Predictive_work_project_regression

March 28, 2021

```python
[40]: import pandas as pd
      import numpy as np
      import matplotlib.pyplot as plt
      from sklearn.linear_model import LinearRegression
      import seaborn as sbs
      print("Ready")
      #importing necessary libraries
      #printing to check for errors
```

    Ready

```python
[5]: House_Sales=pd.read_csv(r'C:
     ↪\Users\nmill\OneDrive\Documents\Python_work\house_sales_project.csv')

     House_Sales.head()
     print("Ready")

     #import data and give it a handle
     #inspect imported data
     #print to check for errors
```

    Ready

```python
[6]: Adprice = House_Sales.AdjSalePrice
     SqFt = House_Sales.SqFtLot
     SqFtLiv = House_Sales.SqFtTotLiving
     BathR = House_Sales.Bathrooms
     Bedr = House_Sales.Bedrooms
     BLD_Grad = House_Sales.BldgGrade
     YrB = House_Sales.YrBuilt
     YrReno = House_Sales.YrRenovated
     TnOise = House_Sales.TrafficNoise
     LvAl = House_Sales.LandVal
     ImpVal = House_Sales.ImpsVal
     Zip = House_Sales.ZipCode

     #establishing handles for features
```

```
[9]: x = np.array([SqFtLiv]).reshape(-1,1)
     y = np.array([Adprice]).reshape(-1,1)

     model = LinearRegression().fit(x,y)
     r_sq = model.score(x,y)

     #shapping arrays to prep for regression and r^2
```

```
[10]: print('coefficient of determination:', r_sq)

      #r_sq suggests 50% of Adprice can be explained by SqFtLiv
```

coefficient of determination: 0.4832798342743741

```
[56]: xNew = [[2500]]
      yNew = model.predict(xNew)
      monetary_value = float(yNew)
      currency = "${:,.2f}".format(monetary_value)
      print(currency)
      #Shows predicted price based on liveable sqft estimation above
```

$688,326.79

```
[46]: sns.regplot(SqFtLiv, Adprice, data=House_Sales)
```

```
[46]: <matplotlib.axes._subplots.AxesSubplot at 0x1e7cc087e48>
```