



GROUP DATA CHALLENGE

- MIGROS STORES -

Jacques, Muchun, Patrizia

27.5.2022

TASK

The Migros logo, consisting of the word "MIGROS" in a bold, orange, sans-serif font, is centered within a white rectangular box.

-> find the best places to create new Migros stores

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Analyze market opportunities based on:

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-> find the best places to create new Migros stores

Analyze market opportunities based on:

- Density of existing stores

TASK

MIGROS

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migrolino

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-> find the best places to create new Migros stores

Analyze market opportunities based on:

- Density of existing stores
- Presence of competitors

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-> find the best places to create new Migros stores

Analyze market opportunities based on:

- Density of existing stores
- Presence of competitors
- General population density

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-> find the best places to create new Migros stores

Analyze market opportunities based on:

- Density of existing stores
- Presence of competitors
- General population density
- Income distribution
- Social status of population

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-> find the best places to create new Migros stores

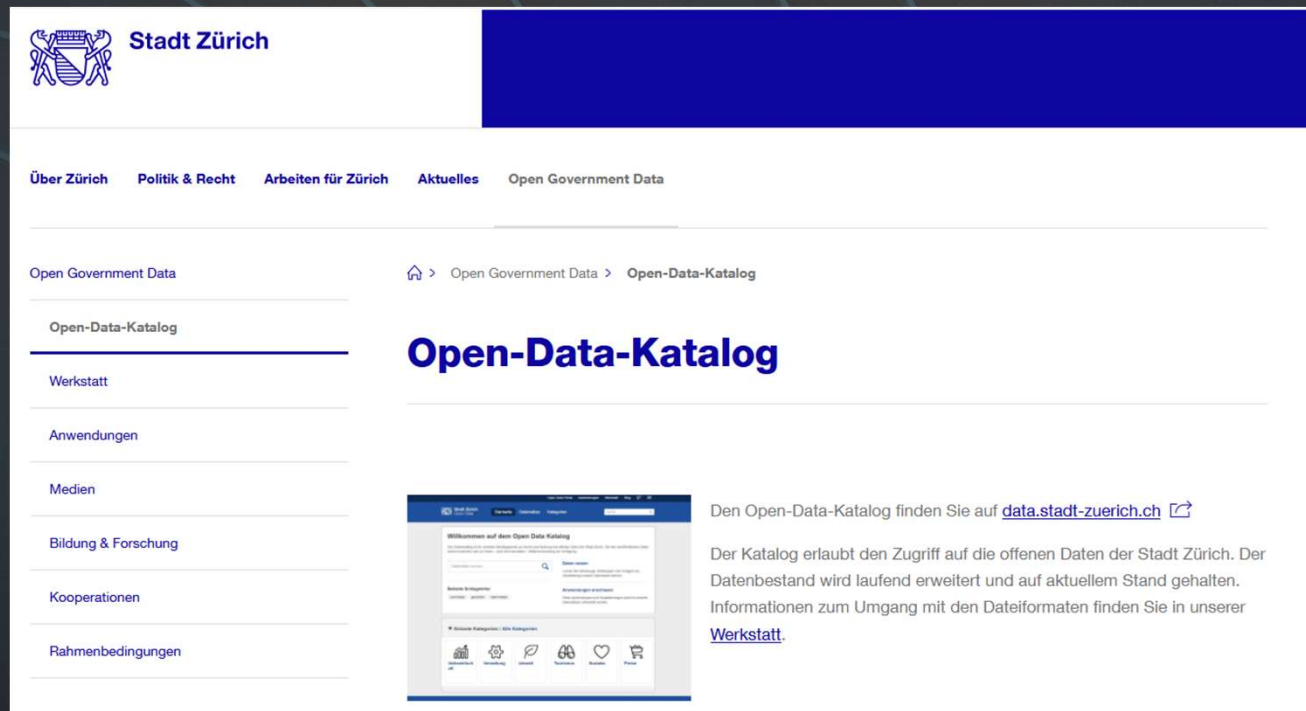
Analyze market opportunities based on:

- Density of existing stores
- Presence of competitors
- General population density
- Income distribution
- Social status of population

STRATEGY

MIGROS

1. Collecting data about population in Zürich:



The screenshot shows the official website of the City of Zurich's Open Data Catalog. The header features the 'Stadt Zürich' logo and a navigation menu with links to 'Über Zürich', 'Politik & Recht', 'Arbeiten für Zürich', 'Aktuelles', and 'Open Government Data'. A left sidebar lists various services: 'Open-Data-Katalog' (highlighted), 'Werkstatt', 'Anwendungen', 'Medien', 'Bildung & Forschung', 'Kooperationen', and 'Rahmenbedingungen'. The main content area is titled 'Open-Data-Katalog' and includes a breadcrumb trail: 'Home > Open Government Data > Open-Data-Katalog'. Below the title, there is a small thumbnail image of the catalog's interface and a paragraph of text explaining the catalog's purpose and providing a link to the data portal.

Stadt Zürich

Über Zürich Politik & Recht Arbeiten für Zürich Aktuelles Open Government Data

Open Government Data

Open-Data-Katalog

Werkstatt

Anwendungen

Medien

Bildung & Forschung

Kooperationen

Rahmenbedingungen

Open-Data-Katalog

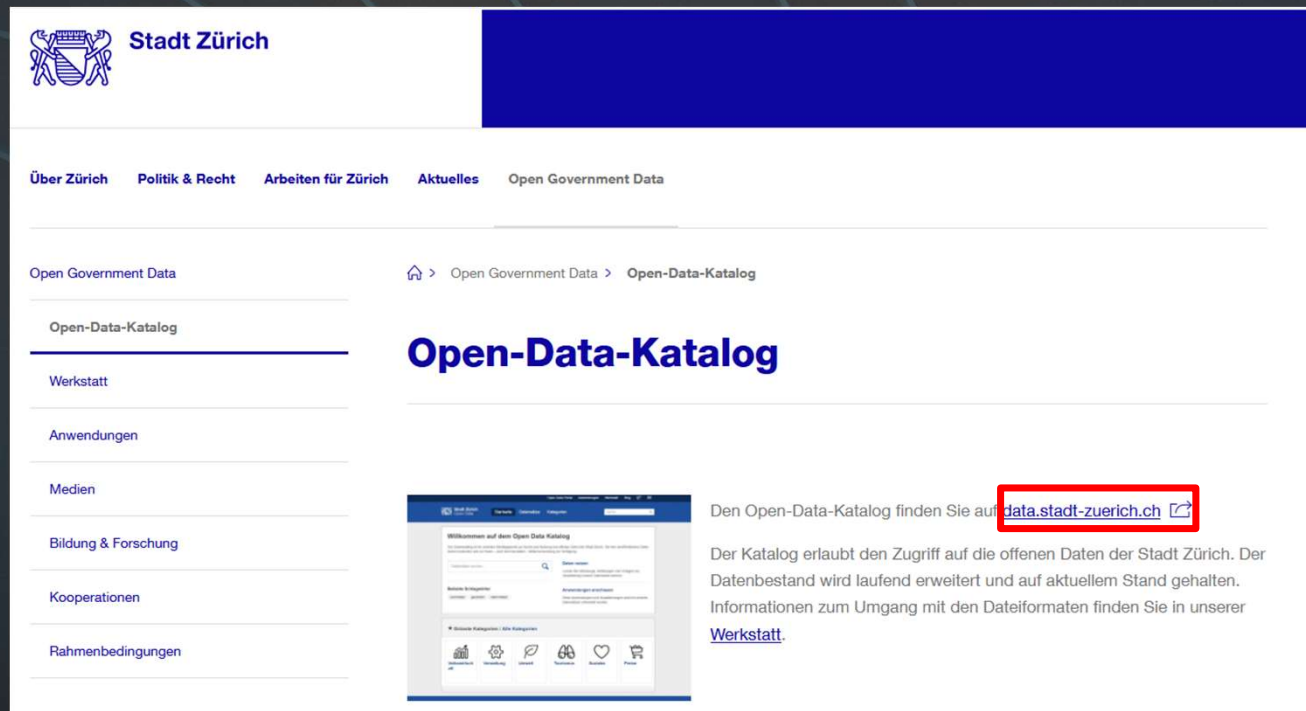
Den Open-Data-Katalog finden Sie auf data.stadt-zuerich.ch

Der Katalog erlaubt den Zugriff auf die offenen Daten der Stadt Zürich. Der Datenbestand wird laufend erweitert und auf aktuellem Stand gehalten. Informationen zum Umgang mit den Dateiformaten finden Sie in unserer [Werkstatt](#).

STRATEGY

MIGROS

1. Collecting data about population in Zürich:



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Stadt Zürich

Über Zürich Politik & Recht Arbeiten für Zürich Aktuelles Open Government Data

Open Government Data

Open-Data-Katalog

Werkstatt

Anwendungen

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Kooperationen

Rahmenbedingungen

Open-Data-Katalog

Willkommen auf dem Open Data Katalog

Den Open-Data-Katalog finden Sie auf data.stadt-zuerich.ch

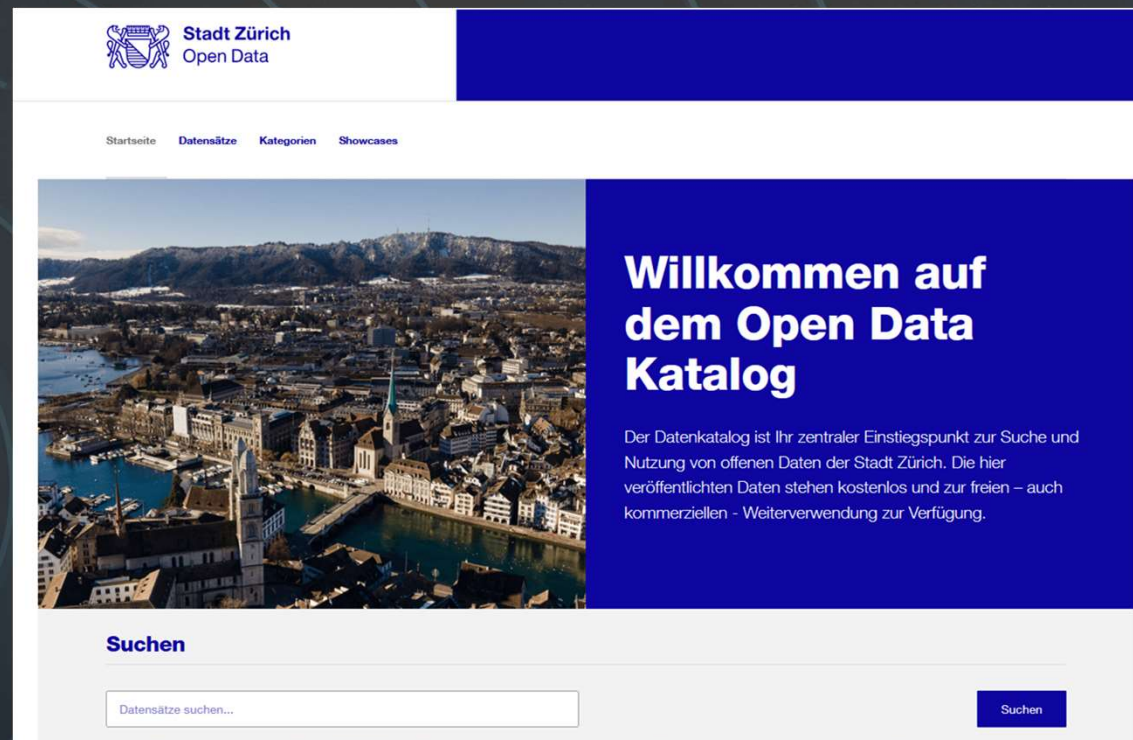
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csv files

STRATEGY

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1. Collecting data about population in Zürich:



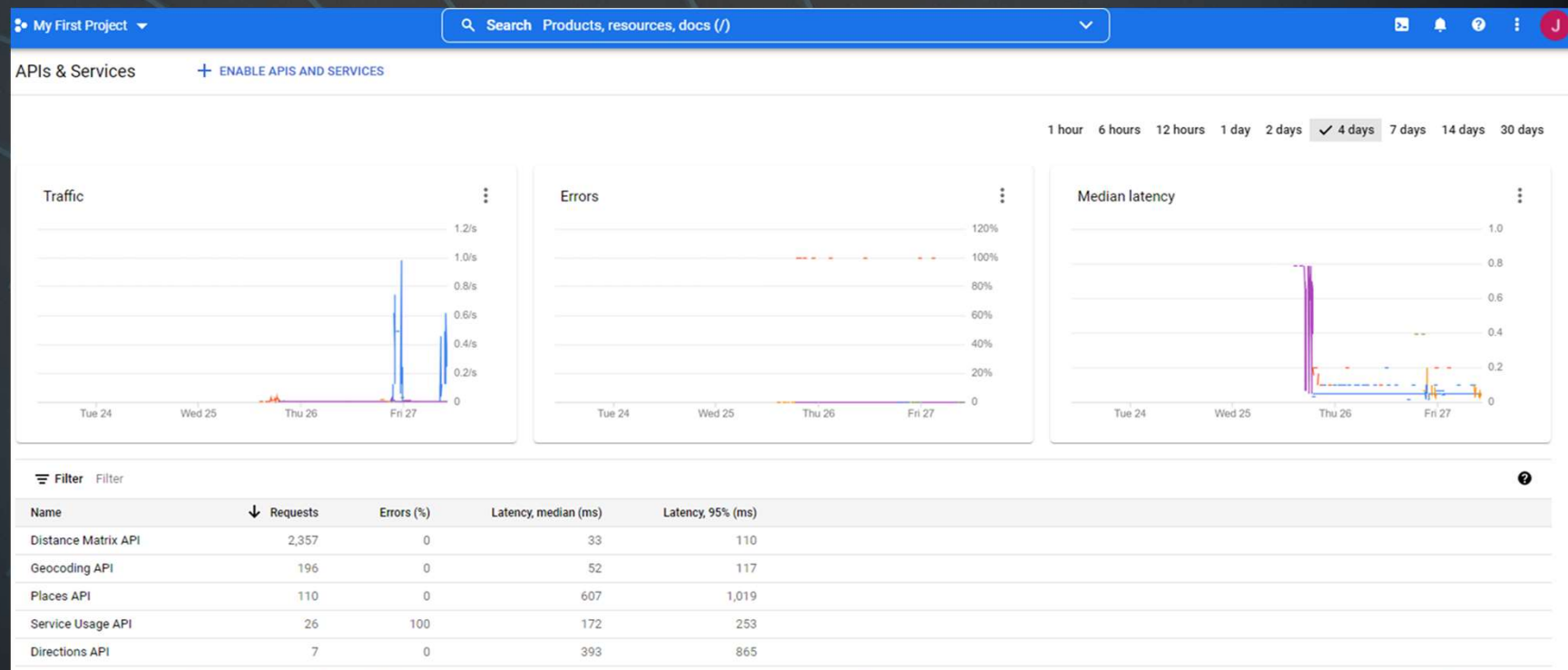
STRATEGY

MIGROS

2. Collecting data about locations of Migros stores and competitors in

Zürich:

-> Google
API:



STRATEGY

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2. Collecting data about locations of Migros stores and competitors in Zürich:

-> Google API:

```
def supermarket(name):
    query = name
    api_key = key_dict['key']

    req = requests.get(url + "query=" + query + "&key=" + api_key)
    places_json = req.json()
    my_result = places_json["results"]
    df_supermarket = json_normalize(my_result).sort_values('formatted_address')

    for i in range(15):
        if 'next_page_token' in places_json:
            print(i)
            req2 = requests.get(url + "query=" + query + "&key=" + api_key + "&pagetoken=" + places_json['next_page_token'])
            places_json2 = req2.json()
            my_result2 = places_json2["results"]
            df_supermarket2 = json_normalize(my_result2)
            print(len(df_supermarket2))
            df_supermarket_all = df_supermarket.append(df_supermarket2)
            places_json = places_json2
            sleep(3) #for doing API loop, it's important to have a wait time. (If do it manually, won't have this problem.)

    return df_supermarket_all
```

STRATEGY

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3. Preparing the interactive webpage for data analysis:

-> Migros stores:

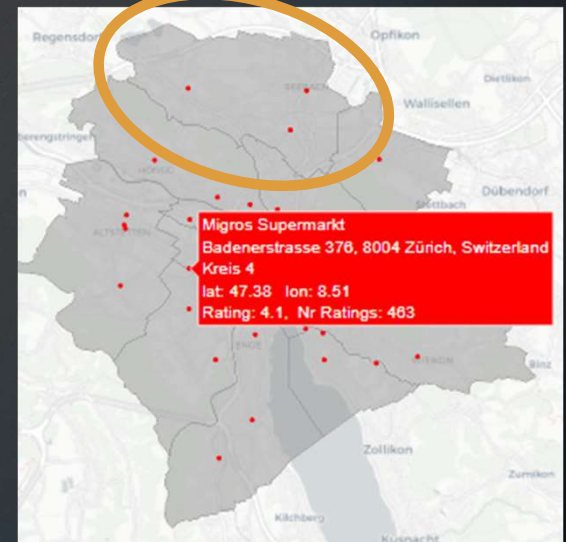
address	name	rating	nr_users_rating	lat	lng	Kreis_id
Badenerstrasse 376, 8004 Zürich, Switzerland	Migros Supermarkt	4.1	463	47.379105	8.508754	4
Birmensdorferstrasse 140, 8003 Zürich, Switzer...	Migros Supermarkt	4.2	636	47.370066	8.520107	3
Birmensdorferstrasse 320, 8055 Zürich, Switzer...	Migros Supermarkt	4.3	520	47.369956	8.508721	3
Etzelstrasse 3, 8038 Zürich, Switzerland	Migros Supermarkt	4.3	616	47.344706	8.529962	2
Falkenstrasse 19 - 21, 8008 Zürich, Switzerland	Migros	4.2	419	47.365446	8.547967	1
Hardturmstrasse 11, 8005 Zürich, Switzerland	Migros Supermarkt	4.3	227	47.391336	8.518553	5
Hauptbahnhof, 8001 Zürich, Switzerland	Migros Superm.	4.2	1811	47.377507	8.539468	1
Hohlstrasse 600, 8048 Zürich, Switzerland	Migros Supermarkt	4.2	537	47.391297	8.487764	9
Jonas-Furrer-Strasse 21, 8046 Zürich, Switzerland	Migros Supermarkt	4.2	858	47.420064	8.508500	11
Limmatstrasse 152, 8005 Zürich, Switzerland	Migros Supermarkt	4.4	1645	47.385463	8.531409	5
Löwenstrasse 31-35 2. und 3. OG, 8001 Zürich, ...	Migros	4.3	2174	47.375383	8.536080	1
Neumarkt Altstetten, Altstetterstrasse 145, 80...	Migros Supermarkt	4.3	1097	47.388216	8.487381	9
Pfingstweidstrasse 101, 8005 Zürich, Switzerland	Migros-Supermarkt	4.2	233	47.390287	8.508995	5
Schaffhauserstrasse 75, 8057 Zürich, Switzerland	Migros	4.0	301	47.392546	8.538483	6
Scheffelstrasse 3, 8037 Zürich, Switzerland	Migros Supermarkt	4.1	155	47.393683	8.529287	10
Sihlpassage, 8004 Zürich, Switzerland	Migros Supermarkt	4.3	301	47.378402	8.535615	4
Stockerstrasse 47, 8002 Zürich, Switzerland	Migros Supermarkt	4.2	127	47.368328	8.534194	2
Tessinerpl. 10, 8002 Zürich, Switzerland	Migros Supermarkt	4.2	552	47.364130	8.531029	2
Wengistrasse 7, 8004 Zürich, Switzerland	Migros Supermarkt	4.2	478	47.374987	8.523070	4
Winterthurerstrasse 2/4, 8006 Zürich, Switzerland	Migros Supermarkt	4.2	503	47.386031	8.548559	6

STRATEGY

3. Preparing -> polygons:

```
{'type': 'Polygon',  
  'coordinates': [[[8.5488505541, 47.3660199439],  
    [8.549008312, 47.366011339],  
    [8.5490343957, 47.365985344],  
    [8.5490662944, 47.3659836341],  
    [8.5490685511, 47.3659834655],  
    [8.5490707975, 47.3659831919],  
    [8.5490730287, 47.3659828139],  
    [8.5490751781, 47.3659823472],  
    [8.5490773041, 47.3659817836],  
    [8.5490794024, 47.3659811243],  
    [8.5490813401, 47.3659804288],  
    [8.5490832363, 47.3659796272],  
    [8.5490850852, 47.3659787219],  
    [8.549086776, 47.3659777785],  
    [8.5490884154, 47.3659767483],  
    [8.549089999, 47.3659756343],  
    [8.5493297502, 47.3659460465],  
    [8.5493754238, 47.3659350739],  
    [8.5493734425, 47.3659308472],  
    [8.5494984108, 47.365900276],  
    [8.5495006683, 47.36590441],  
    [8.54956276, 47.3658890337],  
    [8.5495574659, 47.365878956],  
    [8.5496645671, 47.3658525144],  
    ...  
    [8.6158808174, 47.3543734335],  
    [8.6159009331, 47.354362143],  
    [8.6159202156, 47.354349482],  
    [8.6159385718, 47.3543355117],  
    ...]]]}
```

MIGROS



STRATEGY

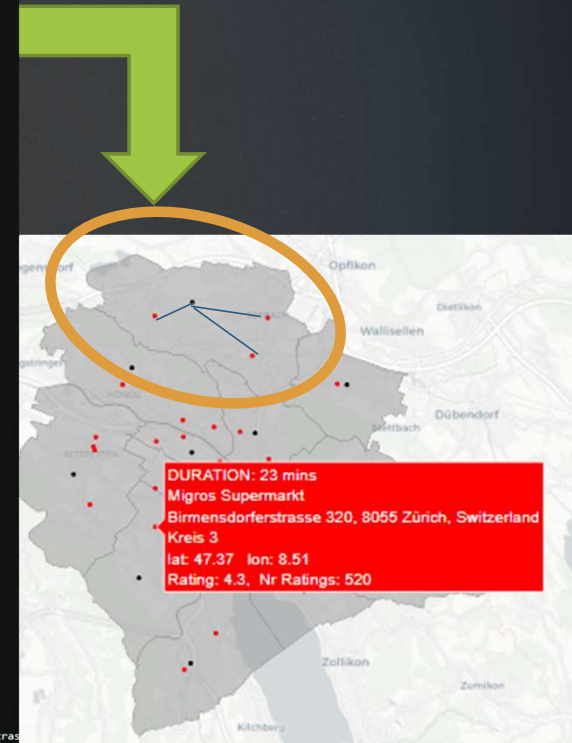
MIGROS

3. Preparing

-> Google maps
API:

```
https://maps.googleapis.com/maps/api/directions/json?origin=Zuerich+Kreis+4&destination=Zuerich+Kreis+5&key=AIzaSyD0L0KKEcRy-u7pds0Rc-

{
  "geocoded_waypoints" : [
    {
      "geocoder_status" : "OK",
      "place_id" : "ChIJ35dUL0KKEcRy-u7pds0Rc-",
      "types" : [ "political", "sublocality", "sublocality_level_1" ]
    },
    {
      "geocoder_status" : "OK",
      "place_id" : "ChIJ8kPWg8KKEcRvIF9fns03w",
      "types" : [ "political", "sublocality", "sublocality_level_1" ]
    }
  ],
  "routes" : [
    {
      "bounds" : {
        "northeast" : {
          "lat" : 47.3872789,
          "lng" : 8.5215003
        },
        "southwest" : {
          "lat" : 47.38007289999999,
          "lng" : 8.5155884
        }
      },
      "copyrights" : "Map data ©2022",
      "legs" : [
        {
          "distance" : {
            "text" : "1,4 km",
            "value" : 1442
          },
          "duration" : {
            "text" : "3 min",
            "value" : 191
          },
          "end_address" : "Industriequartier, Zürich, Svizzera",
          "end_location" : {
            "lat" : 47.3872789,
            "lng" : 8.519051500000002
          },
          "start_address" : "Aussersihl, Zurigo, Svizzera",
          "start_location" : {
            "lat" : 47.38007289999999,
            "lng" : 8.520749499999999
          },
          "steps" : [
            {
              "distance" : {
                "text" : "0,4 km",
                "value" : 360
              },
              "duration" : {
                "text" : "1 min",
                "value" : 43
              },
              "end_location" : {
                "lat" : 47.38178569999999,
                "lng" : 8.5166971
              },
              "html_instructions" : "Procedi in direzione \u003cb\u003enordovest\u003c/b\u003e su \u003cb\u003ehohlstrasse",
              "polyline" : {
                "points" : "m[d'Hue_s@RIVELK\|GXITELof@CHAHABAF3JEPADCF_@rAM'sp@Of@z@0d@CXELKXQd@|v@| |@GL"
```



RESULT: THE WEBPAGE

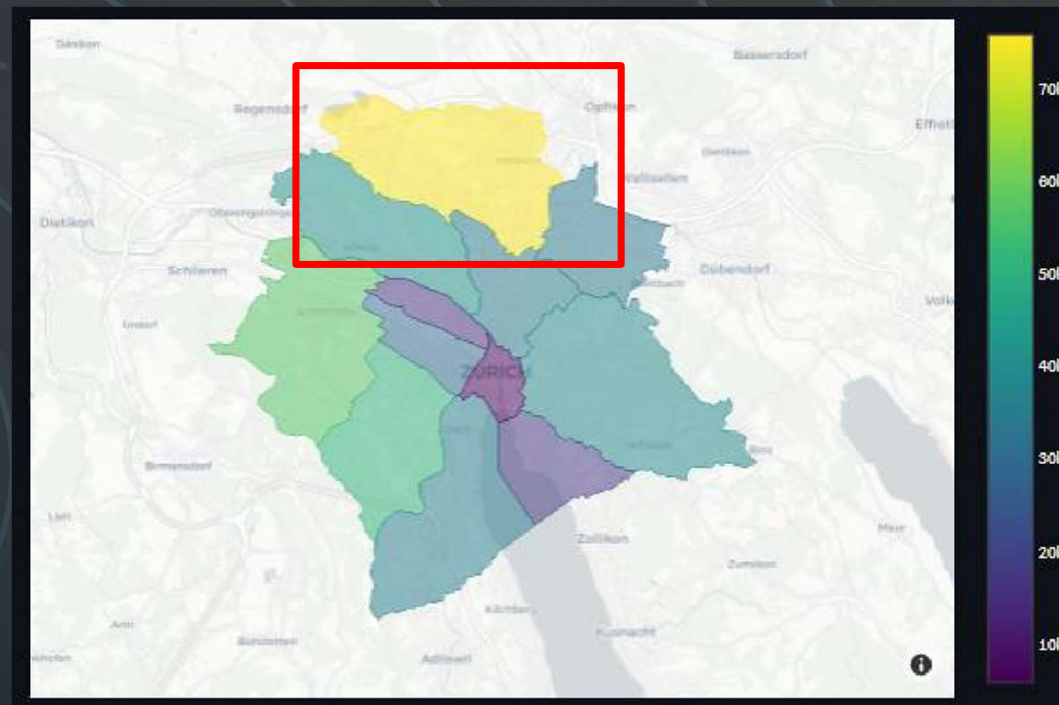
MIGROS

-> Let's have a look at the web
app

CONCLUSIONS

MIGROS

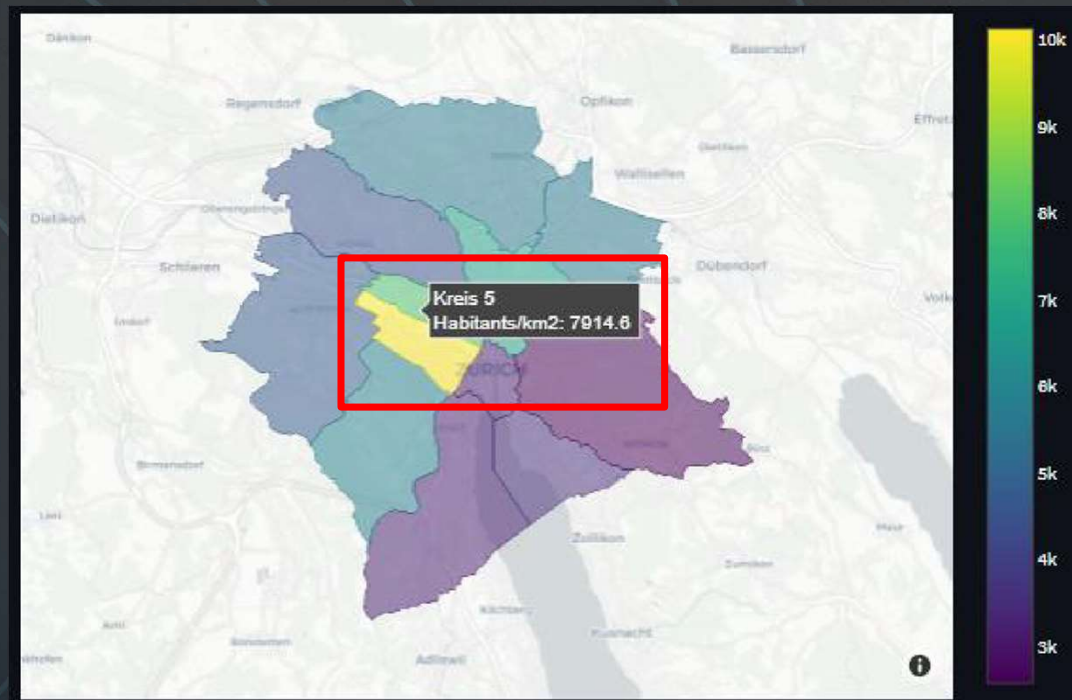
1. Population density in Zürich (by no. of inhabitants per «Kreis»):



CONCLUSIONS

MIGROS

1. Population density in Zürich (by inhabitants/km²):



CONCLUSIONS

MIGROS

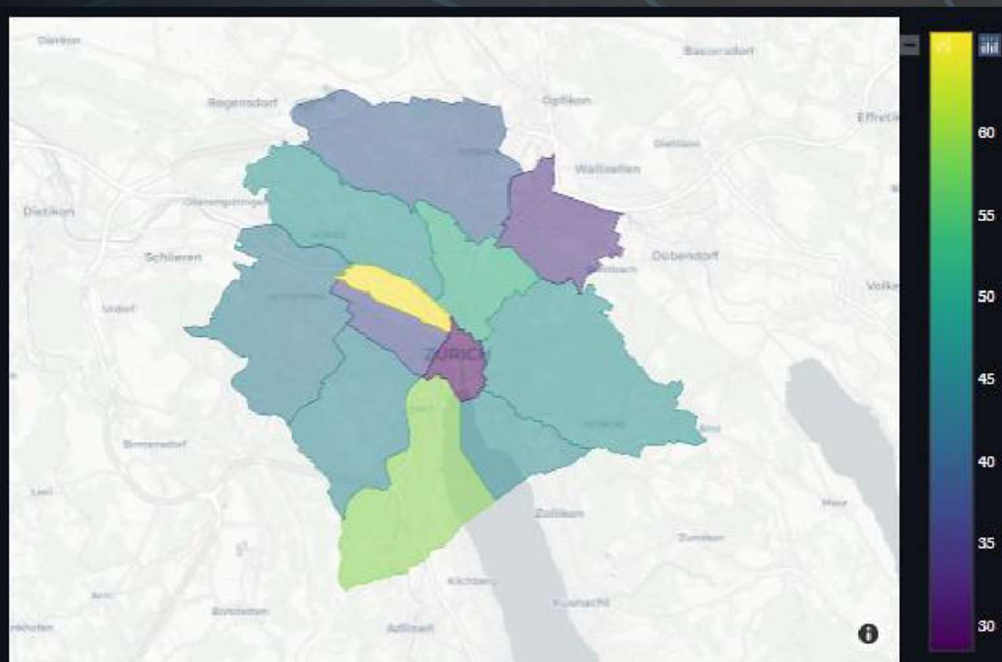
2. Travel time to Migros (here: walking):



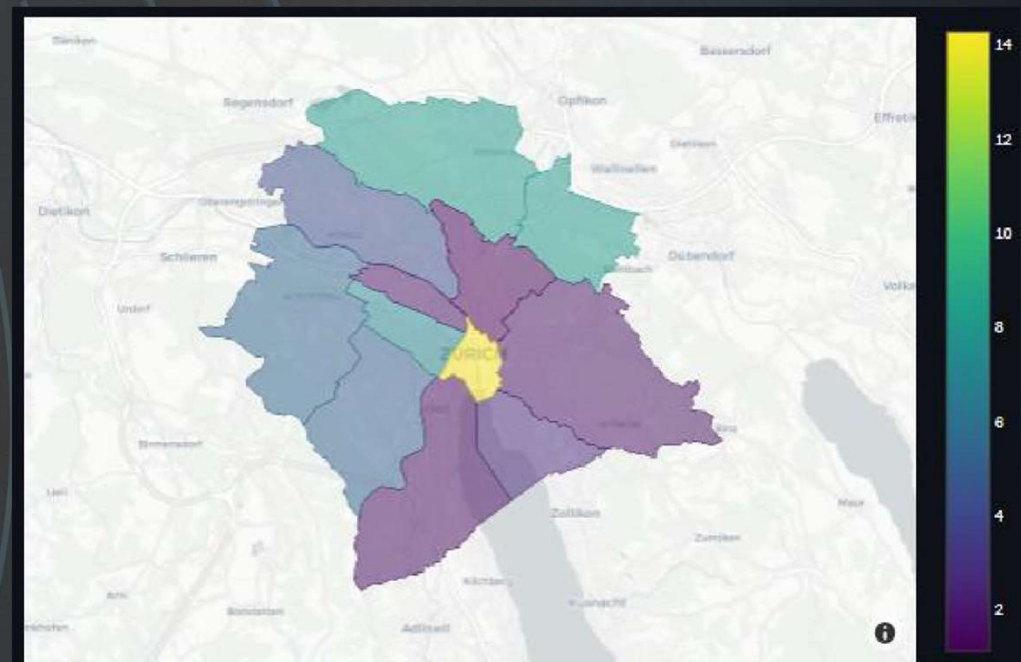
CONCLUSIONS

MIGROS

3. Monetary factors: tax

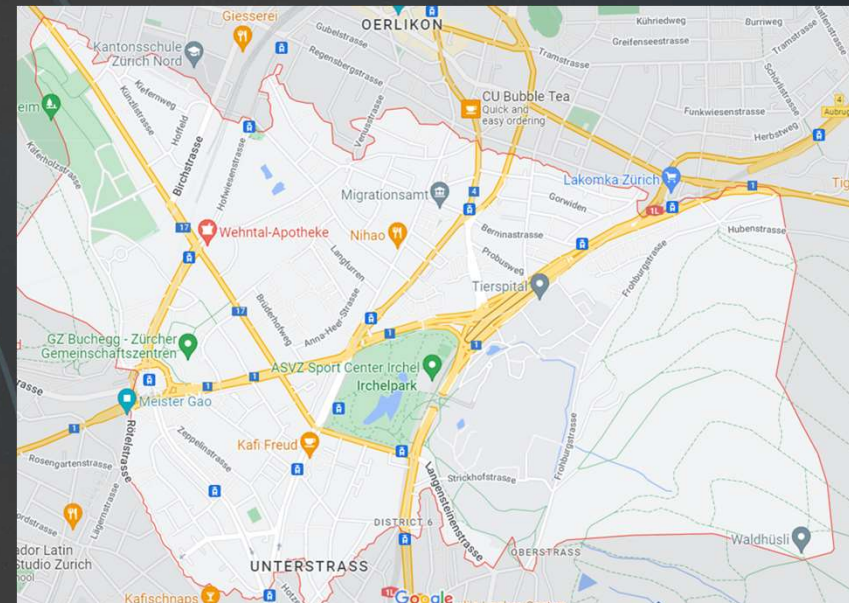
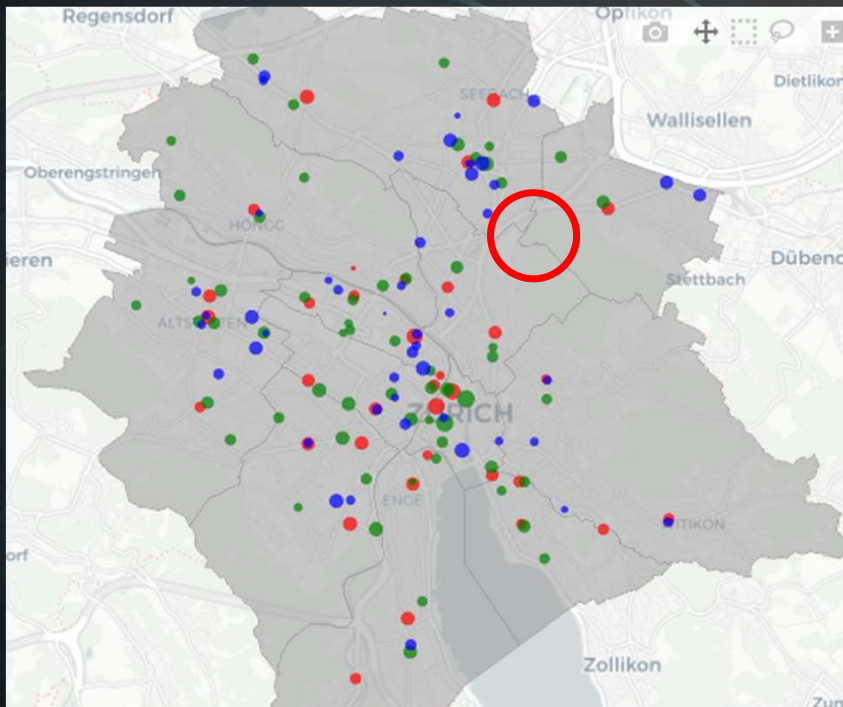


Unemployment rate



RECOMMENDATION

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- No supermarkets around circle
- Convenient traffic connections
- Average income comparably high in these three areas