# 3_Credit_Risk_Prediction

October 23, 2022

### 0.1 # Predicting Loan status for new Records

FSDS Machine Learning Workshop , October 16, 2022

Description: Predicting the loan status on new records.

#### 0.1.1 Pre requisites:

1. Make sure the user has all the data science packages installed.

Input File: - rf_model.pkl

## 1 1. Tools and Packages

[1]:
```
import numpy as np
import pandas as pd
import pickle
import os
from sklearn import metrics

import warnings
warnings.filterwarnings("ignore")
```

[2]:
```
# load the csv
df = pd.read_csv("sample.csv")
```

[3]:
```
# displaying the contents of the dataframe
df
```

[3]:
```
   loan_percent_income loan_grade  person_income person_home_ownership  \
0                 0.21          C          53000               MORTGAGE
1                 0.27          C          52800                   RENT
2                 0.21          C          19200                   RENT
3                 0.23          A          61000                   RENT
4                 0.19          C          46000                   RENT

   loan_int_rate
0            NaN
1          14.27
```

```
2          14.35
3           6.99
4          14.27
```

### 1.1 2. Transformation

[5]:
```
# converting the string input to the numerical as we have done in the EDA␣
 ↪notebook
df = df.replace(to_replace={'person_home_ownership': {'RENT': 0,
                                                      'MORTGAGE': 1,
                                                      'OWN': 2,
                                                      'OTHER': 3},
                            'loan_grade': {'A': 0, 'B': 1, 'C': 2, 'D': 3, 'E':␣
 ↪4, 'F': 5, 'G': 6}})
```

[4]:
```
df['loan_int_rate'] = df['loan_int_rate'].fillna(11.07)
```

### 1.2 3. Loading the trained model

[4]:
```
# TASK: loading the pickled model
# refer : https://wiki.python.org/moin/UsingPickle
--
```

[4]:
```
RandomForestClassifier(max_depth=4, n_estimators=1000, random_state=7)
```

[7]:
```
# TASK : predict the loan status for the new data
# Hint please refer the 2_model_builing notebook
temp_var = --
temp_var
```

[7]:
```
array([0, 0, 1, 0, 0])
```

[8]:
```
# assigning the predicted loan status for final view
df['loan_status_predicted'] = temp_var
```

[9]:
```
df
```

[9]:
```
   loan_percent_income  loan_grade  person_income  person_home_ownership  \
0                 0.21           2          53000                      1
1                 0.27           2          52800                      0
2                 0.21           2          19200                      0
3                 0.23           0          61000                      0
4                 0.19           2          46000                      0

   loan_int_rate  loan_status_predicted
0          11.07                      0
1          14.27                      0
```

```
2          14.35                   1
3           6.99                   0
4          14.27                   0
```

### 1.2.1 End of the Notebook