Session 7: The Python Sabre

Goal

Create an API capable to search flights on Sabre (one the largest Global Distribution System for travelling)
https://en.wikipedia.org/wiki/Global_distribution_system

Part I: Get your APIKey

Follow this link:
https://developer.sabre.com/apps/mykeys

You should get the following information:
Client ID:
V1:XXXXXXX:DEVCENTER:EXT
Client Secret:
XXXXXXXX

Part II: Get familiar with the documentation

https://developer.sabre.com/docs/read/REST_APIs

Part III: Build a token from your client id and client secret

The website is giving you the different steps to build a token.

Base64 encode your credentials

Use a base64 encoding tool to encode your Client ID from step 1. Then encode your password. Append your new encoded Client ID with your encoded password and separate with a colon to make a concatenated string. The format looks like this:
`yourclientid:yourclientsecret`

An example of a concatenated, encoded Client ID and password is shown below:
`eW91cmNsaWVudGlk:eW91cmNsaWVudHNlY3JldA==`

Use a base64 encoding tool again to encode your concatenated string into a single base64 encoded string. An example of a single base64 encoded string is shown below:
ZVc5MWNtTnNhV1Z1ZEdsazplVzkxY21Oc2FXVnVkSE5sWTNKbGRBPT0=
// STEP 3 //

If you are not familiar with some commands:

Here is a code which will be able to help you:

```
import requests
import base64

client_id=b'V1:XXXXXXXX:DEVCENTER:EXT'
client_secret=b'XXXXXXXXX'

client_id64=base64.b64encode(client_id)
client_secret64=base64.b64encode(client_secret)

credentials_part = client_id64.decode("utf-8")
+':'+client_secret64.decode("utf-8")
credentials = base64.b64encode(credentials_part.encode("utf-8"))

url = 'https://api.test.sabre.com/v2/auth/token'
headers = {'Authorization': 'Basic ' + credentials.decode("utf-
8")}
params = {'grant_type': 'client_credentials'}

r = requests.post(url, headers=headers, data=params)
assert r.status_code is 200, 'Oops...'
token = r.json()

Please use the following URL
'https://api.test.sabre.com/v2/auth/token'
```

You will get the token you need to use the REST API.

Part IV: Build the function taking returning the flights for 2 airports at a specific date.

Based on the documentation, you will certainly need to use the following function.
https://developer.sabre.com/docs/rest_apis/air/search/instaflights_search

Example: when you will use the following function:

```
fares = sabre.api.v1.shop.flights(     origin='LAX',
destination='JFK',      departuredate='2017-08-13',
returndate='2017-08-15',     limit=1 )
```

fares will contain the following JSON messages:


```
{u'OriginLocation': u'LAX', u'Links': [{u'href':
u'https://api.test.sabre.com/v1/shop/flights?origin=LAX&returndat
e=2017-08-15&destination=JFK&limit=1&departuredate=2017-08-13',
u'rel': u'self'}, {u'href':
u'https://api.test.sabre.com/v1/shop/flights?origin=<origin>&dest
ination=<destination>&departuredate=<departuredate>&returndate=<r
eturndate>&offset=<offset>&limit=<limit>&sortby=<sortby>&order=<o
rder>&sortby2=<sortby2>&order2=<order2>&minfare=<minfare>&maxfare
=<maxfare>&includedcarriers=<includedcarriers>&excludedcarriers=<
excludedcarriers>&outboundflightstops=<outboundflightstops>&inbou
ndflightstops=<inboundflightstops>&outboundstopduration=<outbound
stopduration>&inboundstopduration=<inboundstopduration>&outboundd
eparturewindow=<outbounddeparturewindow>&outboundarrivalwindow=<o
utboundarrivalwindow>&inbounddeparturewindow=<inbounddeparturewin
dow>&inboundarrivalwindow=<inboundarrivalwindow>&onlineitinerarie
sonly=<onlineitinerariesonly>&eticketsonly=<eticketsonly>&include
dconnectpoints=<includedconnectpoints>&excludedconnectpoints=<exc
ludedconnectpoints>&pointofsalecountry=<pointofsalecountry>&passe
ngercount=<passengercount>&enabletagging=<enabletagging>',
u'rel': u'linkTemplate'}], u'DestinationLocation': u'JFK',
u'DepartureDateTime': u'2017-08-13', u'ReturnD…
```


If you need to get inspired by some examples:
https://github.com/jaybutera/PySabre/tree/master/src

You will need to return the price, the legs, the departure time, the arrival time, the duration of the flight.