



THE TASTE OF HOME AWAY FROM HOME

CAPSTONE PROJECT
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INTRODUCTION

This report is for the final course of the Data Science Specialization by IBM on Coursera platform. For this project I am proposing a hypothetical situation of opening a Filipino restaurant in Bucharest.

Context

- Bucharest is becoming more and more a target for travelers with over 2 mil tourists in 2019.
- With the increase in tourism in Asia, Asian food is becoming more and more popular as cuisine in Europe.
- Last but not least, the number of immigrants from Philippines in Romania (especially Bucharest) is increasing each year.

Business Problem

A young cook from Philippine came to Bucharest and he would like to open a restaurant with traditional Filipino cuisine and to host traditional events.

I will try to help him using data science and machine learning algorithms in order to choose optimum location for the restaurant.

Data

Following data will be analyzed:

- Number of immigrants to Romania (2009 – 2018)
- Data related to immigration rate from Philippine to Romania (2009 – 2019) which will be used as basis for forecasting
- Bucharest's Districts repartition
- Distribution of Asian Restaurants in Bucharest and clustering in order to identify best location

DATA DESCRIPTION

Type of data

Following data will be analyzed:

- Number of immigrants to Romania (2009 – 2018)
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- Bucharest's Districts repartition
- Distribution of Asian Restaurants in Bucharest and clustering in order to identify best location

Data sources

https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Migration_and_migrant_population_statistics

http://www.searchromania.net/harta_harti/bucuresti/sector_1/

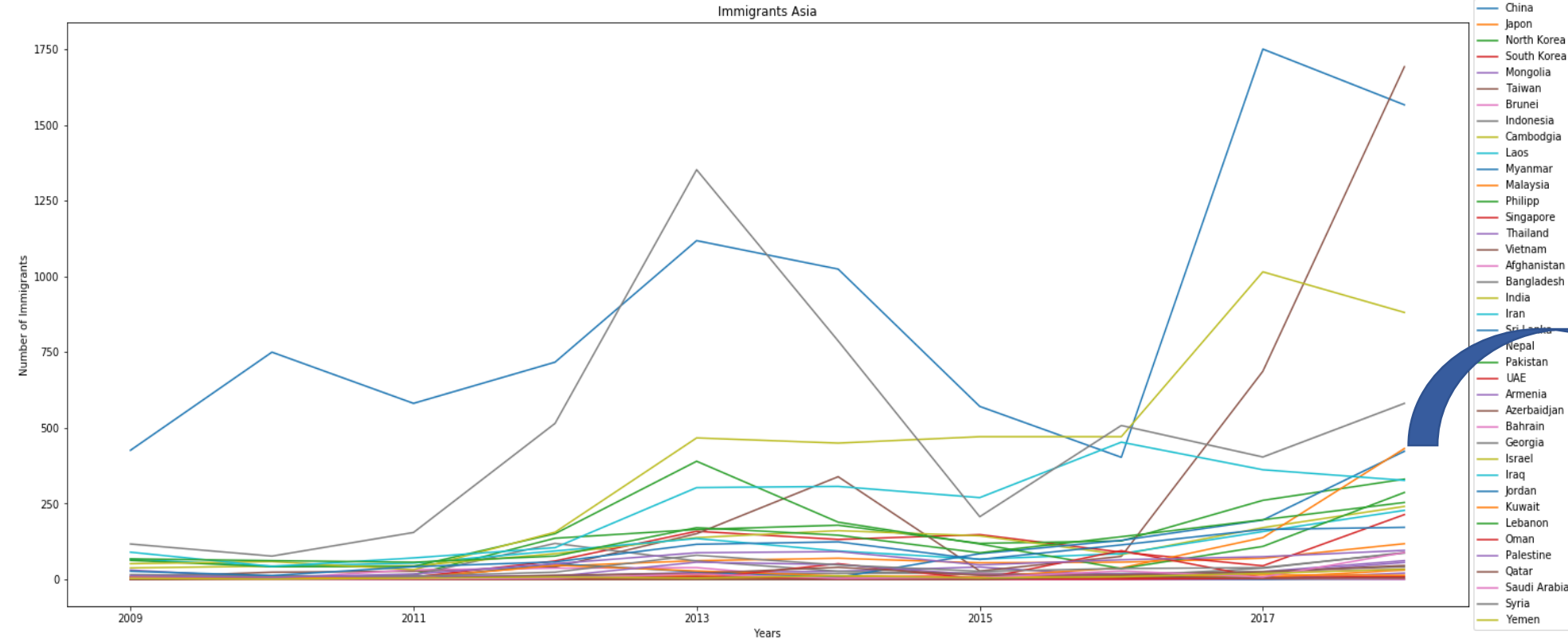
<https://foursquare.com/developers/apps/DIN34HGUXANZKGL4DQVENYONQ4ZNEIH5CSWNFMMSDV4FULKFT/settings>

Data cleaning

- ✓ Duplicate data were dropped.
- ✓ Non related types of restaurants were removed

METHODOLOGY

Asian immigration in Romania



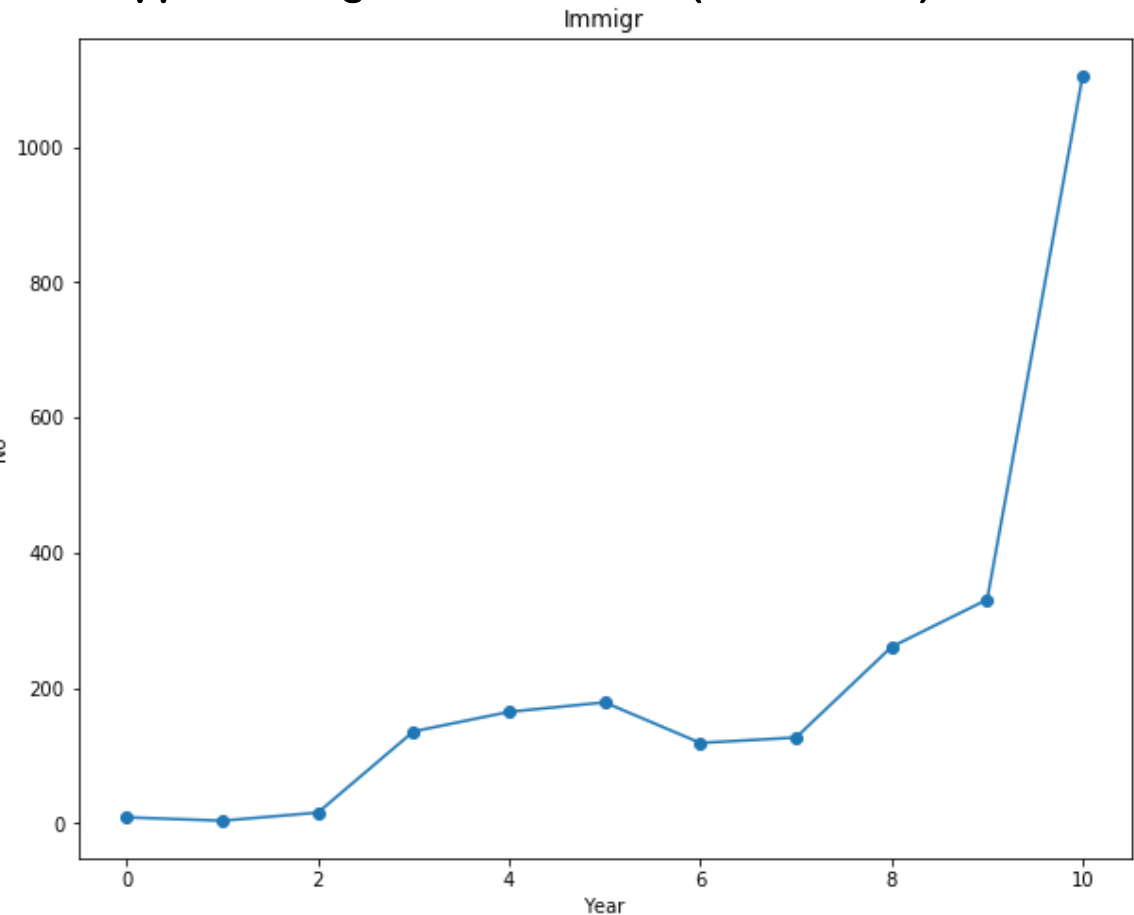
Philippine holds the
6th place

Highest immigration rate is from China, Vietnam, Israel, Syria, Iraq, Philippine.

- immigration from China, Vietnam and Philippine is work force related
- immigration from Israel, Syria and Iraq is mostly due to socio economic and political reasons

METHODOLOGY

Philippine immigration in Romania (2009 – 2019)



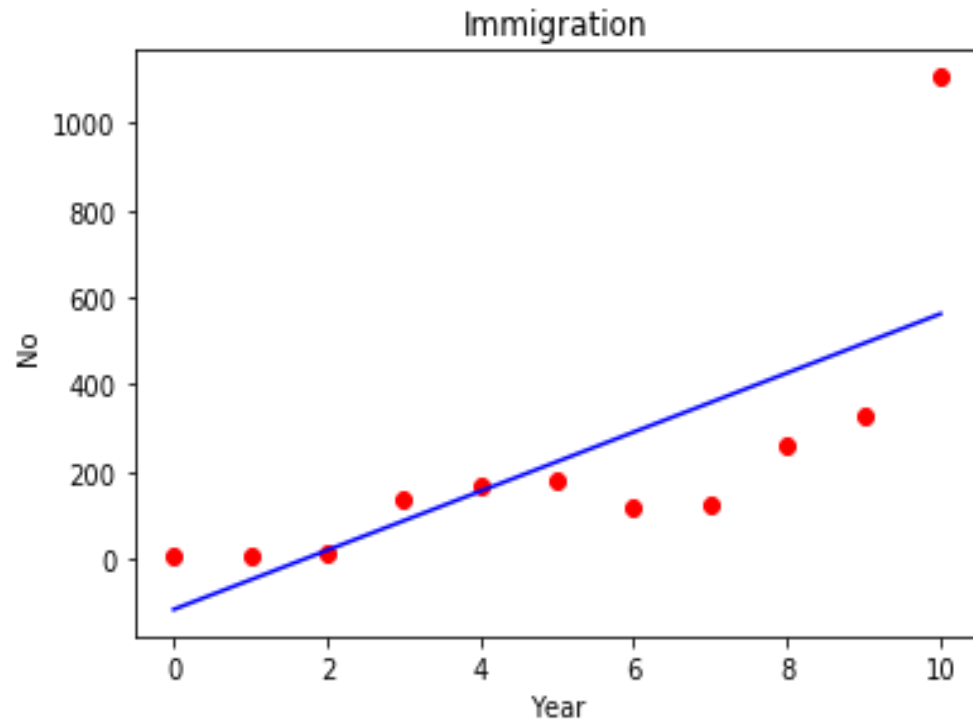
Year	No
2009	9
2010	4
2011	16
2012	136
2013	165
2014	179
2015	119
2016	127
2017	261
2018	331
2019	1106

The number of Philippine immigrants to Romania increased, in 2019, 1106 work permits were approved for Philippine workers. Due to lack of work force in RO, the number of immigrants is expected to increase.

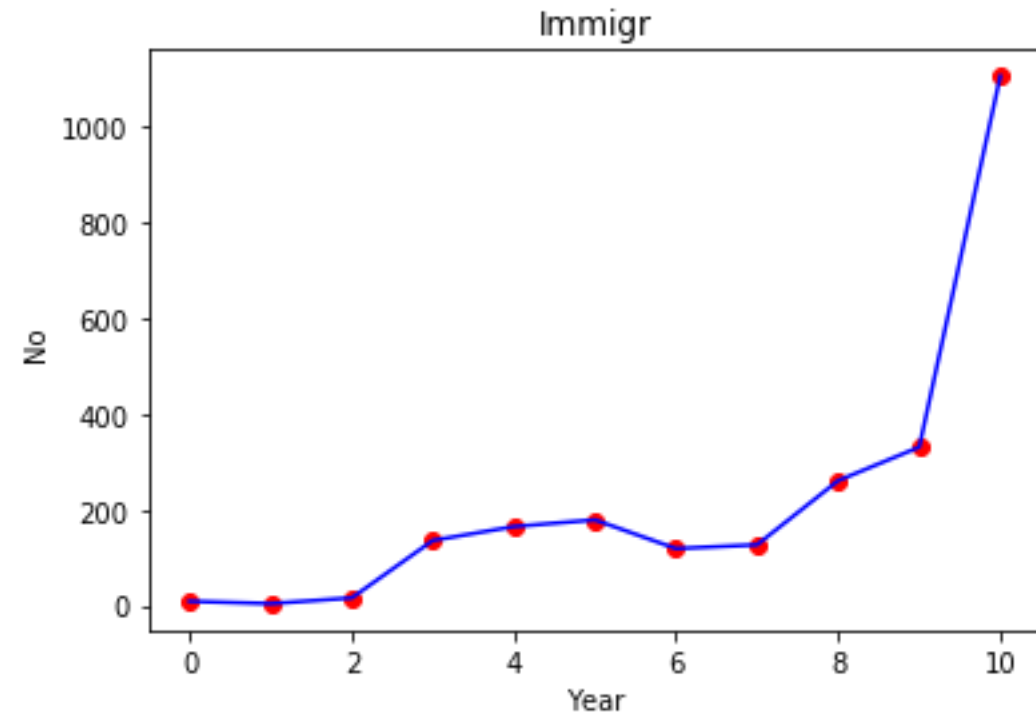
METHODOLOGY

Regression models

Linear regression



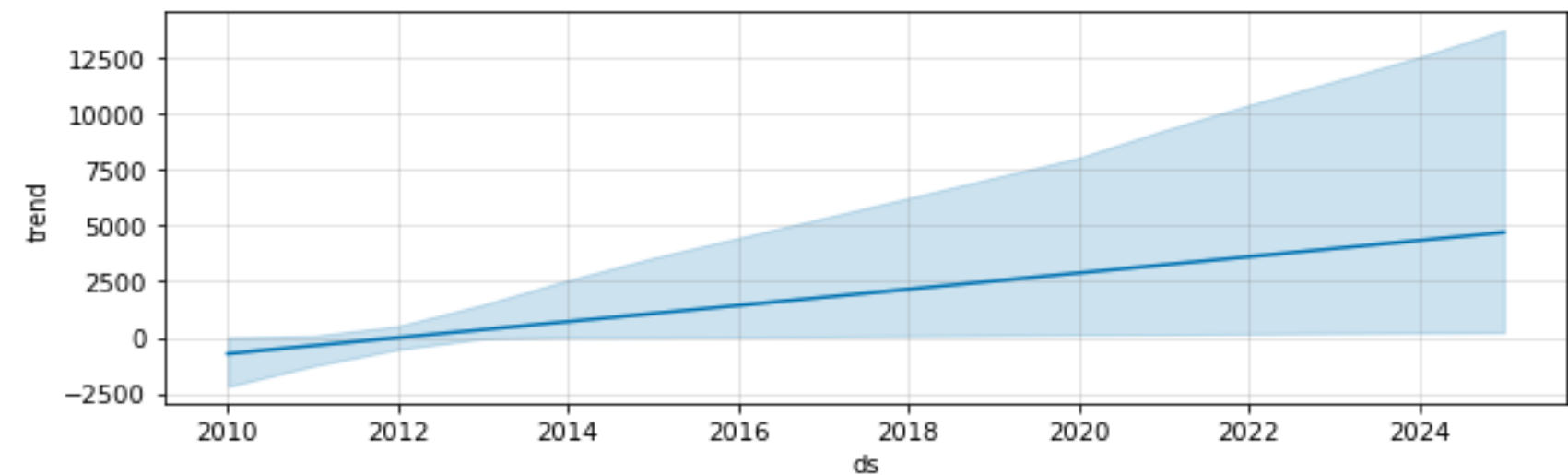
Polynomial regression



Polynomial regression (10th order) was chosen for forecasting .

METHODOLOGY

Forecasting 5 years for Philippine immigration in RO

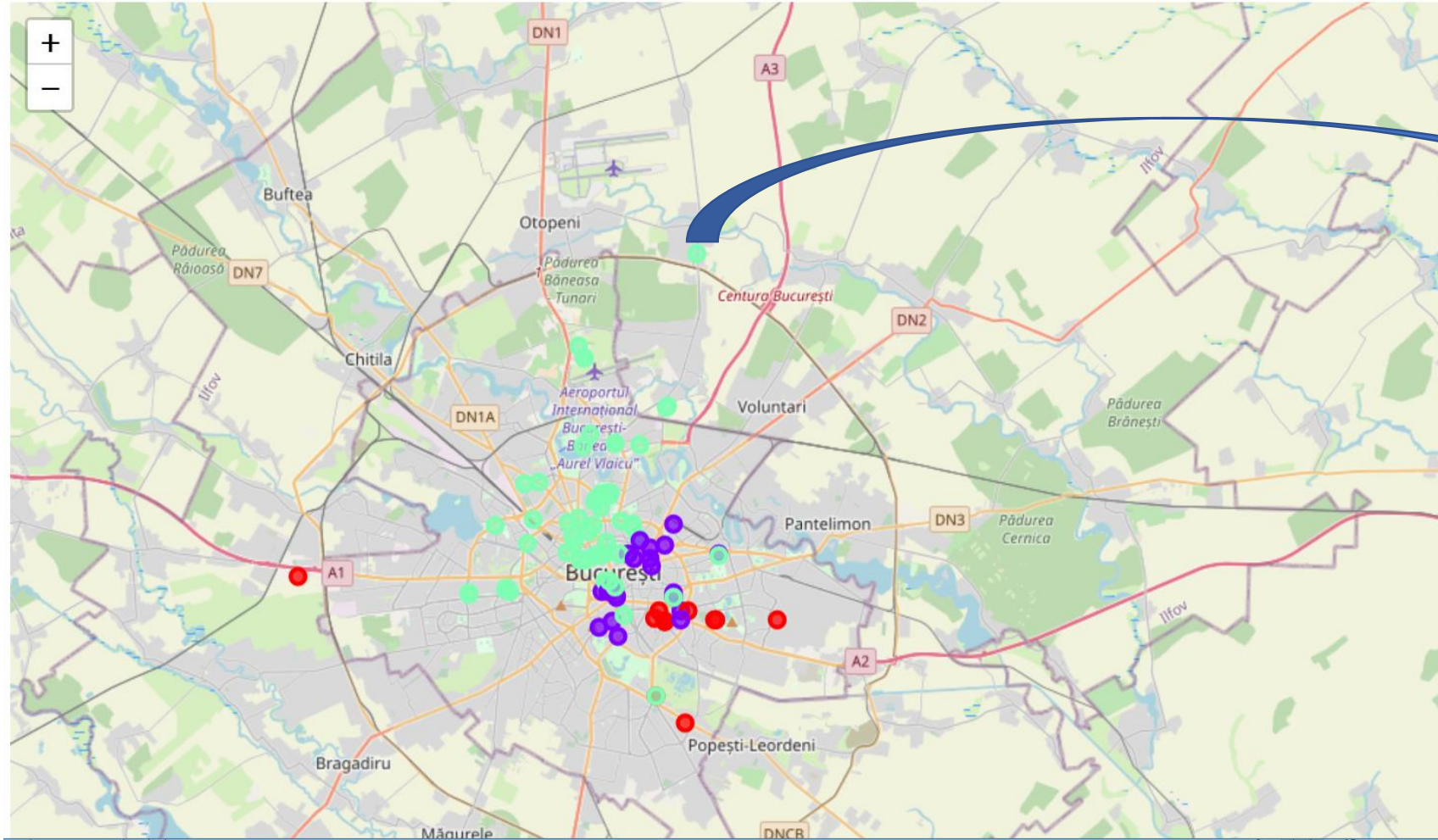


ds	yhat	yhat_lower	yhat_upper
2020-12-31	882.036986	689.755585	1062.329670
2021-12-31	1105.271906	905.544382	1288.131548
2022-12-31	1391.343738	1200.492714	1579.094413
2023-12-31	1358.169397	1174.224716	1552.529075
2024-12-31	2139.761373	1945.239566	2338.995757

The number of immigrants is expected to exponentially increase in the next 5 years.

METHODOLOGY

Kmeans clustering of Asian restaurants in Bucharest



The only Filipino restaurant is located in Bucharest suburbia

RESULTS

- ✓ Asian and especially Filipino immigration in Romania is increasing and will continue to increase in the coming years.
- ✓ Bucharest has a rather low distribution of Asian restaurant and only 1 Filipino restaurant situated in Bucharest suburbia.
- ✓ Most of Asian restaurants are situated in the first district which is well known as the business core of Bucharest, most of the offices being located here.
- ✓ There is a very low number of Asian restaurants (only Chinese restaurants) in the 3rd district, district where Old Town is located, so not too much variety for the tourists visiting Bucharest.

CONCLUSION



**GO for setting up a
Filipino Restaurant in
Bucharest Old Town**