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| > library(faraway) #this command brings in a library of regression functions  > #Exercise 6.8 (CLERICAL), page 352, 8th edition which is Exercise 6.6, page 340 7th edition  >  > file1 <- read.csv(file="C:/Users/buchh/OneDrive/Desktop/regression/hw3/HW03\_data.csv",header = TRUE)  > file1  y x1 x2  1 69.05 15.1 41.3  2 69.31 11.3 66.7  3 70.55 7.8 58.1  4 70.66 10.1 39.9  5 71.71 10.3 62.6  6 72.06 6.8 63.9  7 72.48 3.1 56.0  8 70.06 6.2 54.6  9 70.66 10.7 52.6  10 68.54 13.9 40.6  11 73.60 6.2 61.9  12 71.87 5.3 59.5  13 70.14 10.3 52.6  14 70.88 7.1 52.9  15 72.56 2.3 59.0  16 72.58 4.5 59.9  17 70.10 10.6 38.5  18 68.76 13.2 42.2  19 70.39 2.7 54.7  20 70.22 8.5 52.3  21 71.83 3.3 58.5  22 70.63 11.1 52.8  23 72.96 2.3 57.6  24 68.09 12.5 41.0  25 70.69 9.3 48.8  26 70.56 5.0 59.2  27 72.60 2.9 59.3  28 69.03 11.5 65.2  29 71.23 3.3 57.6  30 70.93 5.2 52.5  31 70.32 9.7 55.2  32 70.55 10.9 52.7  33 69.21 11.1 38.5  34 72.78 1.4 50.3  35 70.82 7.4 53.2  36 71.42 6.4 51.6  37 72.13 4.2 60.0  38 70.43 6.1 50.2  39 71.90 2.4 46.4  40 67.96 11.6 37.8  41 72.08 1.7 53.3  42 70.11 11.0 41.8  43 70.90 12.2 47.4  44 72.90 4.5 67.3  45 71.64 5.5 57.1  46 70.08 9.5 47.8  47 71.72 4.3 63.5  48 69.48 6.7 41.6  49 72.48 3.0 54.5  50 70.29 6.9 62.9  > lmod1 <- lm(y ~ x1+x2,data=file1)  > summary(lmod1)  Call:  lm(formula = y ~ x1 + x2, data = file1)  Residuals:  Min 1Q Median 3Q Max  -1.66758 -0.41801 0.05602 0.55913 2.05625  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 70.29708 1.01567 69.213 < 2e-16 \*\*\*  x1 -0.23709 0.03529 -6.719 2.18e-08 \*\*\*  x2 0.04389 0.01613 2.721 0.00909 \*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.7959 on 47 degrees of freedom  Multiple R-squared: 0.6628, Adjusted R-squared: 0.6485  F-statistic: 46.2 on 2 and 47 DF, p-value: 8.016e-12  >  > lmodreduced <- lm(y ~ x1,data=file1)  > summary(lmodreduced)  Call:  lm(formula = y ~ x1, data = file1)  Residuals:  Min 1Q Median 3Q Max  -1.81690 -0.48139 0.09591 0.39769 2.38691  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 72.97356 0.26997 270.30 < 2e-16 \*\*\*  x1 -0.28395 0.03279 -8.66 2.26e-11 \*\*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.8473 on 48 degrees of freedom  Multiple R-squared: 0.6097, Adjusted R-squared: 0.6016  F-statistic: 74.99 on 1 and 48 DF, p-value: 2.26e-11  >  > lmodreduced1 <- lm(y ~ x1^2+x2^2,data=file1)  > summary(lmodreduced1)  Call:  lm(formula = y ~ x1^2 + x2^2, data = file1)  Residuals:  Min 1Q Median 3Q Max  -1.66758 -0.41801 0.05602 0.55913 2.05625  Coefficients:  Estimate Std. Error t value Pr(>|t|)  (Intercept) 70.29708 1.01567 69.213 < 2e-16 \*\*\*  x1 -0.23709 0.03529 -6.719 2.18e-08 \*\*\*  x2 0.04389 0.01613 2.721 0.00909 \*\*  ---  Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1  Residual standard error: 0.7959 on 47 degrees of freedom  Multiple R-squared: 0.6628, Adjusted R-squared: 0.6485  F-statistic: 46.2 on 2 and 47 DF, p-value: 8.016e-12 |
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