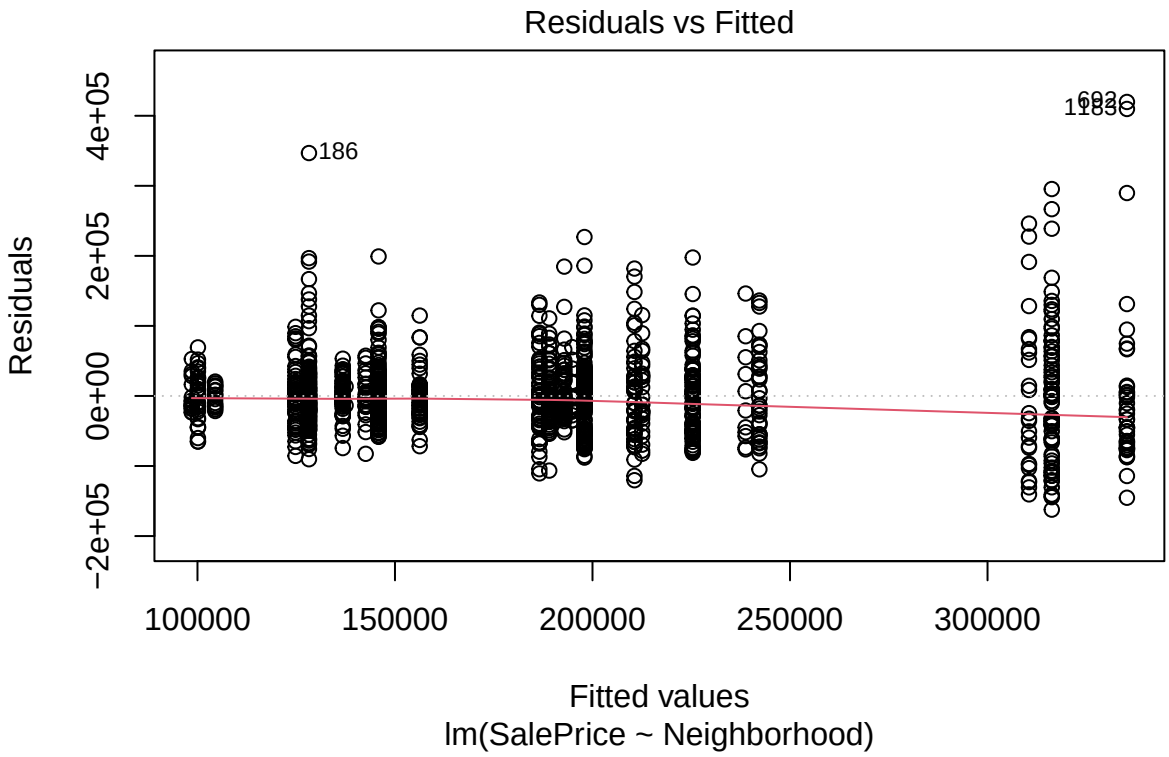

Residuals vs Leverage
Standardized residuals
10
5
0
−5
692
899
636
1
0.5
0.5
Cook's distance
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
Leverage
lm(SalePrice ~ ExterQual)

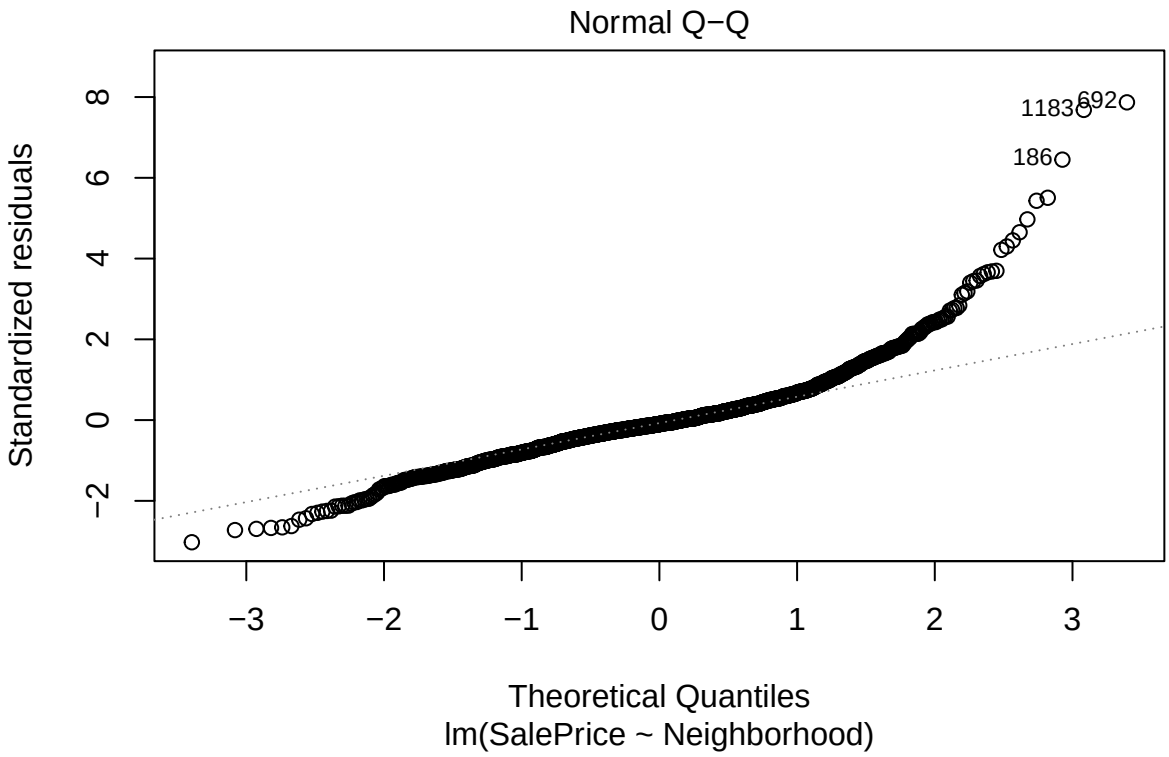

Residuals vs Fitted
Residuals
6e+05
2e+05
−2e+05
692
1183
1170
170000
180000
190000
200000
Fitted values
lm(SalePrice ~ OverallCond)

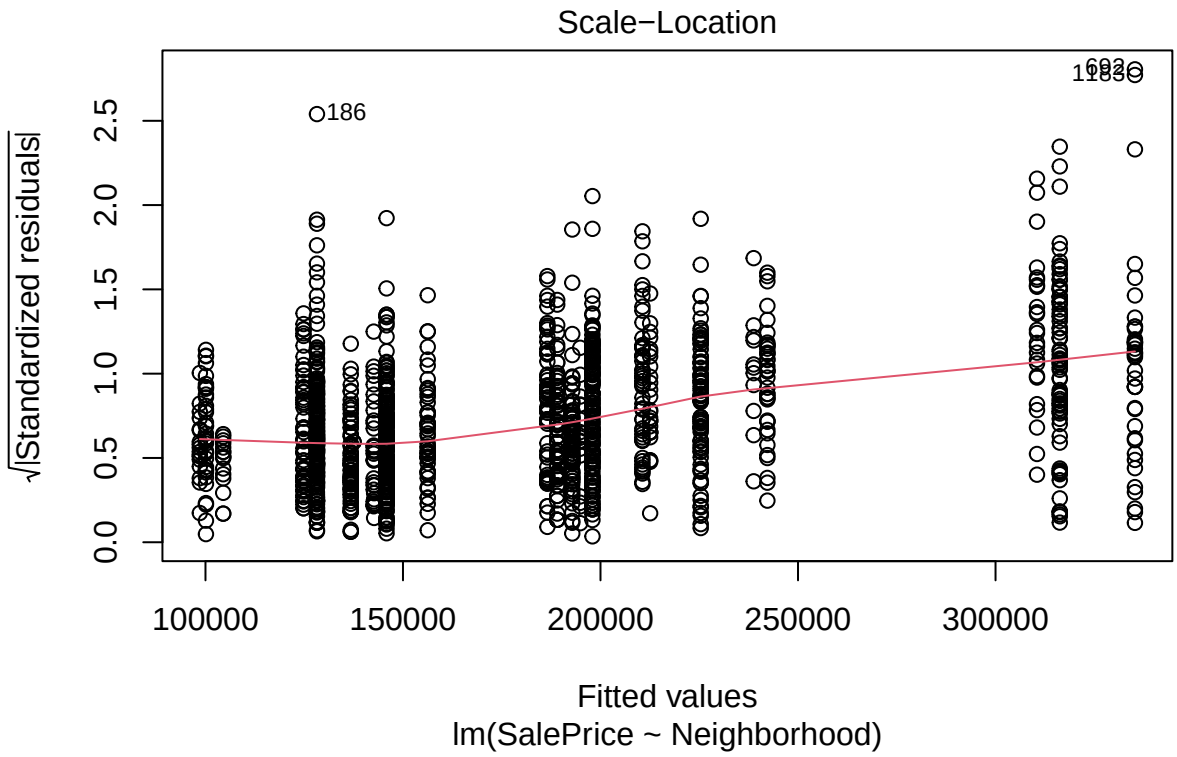

Normal Q−Q
Standardized residuals
Theoretical Quantiles
lm(SalePrice ~ OverallCond)
1183
692
1170
−2
0
2
4
6
8
−3
−2
−1
0
1
2
3

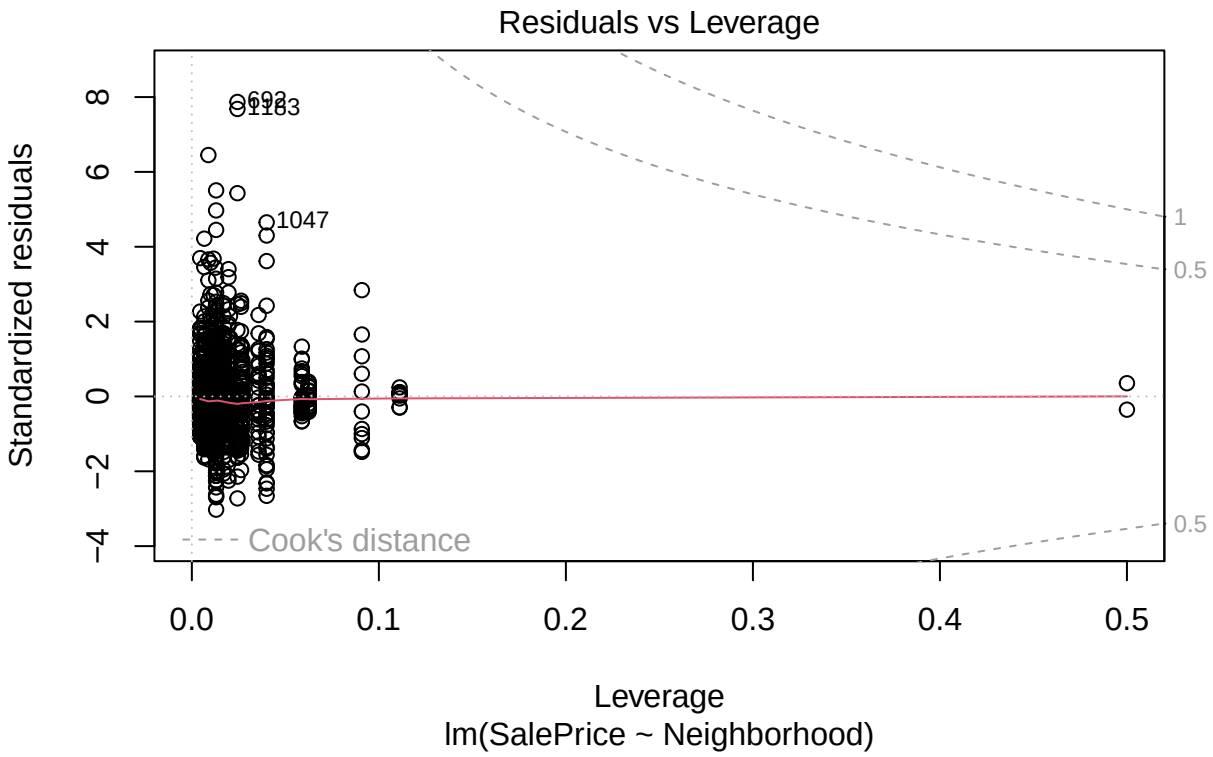

Scale−Location
692
1183
1170
√|Standardized residuals|
0.0
0.5
1.0
1.5
2.0
2.5
170000
180000
190000
200000
Fitted values
lm(SalePrice ~ OverallCond)

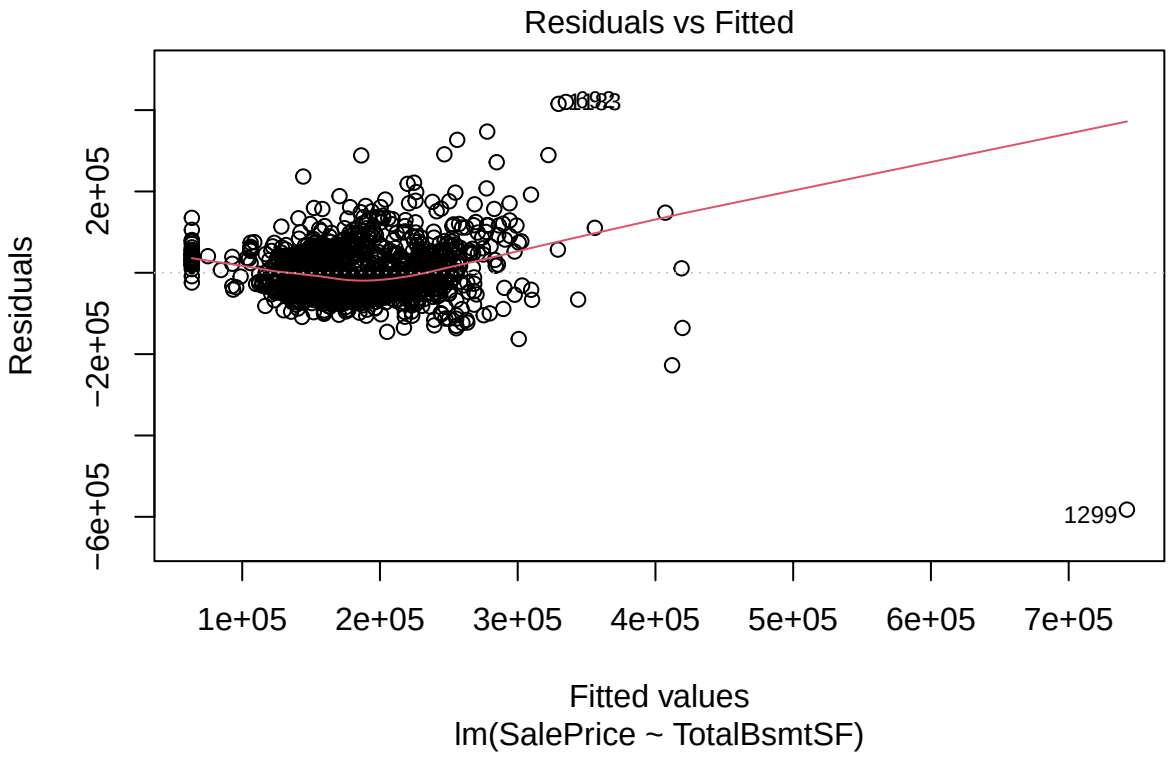

Residuals vs Leverage
Standardized residuals
8
6
4
2
0
−2
186
1269
379
Cook's distance
0.000
0.002
0.004
0.006
0.008
0.010
0.012
Leverage
lm(SalePrice ~ OverallCond)

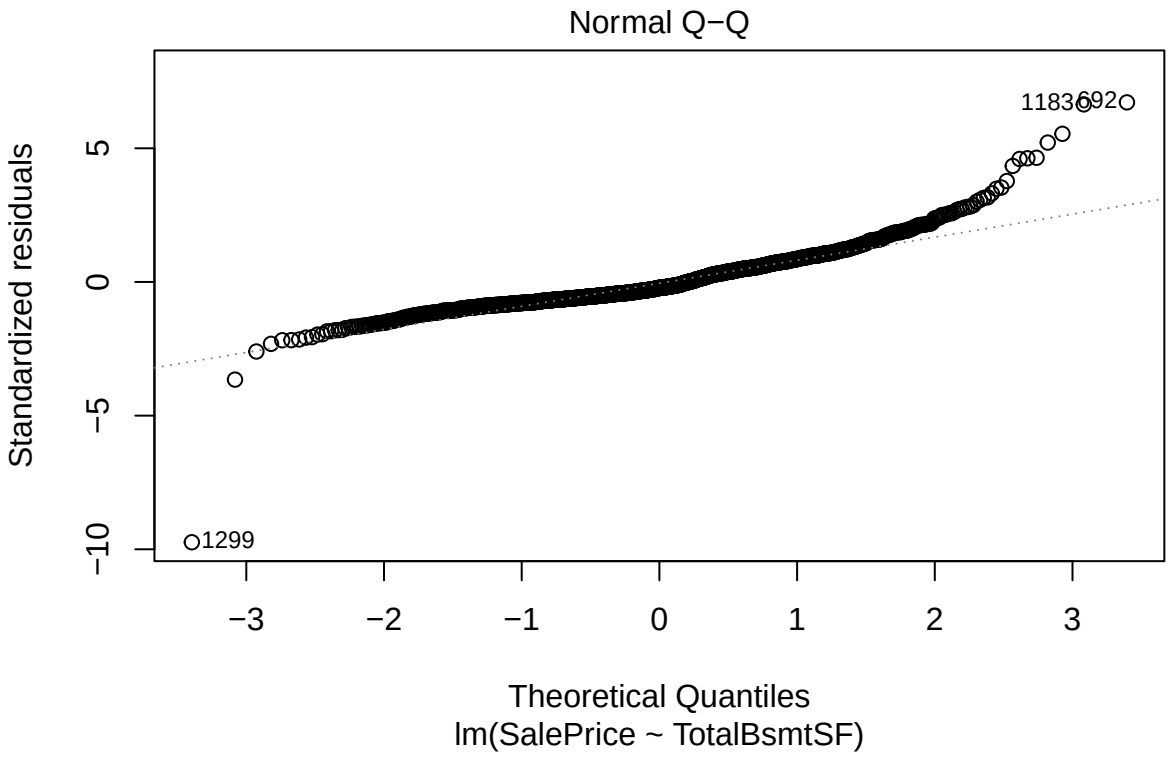

Residuals vs Fitted
Residuals
Fitted values
lm(SalePrice ~ Neighborhood)
186
1183
692
−2e+05
0e+00
2e+05
4e+05
100000
150000
200000
250000
300000

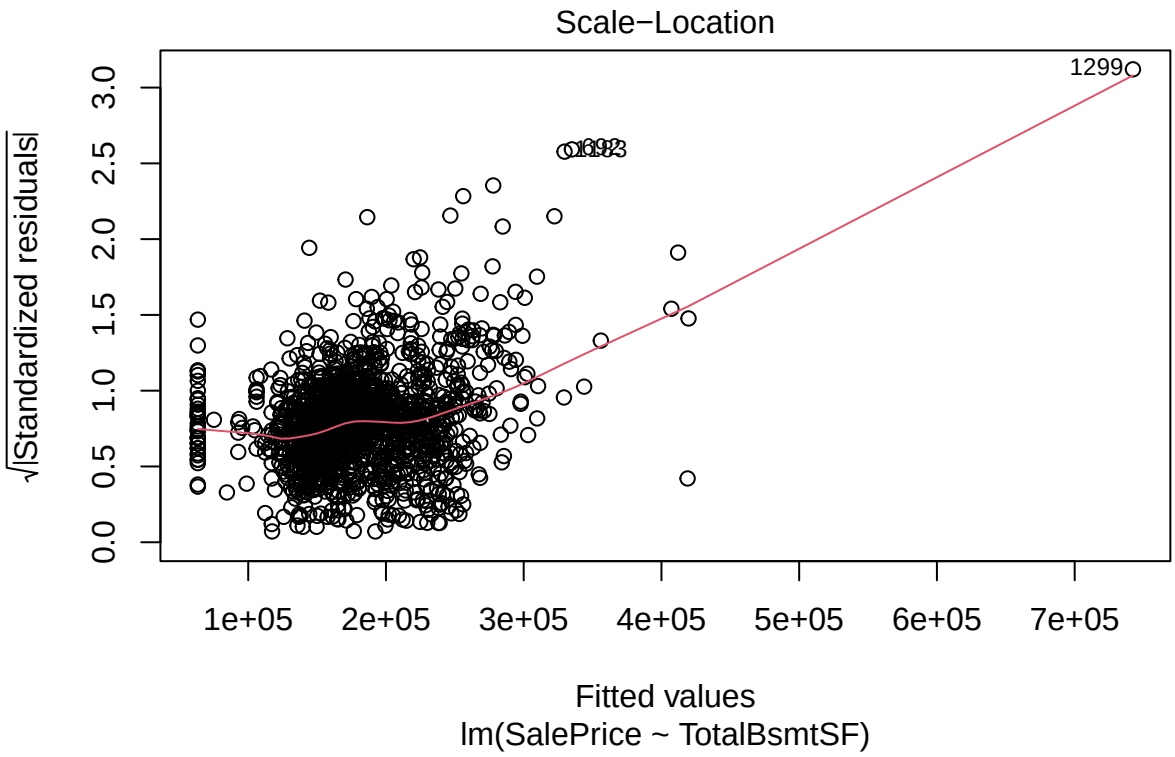

Normal Q−Q
Standardized residuals
Theoretical Quantiles
lm(SalePrice ~ Neighborhood)
1183
692
186

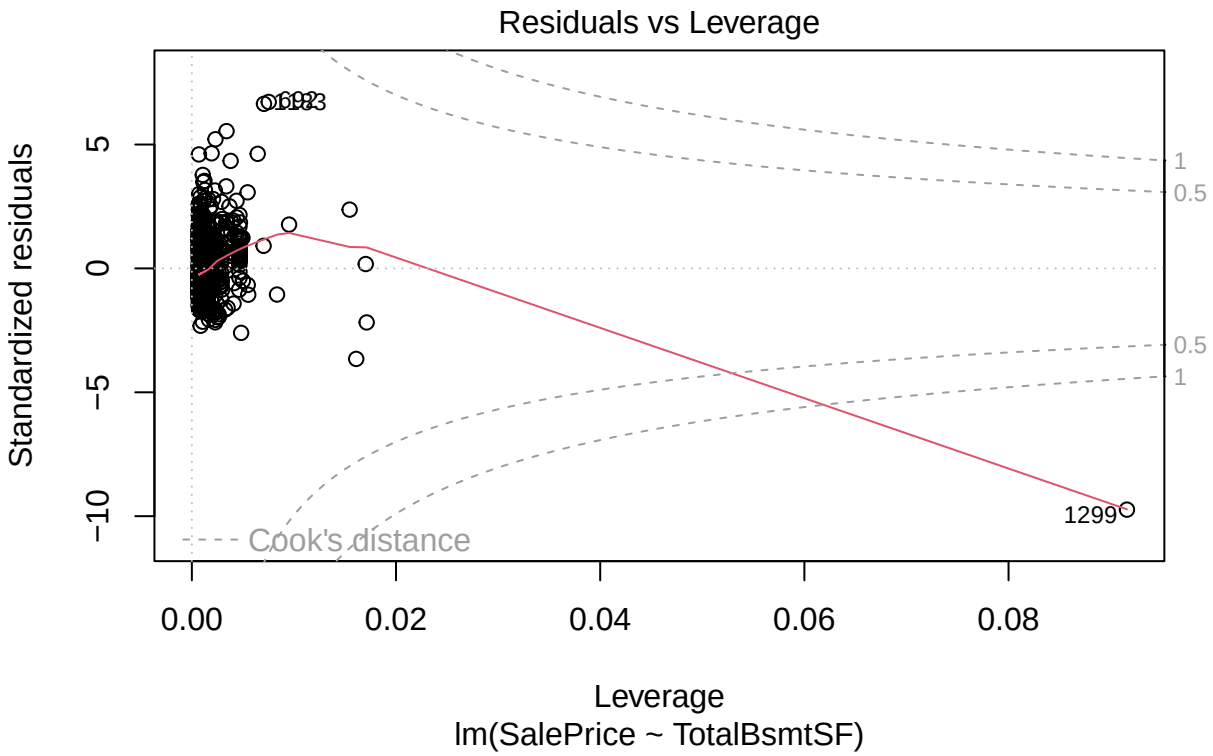

Scale−Location
√|Standardized residuals|
0.0
0.5
1.0
1.5
2.0
2.5
186
100000
150000
200000
250000
300000
Fitted values
lm(SalePrice ~ Neighborhood)


Residuals vs Leverage
Standardized residuals
8
6
4
2
0
−2
−4
692
1183
1047
1
0.5
0.5
Cook's distance
0.0
0.1
0.2
0.3
0.4
0.5
Leverage
lm(SalePrice ~ Neighborhood)


Residuals vs Fitted
Residuals
2e+05
−2e+05
−6e+05
1299
1e+05
2e+05
3e+05
4e+05
5e+05
6e+05
7e+05
Fitted values
lm(SalePrice ~ TotalBsmtSF)


Normal Q−Q
Standardized residuals
Theoretical Quantiles
lm(SalePrice ~ TotalBsmtSF)
1299
692
5
0
−5
−10
−3
−2
−1
0
1
2
3


Scale−Location
√|Standardized residuals|
0.0
0.5
1.0
1.5
2.0
2.5
3.0
1299
1e+05
2e+05
3e+05
4e+05
5e+05
6e+05
7e+05
Fitted values
lm(SalePrice ~ TotalBsmtSF)



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.