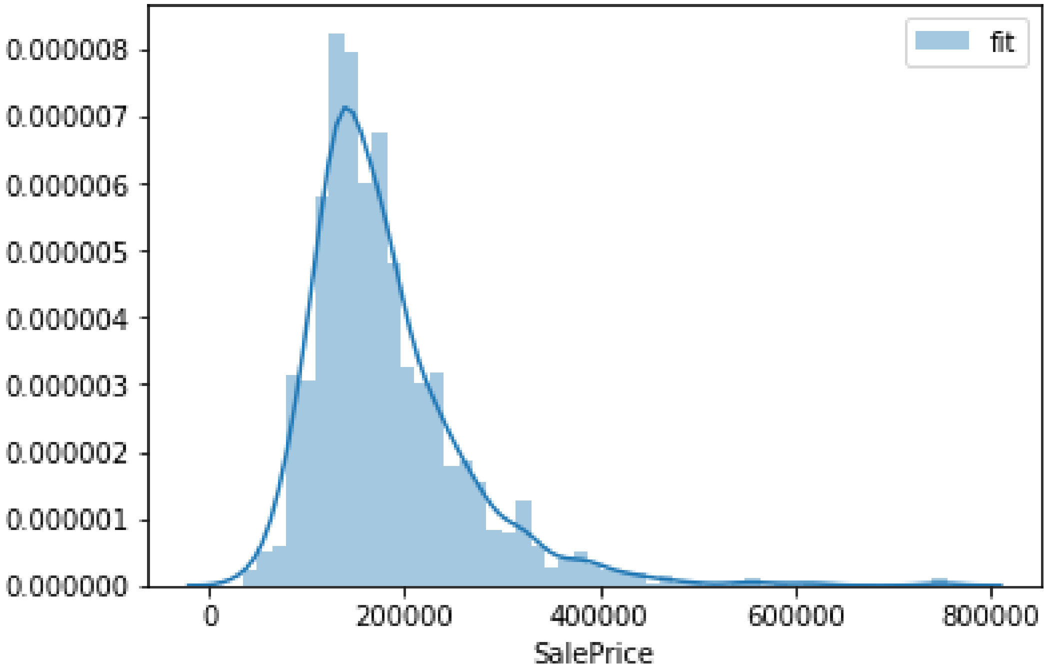
1 進階房價預測

```
[程式]: import matplotlib.pyplot as plt

        import numpy as np

        import pandas as pd



        from scipy.stats import skew

        from scipy.special import boxcox1p

        from sklearn.feature_selection import RFECV

        from sklearn.linear_model import Lasso

        from sklearn.model_selection import cross_val_score



        train = pd.read_csv('train.csv')

        test = pd.read_csv('test.csv')
```

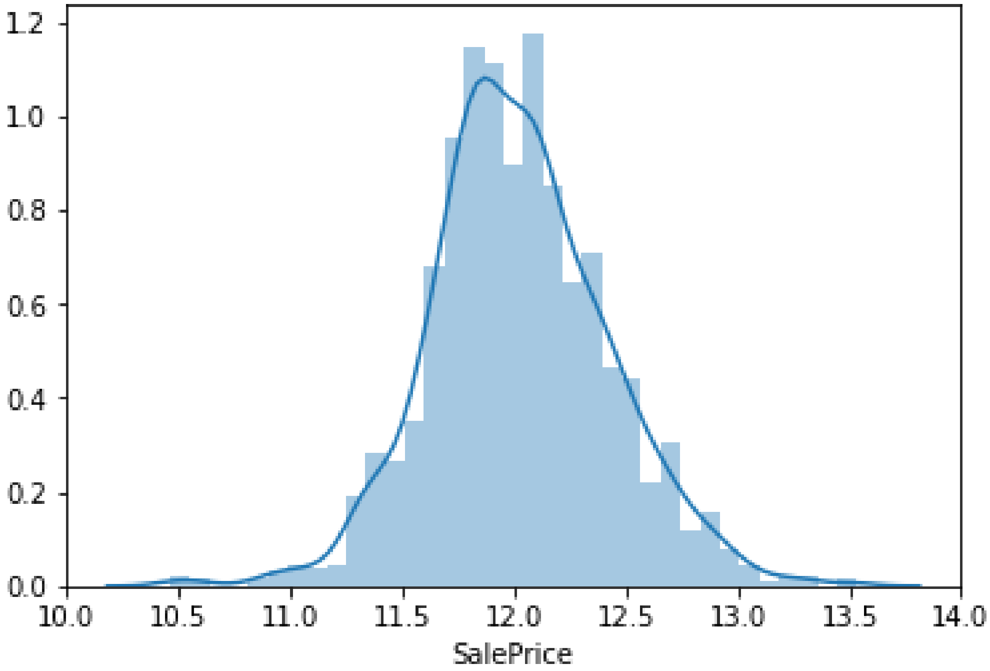
```
[程式]: import seaborn as sns
        from scipy.stats import norm
        import matplotlib.pyplot as plt
        %matplotlib inline
        sns.distplot(train['SalePrice'])
        plt.legend(["fit", "dist"])
```

```
[輸出]: <matplotlib.legend.Legend at 0x11459e908>
```



```
[程式]: sns.distplot(np.log1p(train["SalePrice"]))
```

```
[輸出]: <matplotlib.axes._subplots.AxesSubplot at 0x11459e8d0>
```



[程式]:

```
all_data = pd.concat((train.loc[:,'MSSubClass':'SaleCondition'],
                      test.loc[:,'MSSubClass':'SaleCondition']))

train["SalePrice"] = np.log1p(train["SalePrice"])

numeric_feats = all_data.dtypes[all_data.dtypes != "object"].drop(["MSSubClass"]).index

skewed_feats = train[numeric_feats].apply(lambda x: skew(x.dropna())) #compute skewness
skewed_feats = skewed_feats[skewed_feats > 0.65]
skewed_feats = skewed_feats.index

all_data[skewed_feats] = boxcox1p(all_data[skewed_feats], 0.15)


all_data = pd.get_dummies(all_data)
all_data = pd.get_dummies(all_data,  columns=["MSSubClass"])

all_data = all_data.fillna(all_data.mean())
#from sklearn.experimental import enable_iterative_imputer
#from sklearn.impute import IterativeImputer
#imp = IterativeImputer()
#all_data = imp.fit_transform(all_data)


X_train = all_data[:train.shape[0]]
```

```
X_test = all_data[train.shape[0]:]
y = train.SalePrice



#### models selection
lasso = Lasso(alpha=0.0004)
model = lasso


### prediction
model.fit(X_train, y)


preds = np.expm1(model.predict(X_test))
solution = pd.DataFrame({"id":test.Id, "SalePrice":preds})
solution.to_csv("full_features_lasso_new.csv", index = False)
```