Chapter 13

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2018-01-04

Simple Regression

Table 1: Housing Data

Style	House Price in $1000s (Y)	Square Feet (X)	Col	SL
Col	245	1400	1	0
Col	312	1600	1	0
Col	279	1700	1	0
Col	308	1875	1	0
Col	199	1100	1	0
Col	219	1550	1	0
Col	405	2350	1	0
Col	324	2450	1	0
Col	319	1425	1	0
Col	255	1700	1	0
SL	345	1400	0	1
SL	412	1600	0	1
SL	379	1700	0	1
SL	408	1875	0	1
SL	299	1100	0	1
SL	319	1550	0	1
SL	505	2350	0	1
SL	424	2450	0	1
SL	419	1425	0	1
SL	355	1700	0	1
Ran	295	1400	0	0
Ran	362	1600	0	0
Ran	329	1700	0	0
Ran	358	1875	0	0
Ran	249	1100	0	0
Ran	269	1550	0	0
Ran	455	2350	0	0
Ran	374	2450	0	0
Ran	369	1425	0	0
Ran	305	1700	0	0

```
## 
## Call:
```

```
## lm(formula = d$price ~ d$sqft)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -99.388 -45.342  -0.295  41.838 114.333
##
## Coefficients:
##              Estimate Std. Error t value
## (Intercept) 148.24833   46.21500   3.208
## d$sqft        0.10977    0.02626   4.181
##              Pr(>|t|)
## (Intercept) 0.003339 **
## d$sqft      0.000258 ***
## ---
## Signif. codes:
##   0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1  ' ' 1
##
## Residual standard error: 57.01 on 28 degrees of freedom
## Multiple R-squared:  0.3843, Adjusted R-squared:  0.3623
## F-statistic: 17.48 on 1 and 28 DF,  p-value: 0.0002583


##
## Call:
## lm(formula = d$price ~ d$sqft + d$style)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -49.388 -29.853  -6.388  38.123  64.333
##
## Coefficients:
##              Estimate Std. Error t value
## (Intercept)  98.24833   33.78449   2.908
## d$sqft        0.10977    0.01829   6.002
## d$styleRan   50.00000   17.75836   2.816
## d$styleSL   100.00000   17.75836   5.631
##              Pr(>|t|)
## (Intercept)  0.00735 **
## d$sqft      2.45e-06 ***
## d$styleRan   0.00916 **
## d$styleSL   6.41e-06 ***
## ---
## Signif. codes:
##   0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1  ' ' 1
##
```

```
## Residual standard error: 39.71 on 26 degrees of freedom
## Multiple R-squared:  0.7226, Adjusted R-squared:  0.6906
## F-statistic: 22.58 on 3 and 26 DF,  p-value: 2.074e-07

##
## Call:
## lm(formula = d$price ~ d$sqft + d$Col + d$SL)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -49.388 -29.853  -6.388  38.123  64.333
##
## Coefficients:
##              Estimate Std. Error t value
## (Intercept) 148.24833   33.78449   4.388
## d$sqft        0.10977    0.01829   6.002
## d$Col1      -50.00000   17.75836  -2.816
## d$SL1        50.00000   17.75836   2.816
##             Pr(>|t|)
## (Intercept) 0.000169 ***
## d$sqft      2.45e-06 ***
## d$Col1      0.009164 **
## d$SL1       0.009164 **
## ---
## Signif. codes:
##   0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1  ' ' 1
##
## Residual standard error: 39.71 on 26 degrees of freedom
## Multiple R-squared:  0.7226, Adjusted R-squared:  0.6906
## F-statistic: 22.58 on 3 and 26 DF,  p-value: 2.074e-07
```