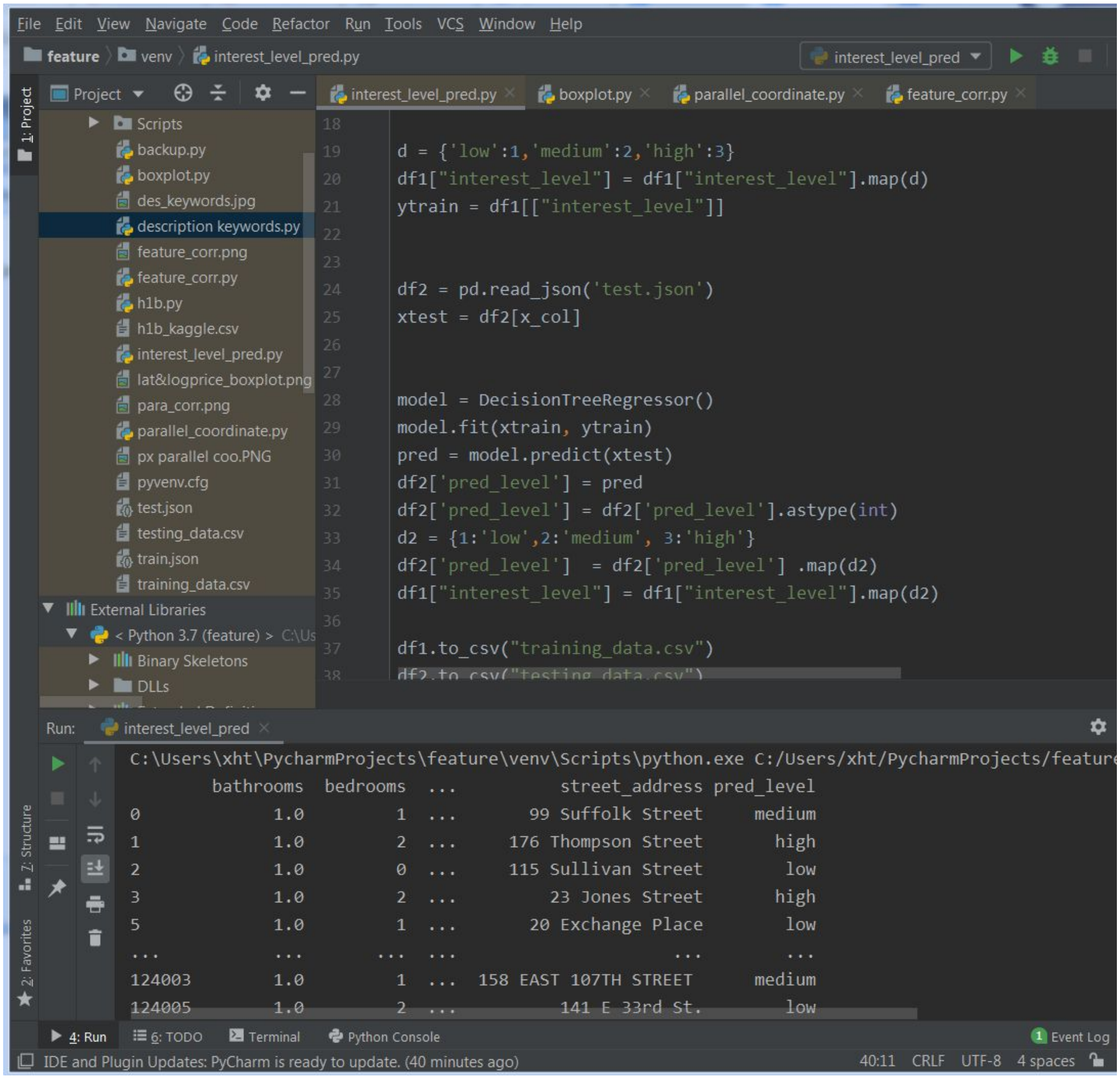
- Developer: Sophia Xiao @ 2021/1/2
- Dataset downloaded from Tianchi https://tianchi.aliyun.com/dataset/dataDetail?dataId=83994
- Goal: predicting the interest level (low-med-high) of testing file by analyzing features in training file
- Website cited:
  - https://stackoverflow.com/questions/51452031/how-to-use-the-test-data-against-the-trained-model
  - https://stackoverflow.com/questions/45681387/predict-test-data-using-model-based-on-training-data-set
  - https://www.kaggle.com/c/titanic/discussion/54683
- Steps:
  - Pull and see useful features that can help in prediction: in this case, I only handle the numeric features
  - I need to predict categorical variable (low-med-high) in testing file, so when I analyse the training file, I need to convert the responsible variable to numbers in training file (low - 1 , med - 2, high -3)
  - Using module in python package installed (I choose decision tree here, but I yet to know the difference between so many prediction tool such as something like "forest tree(?)")
  - Convert the response variable 1, 2, 3 back to interest level
- Questions I had:
  - Can features other than numerical also be mixed in the prediction process?

- Is there a way to convert the response variable other than I create a dictionary?



```python

d = {'low':1,'medium':2,'high':3}
df1["interest_level"] = df1["interest_level"].map(d)
ytrain = df1[["interest_level"]]


df2 = pd.read_json('test.json')
xtest = df2[x_col]


model = DecisionTreeRegressor()
model.fit(xtrain, ytrain)
pred = model.predict(xtest)
df2['pred_level'] = pred
df2['pred_level'] = df2['pred_level'].astype(int)
d2 = {1:'low',2:'medium', 3:'high'}
df2['pred_level']  = df2['pred_level'] .map(d2)
df1["interest_level"] = df1["interest_level"].map(d2)

df1.to_csv("training_data.csv")
df2.to_csv("testing_data.csv")
```

```
C:\Users\xht\PycharmProjects\feature\venv\Scripts\python.exe C:/Users/xht/PycharmProjects/feature
        bathrooms  bedrooms  ...         street_address pred_level
0             1.0         1  ...       99 Suffolk Street     medium
1             1.0         2  ...     176 Thompson Street       high
2             1.0         0  ...     115 Sullivan Street        low
3             1.0         2  ...         23 Jones Street       high
5             1.0         1  ...       20 Exchange Place        low
...           ...       ...  ...                     ...        ...
124003        1.0         1  ...    158 EAST 107TH STREET     medium
124005        1.0         2  ...           141 E 33rd St.        low
```