Jupyter: Intro to Data Science - Assignment 5, Part 2 Linear Regression Practice

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Assignment 5, Part 2: Linear Regression Practice

Assignment 5 builds on the StreetEasy dataset we discussed in class, and looks at a few other relationships in the data.

In [ ]:
```python
import pandas as pd
import matplotlib.pyplot as plt
import statsmodels.api as sm
%matplotlib inline
```

In [ ]:
```python
se_df = pd.read_csv('https://grantmlong.com/data/streeteasy_rents_june2016.csv')
se_df.head()
```

In [ ]:
```python
# your code for scatterplots here
```

--- your written response here ---

In [ ]:
```python
# your code for scatterplots here
```

Question 1: Exploring Bedrooms and Bathrooms

- Create two separate scatterplots showing the relations between rents and bedrooms, and rents and bathrooms.
- In two to three sentences, explain any problem this might pose for predicting rents.

In [ ]:
```python
# Add a constant to our existing dataframe for modeling purposes
se_df = sm.add_constant(se_df)

est = sm.OLS(se_df['rent'],
              se_df[['XXXX', 'XXXX', 'XXXX', 'XXXX']].fit()
)
print(XXXX)
```
Question 3: Interpreting Results

- Write three sentences identifying the coefficient for each independent variable and explaining how each of the three predictors relates to rent.
- Briefly explain whether you believe each of these predictors are statistically significant and why.

--- your written response here ---

Question 4: Identifying Pitfalls

- Create a scatterplot of the values for bedrooms with the values for bathrooms.
- Identify which of the required assumptions for linear regression that we discussed in class is challenged by this scatterplot.

In [ ]: # your code for scatterplots here

--- your written response here ---

Question 5: Overall Fit

- From the regression output produced in question 2, which of the metrics provided in the output illustrates the overall fit of regression?
- What is the value of the metric?
- Briefly explain whether you think this regression a formulated above is a good predictor of rent.

--- your written response here ---

--- your written response here ---

--- your written response here ---