Predicting the best neighborhoods for opening a new restaurant in Middelburg

Predicting the best neighborhoods for opening a new restaurant in Middelburg

- ▶ Collecting localizations all neighborhoods in Middelburg
- ▶ Collecting the top 10 venues of each neighborhood
- ▶ Using k-means clustering on venues data of each neighborhood
- ▶ Combine or separate neighborhoods using k-means clustering
- ▶ Comparing neighborhoods

Data acquisition

▶ Dataset with coordinates of each neighborhood (11 neighborhoods)

▶ Collected dataset with 76 unique venues in 11 neighborhoods and 183 items of raw data

▶ Data frame with the top 10 venues of each neighborhood

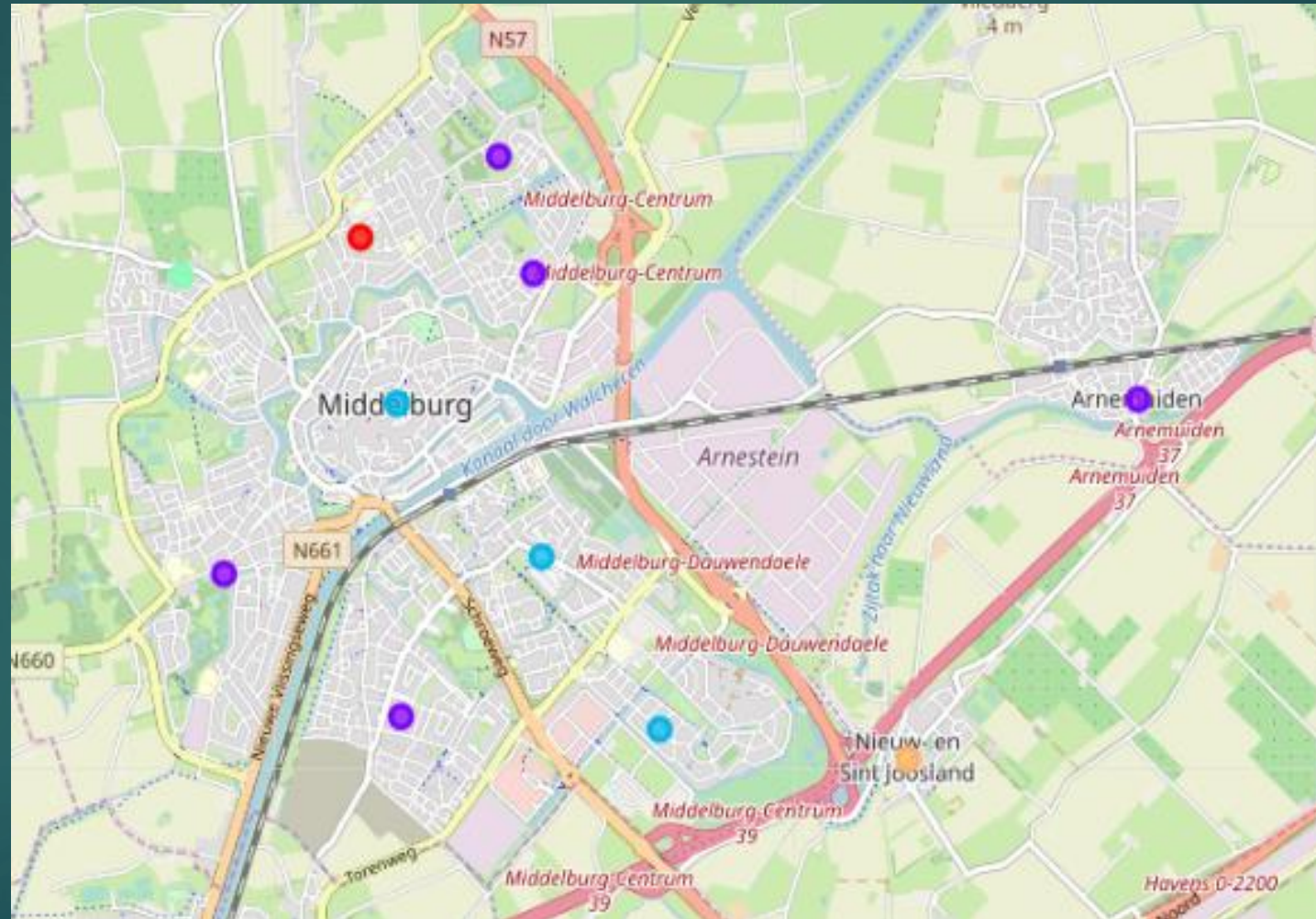▶ Labeled data of each cluster with its combined neighborhood and it's top 10 venues

Neighborhoods with coordinates

Collected dataset

* First five of the dataset

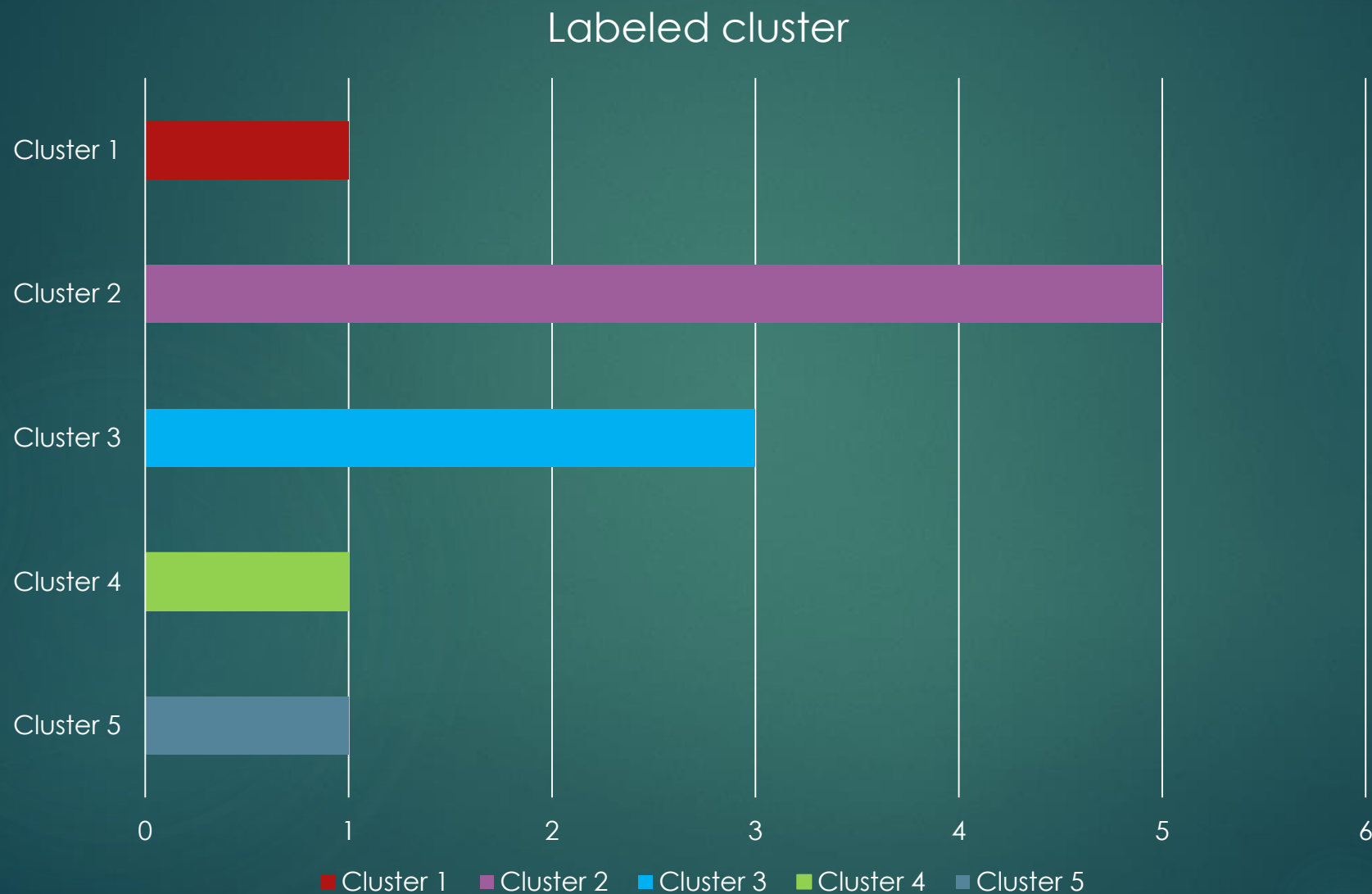|	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Category	Venue Latitude	Venue Longitude
0	Binnenstad	51.499732	3.613752	B'tje Anders	Fast Food Restaurant	51.499651	3.615871
1	Binnenstad	51.499732	3.613752	De Drukkerij	Bookstore	51.497921	3.611670
2	Binnenstad	51.499732	3.613752	Markt	Plaza	51.498415	3.611665
3	Binnenstad	51.499732	3.613752	St John	Café	51.497060	3.614056
4	Binnenstad	51.499732	3.613752	Biercafé De Vliegende Hollander	Bar	51.500203	3.617550

Dataframe with the top 10 venues for each neighborhood

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Arnemuiden	Train Station	Gas Station	Gym	Supermarket	Food Court	Basketball Court	Fast Food Restaurant	Yoga Studio	Electronics Store	Dance Studio
1	Binnenstad	Café	Restaurant	Bar	Hotel	Snack Place	Plaza	Concert Hall	Coffee Shop	Clothing Store	French Restaurant
2	Dauwendaele	Hotel	Fish Market	Chinese Restaurant	Bus Stop	Bus Station	Intersection	Bowling Alley	Farm	Playground	Bakery
3	Griffioen	Fast Food Restaurant	Arcade	Supermarket	Restaurant	Chinese Restaurant	Bakery	Farm	Dance Studio	Department Store	Diner
4	Klarenbeek	Park	Hotel	Athletics & Sports	Theater	Bakery	Supermarket	Food Court	Restaurant	Cosmetics Shop	Dance Studio
5	Middelburg-Zuid	Bus Stop	Supermarket	Shopping Mall	Snack Place	Drugstore	Furniture / Home Store	Cosmetics Shop	Dance Studio	Fast Food Restaurant	Intersection
6	Mortiere	Golf Course	Furniture / Home Store	Toy / Game Store	Fast Food Restaurant	Electronics Store	Buffet	Mini Golf	Mattress Store	Intersection	Restaurant
7	Nieuw - en Sint Joosland	Golf Course	Sporting Goods Shop	Intersection	Soccer Field	French Restaurant	Gas Station	Cosmetics Shop	Dance Studio	Department Store	Diner
8	Nieuw Middelburg	Yoga Studio	Sporting Goods Shop	French Restaurant	Fast Food Restaurant	Gym / Fitness Center	Harbor / Marina	Drugstore	Park	Pharmacy	Furniture / Home Store
9	Stromenwijk 't Zand	Sports Club	Snack Place	Asian Restaurant	Athletics & Sports	Grocery Store	Basketball Court	Discount Store	Café	Drugstore	Fast Food Restaurant
10	Veersepoort	Athletics & Sports	Supermarket	Fast Food Restaurant	Furniture / Home Store	Pharmacy	Bakery	Flower Shop	Plaza	Soccer Field	Drugstore

Visualizing Labeled clusters

Visualizing Labeled clusters

Labeled cluster

Conclusion and future directions

- The answer is that cluster three is the best cluster

- Accuracy of the k-means clustering model could be improved

- Collect more data like the average income of residents in the neighborhood and the accessibility of public transport

- Time to spend on the project could be improved by reducing the strict deadlines imposed by school so there's more time to make the calculations and accuracy of the clustering model better