Peer-graded Assignment: Submit your Project and Review Others

Reviews 2 left to complete

It looks like this is your first peer-graded assignment. Learn more

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House Sale

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PROMPT

Question 1) Display the data types of each column using the attribute *dtypes*, then take a screenshot and submit it, include your code in the image.

```
In [15]: df.dtypes

Out[15]: id                int64
         date             object
         price           float64
         bedrooms          int64
         bathrooms       float64
         sqft_living       int64
         sqft_lot          int64
         floors          float64
         waterfront        int64
         view              int64
         condition         int64
         grade             int64
         sqft_above        int64
         sqft_basement     int64
         yr_built          int64
         yr_renovated      int64
         zipcode           int64
         lat             float64
         long            float64
         sqft_living15     int64
         sqft_lot15        int64
         dtype: object
```

RUBRIC

1 a) Does the assignment use the data attribute **dtypes** to get the data type and display the following image

```
Unnamed: 0         int64
id                 int64
date              object
price            float64
bedrooms         float64
bathrooms        float64
sqft_living        int64
sqft_lot           int64
floors           float64
waterfront         int64
view               int64
condition          int64
grade              int64
sqft_above         int64
sqft_basement      int64
yr_built           int64
yr_renovated       int64
zipcode            int64
lat              float64
long             float64
sqft_living15      int64
sqft_lot15         int64
dtype: object
```

- ○ 0 pts
  No
- ◉ 1 pt
  Yes

PROMPT

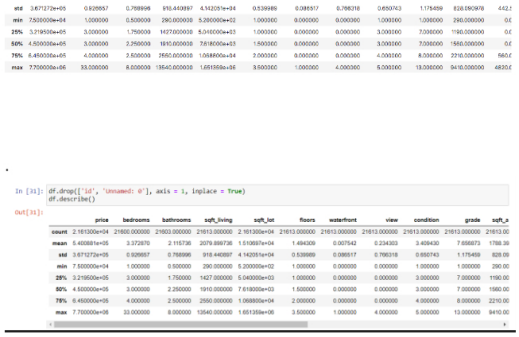
Question 2) Drop the columns *"id"* and *"Unnamed: 0"* from axis 1 using the method *drop()*, then use the method *describe()* to obtain a statistical summary of the data. Take a screenshot and submit it, make sure the *inplace* parameter is set to *True*. Your output should look like this:

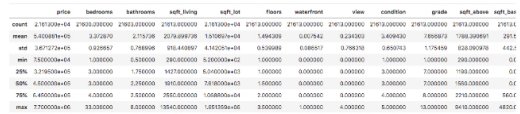
	price	bedrooms	bathrooms	sqft_living	sqft_lot	floors	waterfront	view	condition	grade	sqft_above	sqft_bas
count	2.161300e+04	21600.000000	21603.000000	21613.000000	2.161300e+04	21613.000000	21613.000000	21613.000000	21613.000000	21613.000000	21613.000000	21613.
mean	5.400881e+05	3.372870	2.115736	2079.899736	1.510697e+04	1.494309	0.007542	0.234303	3.409430	7.656873	1788.390691	291.

RUBRIC

Question 2) Does the assignment drop the columns *"id"* and *"Unnamed: 0"*

use the method **describe()** to obtain a statistical summary of the dataframe and produce the result. Note the missing collumns





- 0 pts
  No
- 1 pt
  Partially complete
- 2 pts
  Yes

PROMPT

Question 3) use the method value_counts to count the number of houses with unique floor values, use the method .to_frame() to convert it to a dataframe. Your output should look like this :

	floors
1.0	10680
2.0	8241
1.5	1910
3.0	613
2.5	161
3.5	8

Y

```
In [45]: df.floors.value_counts().to_frame()
Out[45]:
```

	floors
1.0	10680
2.0	8241
1.5	1910
3.0	613
2.5	161
3.5	8

RUBRIC

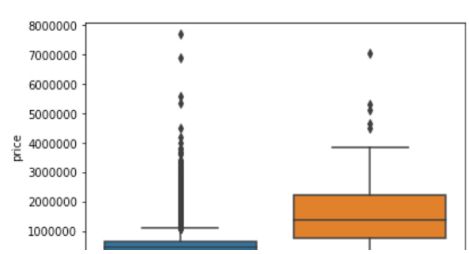
Question 3) does the assignment use the method **value_counts** to count the number of houses with unique floor values, then produce the following plot:

	floors
1.0	10680
2.0	8241
1.5	1910
3.0	613
2.5	161
3.5	8

- 0 pts
  No
- 0.5 pts
  They used the method **value_counts** on the correct column but did not produce the plot.
- 1 pt
  Yes

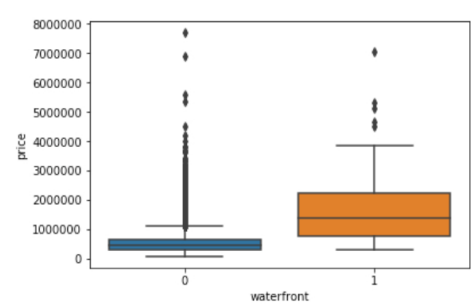
PROMPT

Question 4) use the function *boxplot* in the seaborn library to produce a plot that can be used to determine whether houses with a waterfront view or without a waterfront view have more price outliers. Your output should look like this with the code that produced it (the colors may be different) :



RUBRIC

Question 4) was the following plot produced:

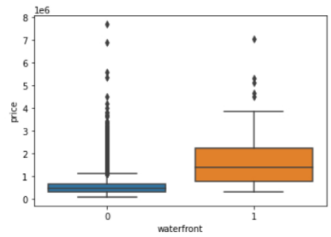


- 0 pts

.

```
sns.boxplot(x="waterfront", y="price", data=df)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x2cb2a432bb0>
```



.

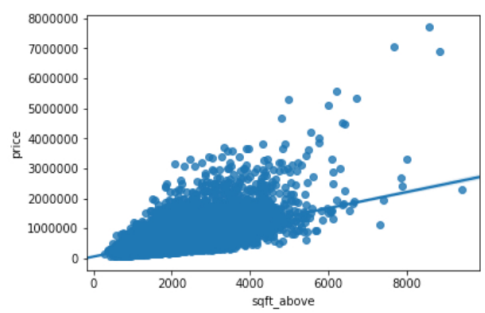
0 pts
No

1 pt
Yes

PROMPT

Question 5) Use the function *regplot* in the seaborn library to determine if the feature sqft_above is negatively or positively correlated with price. Take a screenshot of the plot and the code used to generate it.

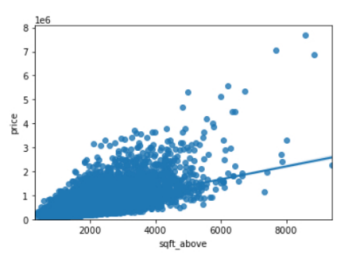
Your output should look like this with the code that produced it :



.

```
sns.regplot(x=df["sqft_above"],y=df["price"],data=df)
plt.ylim(0,)
```

```
(0.0, 8081250.0)
```



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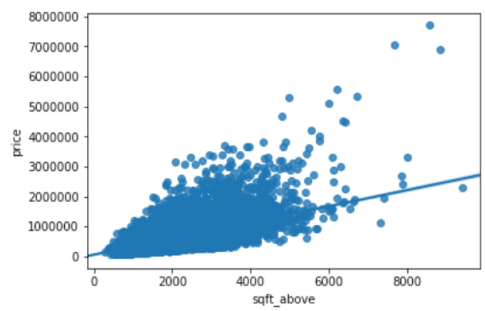
RUBRIC

Question 5) Was the following plot produced?



0 pts
No

1 pt
Yes

PROMPT

Question 6) Fit a linear regression model to predict the price using the feature 'sqft_living' then calculate the R^2. Take a screenshot of your code and the value of the R^2.

..

```
n [60]: x = df[['sqft_living']]
        y = df.price
```

RUBRIC

Question 6) Was a linear regression model fit and a R^2 of approximately 0.49285 calculated?

0 pts
No

```
lr = LinearRegression()
lr.fit(x, y)
lr.score(x, y)
```

Out[60]: 0.49285321790379316

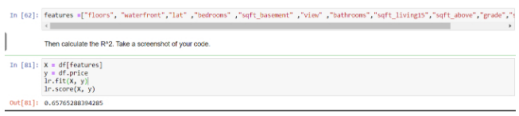
- 1 pt
  Partially complete
- 2 pts
  Yes

PROMPT

Question 7) Fit a linear regression model to predict the 'price' using the list of features:

- "floors"
- "waterfront"
- "lat"
- "bedrooms"
- "sqft_basement"
- "view"
- "bathrooms"
- "sqft_living15"
- "sqft_above"
- "grade"
- "sqft_living"

The calculate the R^2. Take a screenshot of your code and the value of the R^2.



RUBRIC

Question 7) Was a linear regression model fit and a R^2 of approximately 0.657695 calculated?

- 0 pts
  No
- 1 pt
  Partially complete
- 2 pts
  Yes

PROMPT

Question 8) Create a pipeline object that scales the data performs a polynomial transform and fits a linear regression model. Fit the object using the features in the question above, then fit the model and calculate the R^2. Take a screenshot of your code and the R^2.

There are some hints in the notebook

```
In [89]: X = df[features]
         y = df.price
         pipe = Pipeline(Input)
         pipe.fit(X, y)
         pipe.score(X, y)

Out[89]: 0.7473257069312564
```

RUBRIC

Question 8) Was an R^2 of approximately 0.75133 calculated?

- 0 pts
  No
- 1 pt
  Partially complete
- 2 pts
  Yes

PROMPT

Question 9) Create and fit a Ridge regression object using the training data, setting the regularization parameter to 0.1 and calculate the R^2 using the test data. Take a screenshot for your code and the R^2

```
from sklearn.linear_model import Ridge
```

```
rm = Ridge(alpha=0.1)
rm.fit(x_train, y_train)
```

RUBRIC

Question 9) Was the R^2 of approximately 0.647?

- 0 pts
  No
- 1 pt
  Partially complete

```
rm.score(x_test, y_test)
```

```
0.6478759163939112
```

.

2 pts
Yes

PROMPT

Question 10) Perform a second order polynomial transform on both the training data and testing data. Create and fit a Ridge regression object using the training data, setting the regularisation parameter to 0.1. Calculate the R^2 utilising the test data provided. Take a screenshot of your code and the R^2.

.

```
pr = PolynomialFeatures(degree = 2)
X_train_pr = pr.fit_transform(x_train)
X_test_pr = pr.fit_transform(x_test)

rr = Ridge(alpha = 0.1)
rr.fit(X_train_pr, y_train)
rr.score(X_test_pr, y_test)
```

```
0.7002744255607272
```

.

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Question 10) Was the R^2 of approximately 0.7?

- 0 pts
  No
- 1 pt
  Yes

PROMPT

Upload your notebook.

..

```
In [15]: df.dtypes

Out[15]: id                 int64
         date              object
         price            float64
         bedrooms           int64
         bathrooms        float64
         sqft_living        int64
         sqft_lot           int64
         floors           float64
         waterfront         int64
         view               int64
         condition          int64
         grade              int64
         sqft_above         int64
         sqft_basement      int64
         yr_built           int64
         yr_renovated       int64
         zipcode            int64
         lat              float64
         long             float64
         sqft_living15      int64
         sqft_lot15         int64
         dtype: object
```

.

RUBRIC

Did the user share their notebook?

- 0 pts
  No
- 3 pts
  Yes

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RR

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