File Name: HW_1
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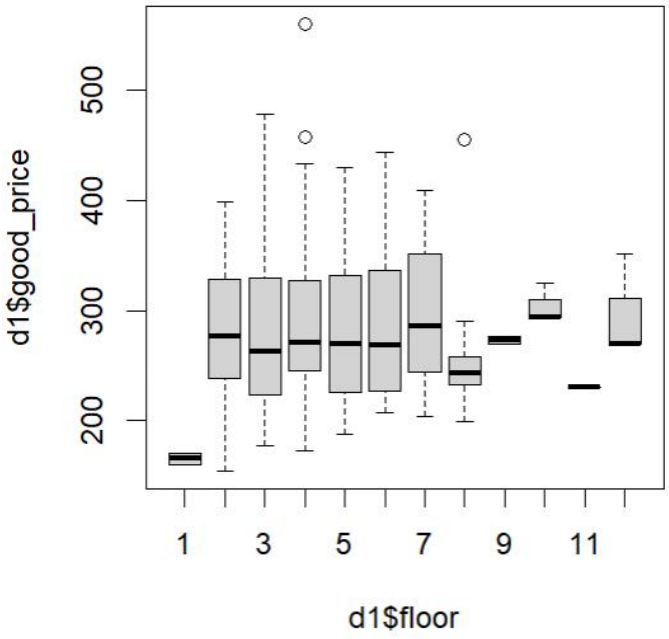
```
#1. The number of apartments for each number of garages
levels(d1$garage)
table(d1$garage)
summary(d1)
```

```
> levels(d1$garage)
[1] "0" "1" "2"
> table(d1$garage)

  0   1   2
167  49   2
```

```
# 2.boxplot for the apartment's price for each floor
boxplot(d1$good_price~d1$floor,d1)
```




```
# 3.table showing No.of apartments for each No.of rooms and garages
t1 = table(rooms = d1$rooms,garage = d1$garage)
t1
```

```
> t1 = table(rooms = d1$rooms,garage = d1$garage)
> t1
     garage
rooms   0   1   2
    3   3   0   0
    4  46   5   0
    5 104  35   2
    6  13   8   0
    7   1   1   0
```

```
#4. Average apartment price(mean) for each room and garage
list1 = list(rooms = d1$rooms,garage = d1$garage)
t1=tapply(d1$good_price,list1,mean)
round(t1,2)
```

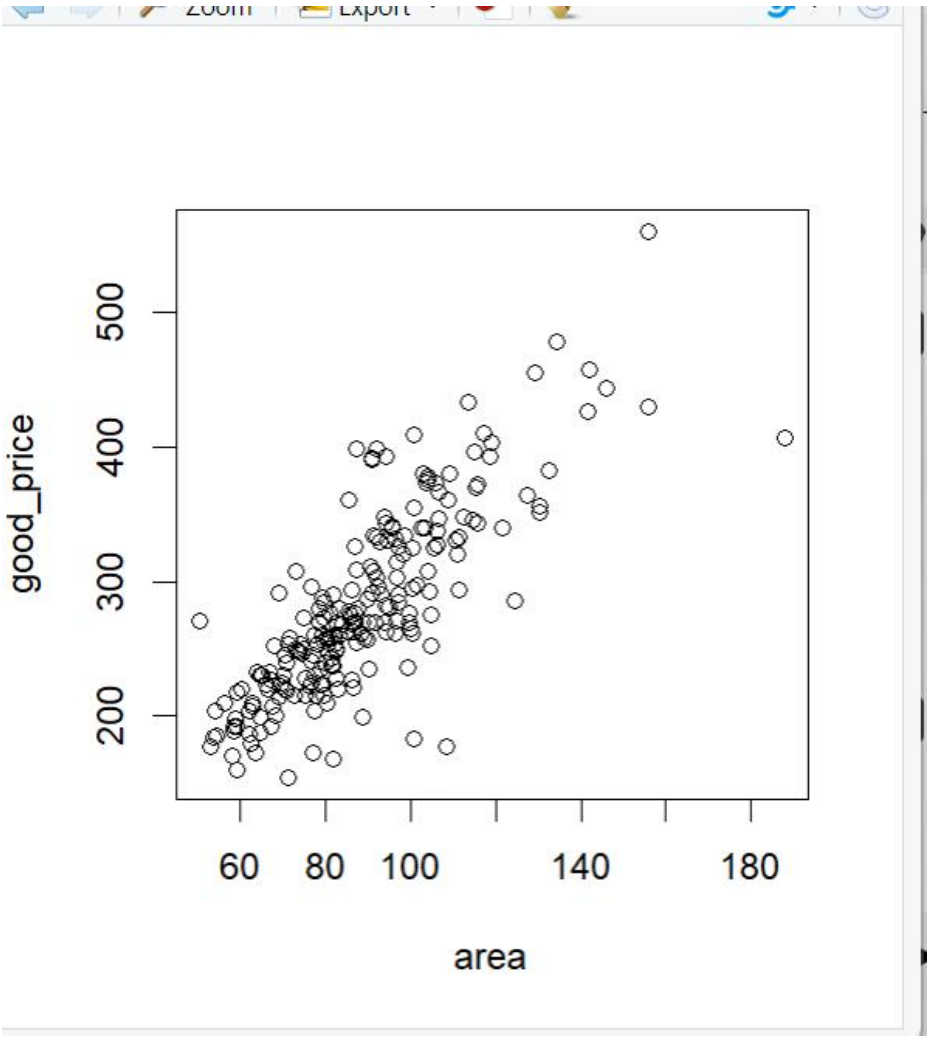
```
> list1 = list(rooms = d1$rooms,garage = d1$garage)
> t1=tapply(d1$good_price,list1,mean)
> round(t1,2)
     garage
rooms      0     1      2
    3 230.33    NA     NA
    4 229.27 279.2     NA
    5 261.16 344.1 369.25
    6 358.99 403.5     NA
    7 443.60 286.0     NA
```

```
#5. The min and max price of apartments with area between 80 and 90 square meters
d2 = d1[d1$area>=80|d1$area<=90,c(2)]
head(d2)
min(d2)
max(d2)
```

```
> d2 = d1[d1$area>=80|d1$area<=90,c(2)]
> head(d2)
[1] 228.0 409.0 199.0 180.0 443.6 173.0
> min(d2)
[1] 155
> max(d2)
[1] 560
>
```

```r
#6. The numerical variable that is most correlated with price
d3 = d1[,sapply(d1,is.numeric)]
d3$price = NULL
cor(d3) #area is most correlated with price
plot(good_price~area,d3)
```

```
> d3 = d1[,sapply(d1,is.numeric)]
> d3$price = NULL
> cor(d3) #area is most correlated with price
            good_price        area         age       floor       rooms
good_price  1.00000000  0.80914892 -0.27240165  0.02910637  0.52557062
area        0.80914892  1.00000000 -0.05226235  0.08165600  0.63816604
age        -0.27240165 -0.05226235  1.00000000 -0.08124348 -0.08274509
floor       0.02910637  0.08165600 -0.08124348  1.00000000  0.13011339
rooms       0.52557062  0.63816604 -0.08274509  0.13011339  1.00000000
> plot(good_price~area,d3)
>
```

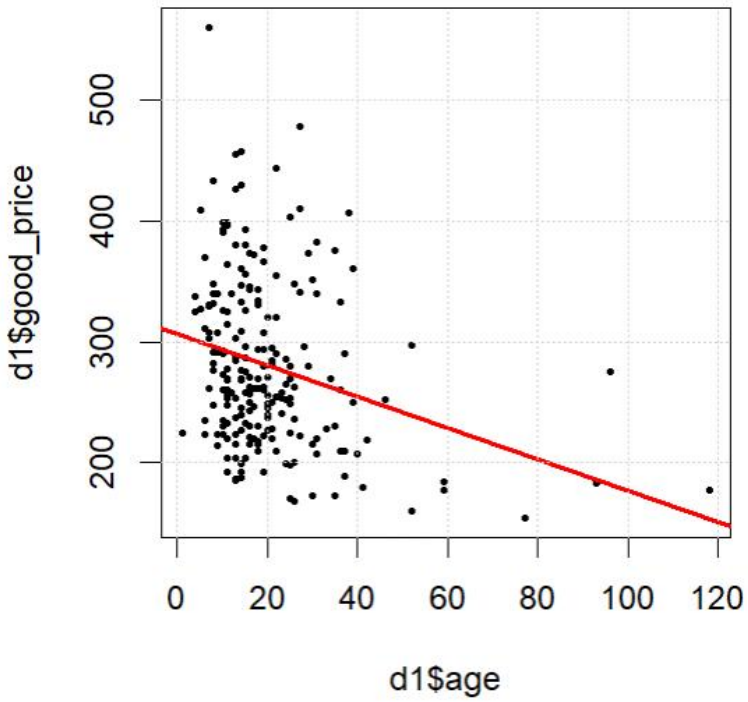



```r
# 7.On Average, street type S4 is $10.67 more expensive than apartment in type S2.
d4 = d1[d1$street=="S4",2]
d2 = d1[d1$street=="S2",2]
mean(d4)-mean(d2)
```

```
> d4 = d1[d1$street=="S4",2]
> d2 = d1[d1$street=="S2",2]
> mean(d4)-mean(d2)
[1] 10.67302
```

```
#8. The scatterplot of price against age with regression line and average price trend.
plot(d1$good_price~d1$age,data=d1,pch=20,cex=0.75)
m1<-lm(d1$good_price~d1$age,data = d1)
coefficients(m1)
abline(m1,col = "red",lwd=2)
grid()
# Intercept:306.475;x:-1.293
#For each additional year of age, the average price decreases $1.29
```

```
> plot(d1$good_price~d1$age,data=d1,pch=20,cex=0.75)
> m1<-lm(d1$good_price~d1$age,data = d1)
> coefficients(m1)
(Intercept)       d1$age
 306.475159    -1.293438
> abline(m1,col = "red",lwd=2)
> grid()
```



```r
#9.The scatterplot of price against area with cost 2500 euros.
#Suppose 1 euro is equal to 1.08 dollars, then 2500 euros will be 2700 dollars.
dollars = 2500*0.8/1000
d5 = d1[d1$good_price= dollars]
plot(d5~d1$area,data = d1,pch=19,cex=0.75)
m2<-lm(d1$good_price~area,d1)
coefficients(m2)
abline(m2)
abline(m2,col = "red")
abline(m2,col = "red",lwd=2)
grid()
# What is your estimate of how much is the price increase by square meter?
# Intercept = 40.818, area = 2.704
# I estimate that square meter increase 1 meter, price will increase $2.7.
```