Exercise: Churn Prediction

This lesson gives an exercise on churn prediction using logistic regression in python.

Churn prediction

In this lesson, you are required to make a predictive model using logistic regression that predicts churn. The dataset given to you is from a telecom operator for August and September 2015. It has the following variables:

```
# Telecom Churn
# network_age : The time passed since the subscriber started using the services of the carrie
# Aggregate_Total_Rev : The overall monthly revenue earned by the carrier in the months Augus
# Aggregate_SMS_Rev : The revenue earned through the SMS service used by the subscriber.
# Aggregate_Data_Rev : The revenue earned through the Data service used by the subscriber
# Aggregate_Data_Vol : The volume of the data service used by the subscriber.
# Aggregate_Calls : The number of calls made by the subscriber
# Aggregate_ONNET_REV : The revenue earned by the calls etc. made to the on-network (on the s
# Aggregate_OFFNET_REV : The revenue earned by the calls etc. made to the off-network (not th
# Aggregate_complaint_count :  The number of complaints made by the subscribers.
# aug_user_type : This detail helps in knowing if the user is subscribed to a 2G or 3G servic
# sep_user_type : This detail helps in knowing if the user is subscribed to a 2G or 3G servic
# Class : Churned/Active (1/0)
```

You will be writing the function `churn_prediction_acc`. You will be given four dataframes:

- `X`: It has all the inputs that you will need to fit your model.
- `Y`: It has the target variable, i.e., the `Class` for every input in `X`.
- `test_inputs`: Input dataframe on which to make predictions.
- `test_outputs`: The target variable, i.e., the `Class` for every input in `test_inputs`.

Steps you are required to do are:

1. Fit a logistic regression model using `X` and `Y`.

2. Obtain predictions on `test_inputs`.

3. Find the accuracy of the model on the predictions obtained in step 2 and return the accuracy.

Prediction challenge

```python
from sklearn.linear_model import LogisticRegression
from sklearn.metrics import accuracy_score

def churn_predict_acc(X,Y,test_inputs,test_outputs):
    # Write code here

    pass
```

If you feel stuck, feel free to check out the solution review in the next lesson. Good luck!