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I. Preface

**In Dutch:

Dit bestand (notebook) en bijbehorende bijdragen is het resultaat van mijn laatste IBM Course voor Datascience, in dit notebook mag ik mijn eigen probleemdefinitie schrijven en hier tevens een oplossing voor bieden, het is echter noodzakelijk om bij het verzamelen van de data gebruik te maken van de Foursquare API, de API kan gebruikt worden voor het ophalen van interesses en beoordelingen van bijvoorbeeld restaurants of de lokale sportschool binnen een eigen gedefinieerde radius of het ophalen van gebruikersdata van Foursquare profielen, het uiteindelijke doel van de course is de mogelijkheid om problemen te beantwoorden van stakeholders met vraagstellingen als:

 Als ik zou verhuizen naar een plaats dichter bij mijn werk, naar welke wijk zou ik dan het beste naar toe kunnen verhuizen op basis van mijn intresses en behoeften?

* The rest of the document will be in English as this is the language that will help me pass the assignment, please note that my English language and grammar usage isn't the best, so please don't consider this as a professional document.

2. Introduction

In this chapter I will give you a description of the problem and a discussion of the background:

2.1. Background

This document will be the final report and end result of the capstone project in the IBM Data Science course. In this project I will use the data Foursquare API and Datascience practices to explore neighborhoods in Middelburg as this is my favorite city in Zeeland, The Netherlands.

2.2. Problem

I will explore the neighborhoods of Middelburg using the available data to solve and answer the following question:

- What neighborhood is the best appropriate place to open a new restaurant in Middelburg based on the already existing restaurants in the neighborhood?

2.3. Why Middelburg?

Middelburg is my favorite city because it's considered as a student's city in the province of Zeeland and I'm a student myself, the city has lots of bars and the people are rather young compared to neighboring cities and towns/villages, and I would like to live in Middelburg one day.

Also restaurants in The Netherlands have a hard time lately coping with government tax and salary of the workers and even finding the right amount of people willing to help running the business, so this tool would help owners getting the needed insights to start as efficiently and effectively as possible by getting better revenue streams based on the already available data.

2.4. Target audience and stakeholders

The target audience (and stakeholder) will be restaurant owners interested in opening a new restaurant in Middelburg or existing restaurants who are considering moving to a different location inside the City of Middelburg.

Also the municipality of Middelburg could play a role as a permit mediator to allow or dismiss a permit to a restaurant owner based on the needs of that particular neighborhood when issuing a new permit to deploy a restaurant.

3. Data

In this chapter I will give you a description if the data and how it will be used to solve the problem:

3.1. Available Data Sources

The following types of data will be used*:

Source	Link	Problem solver
Wikipedia	https://nl.wikipedia.org/wiki	List of all neighborhoods in Middelburg according to
	/Wijken_en_buurten_in_Mid	CBS (Central Bureau of Statistics)
	delburg	
Maps.ie	https://www.maps.ie/coordi	Finding the right coordinates of the neighborhoods
	nates.html	in Middelburg
Foursquare	https://developer.foursquar	Scraping and gathering relevant information such as
API	e.com/	neighboring restaurants and it's menu/type of food
		based on its coordinates and radius

^{*} It would be more accurate to get open data from the municipality Middelburg as the coordinates would be a lot more correct, however this would take a lot more time as I have to file a report and wait a couple of months.

3.2. Foursquare API and data gathering



Using the Foursquare API and the coordinates of the Neighborhoods inside Middelburg, I will be extracting the top 10 most common venues already available in the neighborhoods of Middelburg inside a 800 meters radius, from here we could calculate if the restaurant is really needed in the neighborhood, maybe there are already five Italian restaurant's so another Italian restaurant wouldn't necessarily be needed.

If a restaurant type such as sushi isn't available in the neighborhood, then the recommendation would be to place a new sushi restaurant there, as there will be more need and interests from the community or putting it in another direction there will be no direct competition.