ECON
Assignment-6
Piyush Kulkarni
pxk161130

Q.
Q.7.1

a) $sal = 24200 + 1643\, GPA + 5033\, Metric$

Everything kept const, one unit increase in GPA will lead ~~to~~ $1643 increase in salary.
Everything else kept constant, salary of student taking econometrics is higher by 24200 + 5033 = $29233 higher than that of not taking it.
Intercept ~~dosen't~~ mean when everything else is zero, sal = 24200 which dosen't make any sense
$R^2 = 0.74$, 74% variation in salary is explained by model

b) $sal = \cancel{24} \beta_1 + \beta_2\, GPA + \beta_3\, Metric + \beta_4\, Female$
$[(female) = 1]$

~~for~~ men
$sal = \beta_1 + \beta_2 GPA + \beta_3\, Metric$
for Female
$sal = (\beta_1 + \beta_4) + \beta_2 GPA + \beta_3\, Metric$

Date : ______ Sr. No. ______

c) $Sal = \beta_1 + \beta_2 GPA + \beta_3 Metric + \beta_4 Femal$
$+ \beta_5 (Female \times metric)$

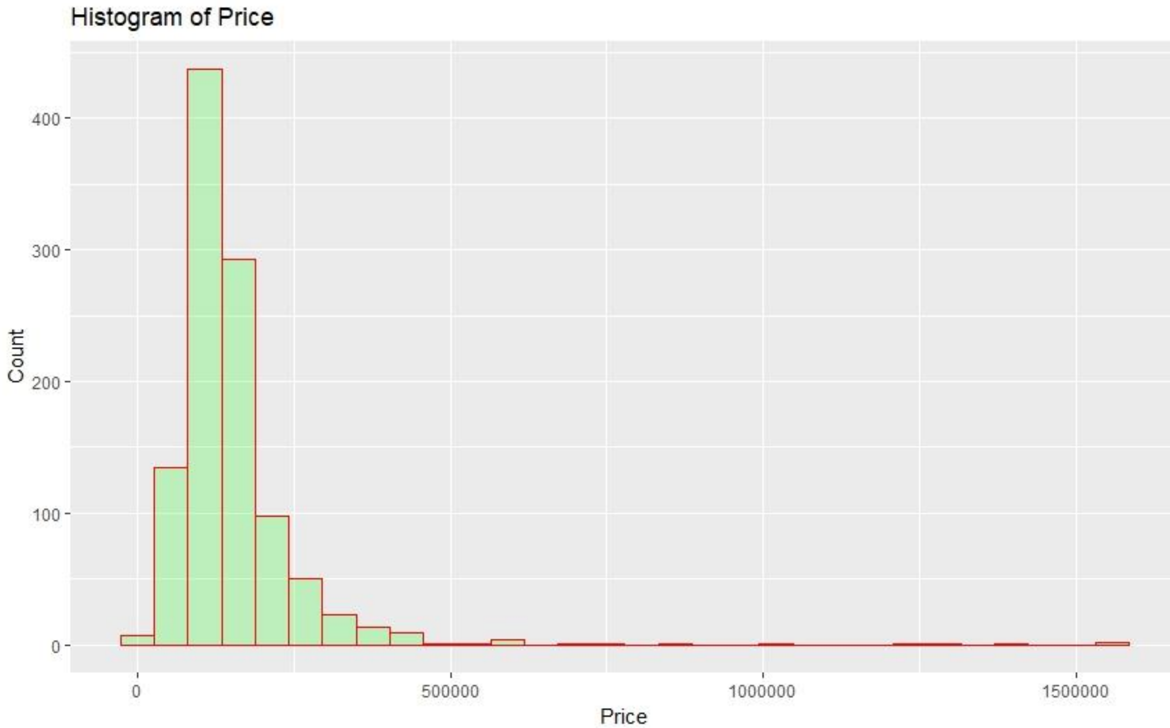
Q.7.4

a) SQFT → one unit increase in ~~hou~~ SQFT will increase the price by \$ 72.7878 keeping everything else const
age → 1 yr increase in age of house will decrease the price by \$ 179.4623 keeping everything else const.
both are sigintficant at $\alpha = 1\%$.

b) $\partial 92$ → house prices in 92 will be \$4397.84 lower than that in 91
= 17063.35

- $\partial 93$ → prices in 93 will be \$ 10435.47 lower than that of in 91 = 11020.73
- $\partial 94$ → house prices in 94 will be \$ 13173.51 lower than that of in 91 = \$8282.69
- $\partial 95$ → — " — in 95 will be \$ 19040.8 less than that of in 91 = \$ 2415.37
- $\partial 96$ → — " — in 96 will be \$ 23663.51 lower than that of in 91 = -2,207.31

Signature ______


Histogram of Price
400
300
200
100
0
Count
0
500000
1000000
1500000
Price

Date: ______ Sr. No. ______

c) Model will have perfect collinea-rity. The software will not be abele to give out put.

Q. 7.15 Solved using R

a)

b) Adj $R^2 = 0.7351$

∴ Model is able to explain 73.5% variation in prices. Model fits the data very well.

All variables except pool & bedroom are statistically significant at 5%.

~~sqft → has expec~~

sqft, baths, owner, fireplace, waterfront all have expected +ve signs. they increase the price.

Age have expected -ve sign

pool & bedroom have -ve signs which is not expected.

Houses with waterfront will be sold at $100(\exp(0.1099)-1)$ higher $\approx 11.6\%$.

c) Adj R^2 of model increased a bit → 73.64%.

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Sr. No.

~~co~~ -ve coef. of bedroom & pool didn't change.

price for tradational house = -4.5%

price for waterfront = 16.5% ↑

price for tradition house with water front = ~~-17.21%~~

-4.5 + 16.5 - 17.21

N.

= -5.18%

- Traditional houses selling price is 4.5% lower than non traditional
- houses on waterfront have 16.5% more pric than that of non waterfront
- ~~A~~ Traditional house on waterfront sells 5.18% less than non tradi-otal & not on waterfront.

all are significant at 5% significance leve except pool & bedroom.

d) SSE_R = ~~77~~ 78.77

SSE_U = 75.99

$$F_{stat} = \frac{78.77 - 75.99 / 9}{75.99 / 1062}$$

= 4.6272

F_c = 1.88

H_0: All trad var = 0

H_1: At least one of trad var ≠ 0

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Date: Sr. No.

We reject the null hypothesis and conclude that there are different regression f^n for traditional & non traditional houses

c) $\log_e\left(\frac{Price}{1000}\right) = 5.005$

$Price = \exp(5.005) \times 1000$
$= \$149157.1$

~~Q17~~

Q.7.16 a) histogram of price is positively skewed with more prices concentrated towards left.
Histogram of ln(Price) ~~als~~ is almost normally distributed.

b) $\ln(sPrice) = 3.98 + 0.05\ livarea - 0.03\ beds - 0.010\ baths + 0.25\ lgelot + 0.07\ pool - 0.0013\ age$

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```
> library(ggplot2)

> ggplot(br2, aes(br2$price)) +

+   geom_histogram(col="red",fill="green", alpha = .2) +

+   labs(title = "Histogram of Price") +

+   labs(x = "Price" , y = "Count")

`stat_bin()` using `bins = 30`. Pick better value with `binwidth`.

> model <- lm(log(price/1000) ~ I(sqft/100) + bedrooms + baths + age + owner + pool + traditional + fireplace + waterfront, data = br2)

> summary(model)


Call:

lm(formula = log(price/1000) ~ I(sqft/100) + bedrooms + baths +

    age + owner + pool + traditional + fireplace + waterfront,

    data = br2)


Residuals:

     Min       1Q   Median       3Q      Max

-1.13459 -0.12758  0.00656  0.14785  1.06650


Coefficients:

              Estimate Std. Error t value Pr(>|t|)

(Intercept)  3.9808326  0.0458947  86.738  < 2e-16 ***

I(sqft/100)  0.0299011  0.0014059  21.269  < 2e-16 ***

bedrooms    -0.0315060  0.0166109  -1.897 0.058135 .

baths        0.1901190  0.0205579   9.248  < 2e-16 ***

age         -0.0062145  0.0005179 -11.999  < 2e-16 ***

owner        0.0674654  0.0177460   3.802 0.000152 ***

pool        -0.0042748  0.0315812  -0.135 0.892353

traditional -0.0560926  0.0170267  -3.294 0.001019 **

fireplace    0.0842748  0.0190150   4.432 1.03e-05 ***

waterfront   0.1099700  0.0333550   3.297 0.001010 **

---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.27 on 1070 degrees of freedom
Multiple R-squared:  0.7373,	Adjusted R-squared:  0.7351
F-statistic: 333.7 on 9 and 1070 DF,  p-value: < 2.2e-16

> 100*(exp(.1099)-1)
[1] 11.61664
>
> model <- lm(log(price/1000) ~ I(sqft/100) + bedrooms + baths + age + owner + pool + traditional + fireplace +
+              waterfront + I(waterfront * traditional), data = br2)
> summary(model)

Call:
lm(formula = log(price/1000) ~ I(sqft/100) + bedrooms + baths +
    age + owner + pool + traditional + fireplace + waterfront +
    I(waterfront * traditional), data = br2)

Residuals:
     Min       1Q   Median       3Q      Max
-1.13891 -0.12591  0.00672  0.14693  1.05734

Coefficients:
                              Estimate Std. Error t value Pr(>|t|)
(Intercept)                  3.9711130  0.0459460  86.430  < 2e-16 ***
I(sqft/100)                  0.0300308  0.0014034  21.399  < 2e-16 ***
bedrooms                    -0.0313330  0.0165702  -1.891  0.05890 .
baths                        0.1882577  0.0205208   9.174  < 2e-16 ***
age                         -0.0061470  0.0005174 -11.881  < 2e-16 ***
owner                        0.0683701  0.0177061   3.861  0.00012 ***
pool                        -0.0023939  0.0315125  -0.076  0.93946
traditional                 -0.0449127  0.0175612  -2.557  0.01068 *
```

```
fireplace                  0.0873139  0.0190070   4.594 4.87e-06 ***
waterfront                 0.1653741  0.0399505   4.139 3.75e-05 ***
I(waterfront * traditional) -0.1721747  0.0687162  -2.506  0.01237 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.2693 on 1069 degrees of freedom
Multiple R-squared:  0.7389,	Adjusted R-squared:  0.7364
F-statistic: 302.5 on 10 and 1069 DF,  p-value: < 2.2e-16

> Resstricted <- lm(log(price/1000) ~ I(sqft/100) + bedrooms + baths + age + owner + pool + fireplace +
+              waterfront, data = br2)
> summary(Resstricted)

Call:
lm(formula = log(price/1000) ~ I(sqft/100) + bedrooms + baths +
    age + owner + pool + fireplace + waterfront, data = br2)

Residuals:
     Min       1Q   Median       3Q      Max
-1.15673 -0.12355 -0.00287  0.14356  1.03816

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  3.9701078  0.0459892  86.327  < 2e-16 ***
I(sqft/100)  0.0301592  0.0014101  21.387  < 2e-16 ***
bedrooms    -0.0405182  0.0164592  -2.462 0.013984 *
baths        0.1894469  0.0206512   9.174  < 2e-16 ***
age         -0.0061907  0.0005203 -11.899  < 2e-16 ***
owner        0.0650077  0.0178117   3.650 0.000275 ***
pool         0.0007741  0.0316887   0.024 0.980516
fireplace    0.0911987  0.0189852   4.804 1.78e-06 ***
```

```
waterfront   0.1225762  0.0332869   3.682 0.000243 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.2712 on 1071 degrees of freedom
Multiple R-squared:  0.7347,      Adjusted R-squared:  0.7327
F-statistic: 370.7 on 8 and 1071 DF,  p-value: < 2.2e-16

> anova(Resstricted)
Analysis of Variance Table

Response: log(price/1000)
             Df  Sum Sq Mean Sq   F value    Pr(>F)
I(sqft/100)    1 185.472 185.472 2521.7197 < 2.2e-16 ***
bedrooms       1   0.010   0.010    0.1387 0.7096829
baths          1  15.622  15.622  212.3958 < 2.2e-16 ***
age            1  12.521  12.521  170.2406 < 2.2e-16 ***
owner          1   1.749   1.749   23.7851 1.240e-06 ***
pool           1   0.002   0.002    0.0286 0.8658445
fireplace      1   1.726   1.726   23.4737 1.453e-06 ***
waterfront     1   0.997   0.997   13.5602 0.0002426 ***
Residuals   1071  78.772   0.074
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
> Unristricted <- lm(log(price/1000) ~ I(sqft/100) + bedrooms + baths + age + owner + pool + traditional + fireplace +
+              waterfront + I((sqft/100) * traditional) + I(bedrooms * traditional)+
+               I(baths * traditional) + I(age * traditional) + I(owner * traditional) + I(pool * traditional)+
+               I(fireplace * traditional) + I(waterfront * traditional), data = br2)
>
> summary(Unristricted)

Call:
```

```
lm(formula = log(price/1000) ~ I(sqft/100) + bedrooms + baths +
    age + owner + pool + traditional + fireplace + waterfront +
    I((sqft/100) * traditional) + I(bedrooms * traditional) +
    I(baths * traditional) + I(age * traditional) + I(owner *
    traditional) + I(pool * traditional) + I(fireplace * traditional) +
    I(waterfront * traditional), data = br2)

Residuals:
    Min      1Q  Median      3Q     Max
-1.1376 -0.1248  0.0045  0.1462  1.0578

Coefficients:
                              Estimate Std. Error t value Pr(>|t|)
(Intercept)                  4.0672688  0.0576957  70.495  < 2e-16 ***
I(sqft/100)                  0.0324010  0.0018412  17.598  < 2e-16 ***
bedrooms                    -0.0713737  0.0236571  -3.017 0.002614 **
baths                        0.1831139  0.0288594   6.345 3.29e-10 ***
age                         -0.0054674  0.0007292  -7.498 1.37e-13 ***
owner                        0.0388479  0.0258967   1.500 0.133884
pool                         0.0021253  0.0419397   0.051 0.959594
traditional                 -0.3350839  0.0944926  -3.546 0.000408 ***
fireplace                    0.0578017  0.0296703   1.948 0.051662 .
waterfront                   0.1729789  0.0406915   4.251 2.32e-05 ***
I((sqft/100) * traditional) -0.0052974  0.0028196  -1.879 0.060549 .
I(bedrooms * traditional)    0.0989064  0.0335594   2.947 0.003277 **
I(baths * traditional)       0.0310767  0.0412135   0.754 0.450991
I(age * traditional)        -0.0012916  0.0010325  -1.251 0.211211
I(owner * traditional)       0.0586870  0.0353000   1.663 0.096703 .
I(pool * traditional)       -0.0237596  0.0630941  -0.377 0.706566
I(fireplace * traditional)   0.0650471  0.0386865   1.681 0.092982 .
I(waterfront * traditional) -0.2069886  0.0710609  -2.913 0.003657 **
---
```

```
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.2672 on 1062 degrees of freedom
Multiple R-squared:  0.7447,	Adjusted R-squared:  0.7406
F-statistic: 182.2 on 17 and 1062 DF,  p-value: < 2.2e-16

> anova(Unristricted)
Analysis of Variance Table

Response: log(price/1000)
                            Df  Sum Sq Mean Sq   F value    Pr(>F)
I(sqft/100)                  1 185.472 185.472 2598.5844 < 2.2e-16 ***
bedrooms                     1   0.010   0.010    0.1429 0.7054960
baths                        1  15.622  15.622  218.8698 < 2.2e-16 ***
age                          1  12.521  12.521  175.4297 < 2.2e-16 ***
owner                        1   1.749   1.749   24.5101 8.593e-07 ***
pool                         1   0.002   0.002    0.0294 0.8638352
traditional                  1   1.295   1.295   18.1388 2.236e-05 ***
fireplace                    1   1.428   1.428   20.0066 8.548e-06 ***
waterfront                   1   0.792   0.792   11.0991 0.0008934 ***
I((sqft/100) * traditional)  1   0.061   0.061    0.8608 0.3537384
I(bedrooms * traditional)    1   0.778   0.778   10.9046 0.0009912 ***
I(baths * traditional)       1   0.106   0.106    1.4898 0.2225246
I(age * traditional)         1   0.093   0.093    1.2968 0.2550634
I(owner * traditional)       1   0.324   0.324    4.5370 0.0333982 *
I(pool * traditional)        1   0.017   0.017    0.2353 0.6276871
I(fireplace * traditional)   1   0.197   0.197    2.7545 0.0972747 .
I(waterfront * traditional)  1   0.606   0.606    8.4846 0.0036566 **
Residuals                 1062  75.799   0.071
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
> qf(.95,9,1062)
```

[1] 1.88868

> d = data.frame(sqft = 2500, bedrooms = 3, baths = 2, age = 20, owner = 1, pool = 0, traditional = 1, fireplace =1, waterfront =0)

>

> predict(Unristricted, d)

1

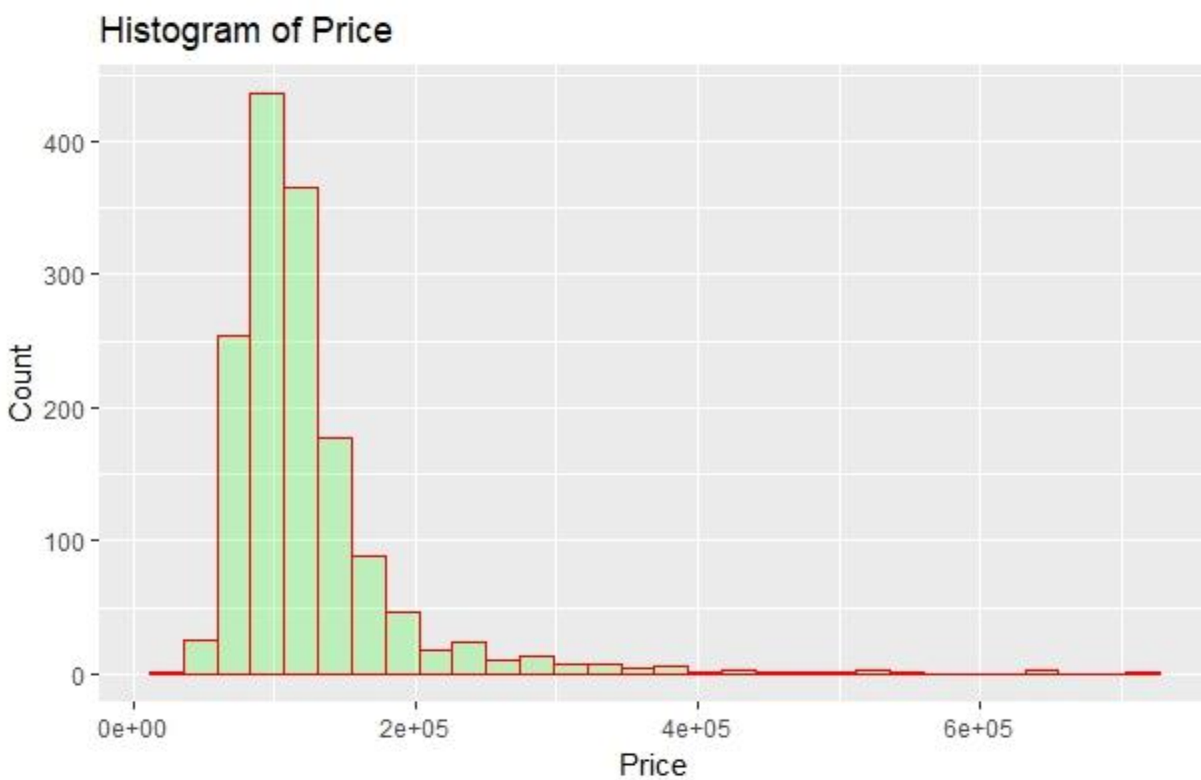
5.005958

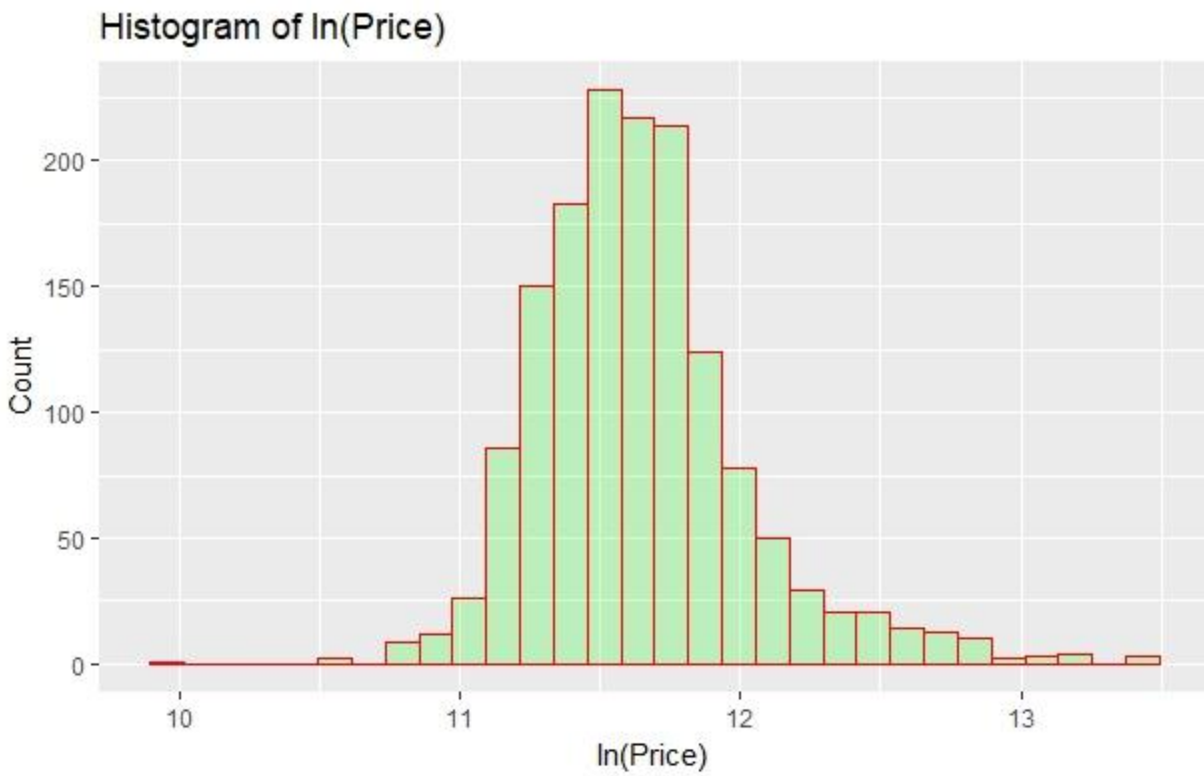
>

> exp(5.005)*1000

[1] 149157.1

Q 7.16




Histogram of ln(Price)
Count
200
150
100
50
0
10
11
12
13
ln(Price)

Date : Sr. No.

All coefficients except bath is stastically significant at 5%. livarea, house ~~sz~~ size grater than 0.5 acres and presence of pool increase the ~~16~~ house price.

Age, ~~numb.~~ bedrooms & bathrooms decrease house prices.

c) price of houses with lot size grater than 0.5 acres is

$= 100 \times (exp(0.2530)-1)$

$= 28.78\%$ grater than that of houses having lot size less than 0.5 acres.

d) The variable is significant at 5% significance level.

houses with larger lotsize than 0.5 acres have reduced selling price by ~~8~~ 1.6%.

It could be the fact that houses having larger lot size have larger living area.

~~houses~~ Increasing in living area for houses with lot ~~s~~ size less than 0.5 acre by 100 sq.ft will increase price by 5.8%.

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Date: ___ Sr. No. ___

Addition of ~~variate~~ interaction variable increased coef of lotsize variable dramatically.

e) $F_{stat} = \dfrac{SSE_R - SSE_U / J}{\dfrac{SSE_U}{N-K}}$

$= \dfrac{72.063 - 65.471 / 6}{\dfrac{65.471}{1488}}$

$= \dfrac{1.0986}{0.0439}$

$= 24.968$

$F_{critical} = 2.10$

H_0: coef of lot variables = 0

✓ H_1: at least one of lot variables $\neq 0$

We reject the null hypothesis and conclude that ~~eqn~~ pricing ~~functi~~ of houses with large lot size & small lot size is not same.

Signature ___

```
> # -------------Question 7.16
> ggplot(stckton4, aes(stckton4$sprice)) +
+   geom_histogram(col="red",fill="green", alpha = .2) +
+   labs(title = "Histogram of Price") +
+   labs(x = "Price" , y = "Count")
`stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
> #With log price
>
> ggplot(stckton4, aes(log(sprice))) +
+   geom_histogram(col="red",fill="green", alpha = .2) +
+   labs(title = "Histogram of ln(Price)") +
+   labs(x = "ln(Price)" , y = "Count")
`stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
> model <- lm(log(sprice/1000) ~ livarea + beds + baths + lgelot + pool + age, data = stckton4)
> summary(model)

Call:
lm(formula = log(sprice/1000) ~ livarea + beds + baths + lgelot +
    pool + age, data = stckton4)

Residuals:
     Min       1Q   Median       3Q      Max
-1.29751 -0.11979 -0.00427  0.12671  2.00684

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  3.9859688  0.0373406 106.746  < 2e-16 ***
livarea      0.0539316  0.0017080  31.576  < 2e-16 ***
beds        -0.0382209  0.0113593  -3.365 0.000786 ***
baths       -0.0102729  0.0165268  -0.622 0.534309
lgelot       0.2530908  0.0255382   9.910  < 2e-16 ***
pool         0.0786611  0.0230548   3.412 0.000662 ***
```

```
age        -0.0013113  0.0004601  -2.850 0.004433 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.2128 on 1493 degrees of freedom
Multiple R-squared:  0.6884,	Adjusted R-squared:  0.6871
F-statistic: 549.6 on 6 and 1493 DF,  p-value: < 2.2e-16

>
> exp(.2530)
[1] 1.287883
> # Interaction variable
>
> unristricted <- model <- lm(log(sprice/1000) ~ livarea + beds + baths + lgelot + pool + age + I(livarea * lgelot), data = stckton4)
> summary(unristricted)

Call:
lm(formula = log(sprice/1000) ~ livarea + beds + baths + lgelot +
    pool + age + I(livarea * lgelot), data = stckton4)

Residuals:
     Min       1Q   Median       3Q      Max
-1.17288 -0.12284 -0.00263  0.12812  2.02143

Coefficients:
                     Estimate Std. Error t value Pr(>|t|)
(Intercept)         3.964941   0.037033 107.064  < 2e-16 ***
livarea             0.058857   0.001864  31.582  < 2e-16 ***
beds               -0.047996   0.011328  -4.237 2.41e-05 ***
baths              -0.020062   0.016398  -1.223 0.221356
lgelot              0.613440   0.063209   9.705  < 2e-16 ***
```

```
pool              0.085349   0.022795   3.744 0.000188 ***
age              -0.001612   0.000457  -3.527 0.000433 ***
I(livarea * lgelot) -0.016125   0.002593  -6.217 6.55e-10 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.2102 on 1492 degrees of freedom
Multiple R-squared:  0.6962,	Adjusted R-squared:  0.6948
F-statistic: 488.5 on 7 and 1492 DF,  p-value: < 2.2e-16

> # ---------Chow Test
> Restricted <- lm(log(sprice/1000) ~ livarea + beds + baths + pool + age, data = stckton4)
> summary(Restricted)

Call:
lm(formula = log(sprice/1000) ~ livarea + beds + baths + pool +
    age, data = stckton4)

Residuals:
     Min       1Q   Median       3Q      Max
-1.16849 -0.13118 -0.01003  0.12675  2.00675

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  3.9794107  0.0385303 103.280  < 2e-16 ***
livarea      0.0606975  0.0016157  37.567  < 2e-16 ***
beds        -0.0594013  0.0115137  -5.159 2.81e-07 ***
baths       -0.0262415  0.0169748  -1.546   0.1223
pool         0.0989178  0.0236994   4.174 3.17e-05 ***
age         -0.0007805  0.0004716  -1.655   0.0981 .
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

```
Residual standard error: 0.2196 on 1494 degrees of freedom
Multiple R-squared:  0.6679,	Adjusted R-squared:  0.6667 
F-statistic: 600.8 on 5 and 1494 DF,  p-value: < 2.2e-16

> anova(Restricted)
Analysis of Variance Table

Response: log(sprice/1000)
           Df  Sum Sq Mean Sq   F value    Pr(>F)    
livarea      1 142.469 142.469 2953.6328 < 2.2e-16 ***
beds         1   1.445   1.445   29.9564 5.175e-08 ***
baths        1   0.056   0.056    1.1608   0.28147    
pool         1   0.799   0.799   16.5546 4.974e-05 ***
age          1   0.132   0.132    2.7389   0.09814 .  
Residuals 1494  72.063   0.048                        
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
> # ----
> Unrestricted <- lm(log(sprice/1000) ~ livarea + beds + baths + pool + age + lgelot +  I(lgelot * livarea) + 
+                    I(lgelot * beds ) + I(lgelot * baths)+ I(lgelot * pool) + I(lgelot * age), data = stckton4)
> summary(Unrestricted)

Call:
lm(formula = log(sprice/1000) ~ livarea + beds + baths + pool + 
    age + lgelot + I(lgelot * livarea) + I(lgelot * beds) + I(lgelot * 
    baths) + I(lgelot * pool) + I(lgelot * age), data = stckton4)

Residuals:
     Min       1Q   Median       3Q      Max 
-1.09828 -0.12100 -0.00141  0.12783  2.02787 
```

```
Coefficients:
                    Estimate Std. Error t value Pr(>|t|)
(Intercept)         3.982753   0.038386 103.755  < 2e-16 ***
livarea             0.060383   0.001925  31.365  < 2e-16 ***
beds               -0.052190   0.011950  -4.368 1.34e-05 ***
baths              -0.033442   0.017394  -1.923 0.054714 .
pool                0.069685   0.025131   2.773 0.005627 **
age                -0.001598   0.000484  -3.301 0.000986 ***
lgelot              0.429324   0.140851   3.048 0.002344 **
I(lgelot * livarea) -0.026640   0.004325  -6.159 9.39e-10 ***
I(lgelot * beds)     0.043412   0.037391   1.161 0.245819
I(lgelot * baths)    0.116104   0.051893   2.237 0.025409 *
I(lgelot * pool)     0.056183   0.060423   0.930 0.352616
I(lgelot * age)     -0.000219   0.001447  -0.151 0.879738
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.2098 on 1488 degrees of freedom
Multiple R-squared:  0.6982,	Adjusted R-squared:  0.696
F-statistic:   313 on 11 and 1488 DF,  p-value: < 2.2e-16

> anova(Unrestricted)
Analysis of Variance Table

Response: log(sprice/1000)
                      Df  Sum Sq Mean Sq   F value    Pr(>F)
livarea                1 142.469 142.469 3237.9682 < 2.2e-16 ***
beds                   1   1.445   1.445   32.8402 1.209e-08 ***
baths                  1   0.056   0.056    1.2726   0.25947
pool                   1   0.799   0.799   18.1483 2.172e-05 ***
age                    1   0.132   0.132    3.0025   0.08334 .
lgelot                 1   4.448   4.448  101.0903 < 2.2e-16 ***
```

```
I(lgelot * livarea)    1   1.708   1.708   38.8091 6.070e-10 ***
I(lgelot * beds)       1   0.117   0.117    2.6499   0.10377
I(lgelot * baths)      1   0.282   0.282    6.4049   0.01148 *
I(lgelot * pool)       1   0.037   0.037    0.8448   0.35818
I(lgelot * age)        1   0.001   0.001    0.0229   0.87974
Residuals           1488  65.471   0.044
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
>
> qf(.95,6,1488)
[1] 2.104665
```