

COURSERA PROJECT

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MULTICULTURAL CITIES

- Amsterdam
- London
- Los Angeles
- Paris
- New York City
- San Francisco
- São Paulo
- Singapore
- Sydney
- Toronto

BUSINESS PROBLEM

- The president of ONU needs to compare the neighborhoods of that cities to understand they are similar or not. In that case i'll compare New York City (used in Module 3), Toronto (used in Module 3), Paris and London.

NEW YORK DATA EXAMPLE

Borough	Neighborhood	ZIP Codes
Bronx	Central Bronx	10453, 10457, 10460
	Bronx Park and Fordham	10458, 10467, 10468
	High Bridge and Morrisania	10451, 10452, 10456
	Hunts Point and Mott Haven	10454, 10455, 10459, 10474
	Kingsbridge and Riverdale	10463, 10471
	Northeast Bronx	10466, 10469, 10470, 10475
	Southeast Bronx	10461, 10462, 10464, 10465, 10472, 10473
Brooklyn	Central Brooklyn	11212, 11213, 11216, 11233, 11238
	Southwest Brooklyn	11209, 11214, 11228
	Borough Park	11204, 11218, 11219, 11230
	Canarsie and Flatlands	11234, 11236, 11239
	Southern Brooklyn	11223, 11224, 11229, 11235
	Northwest Brooklyn	11201, 11205, 11215, 11217, 11231
	Flatbush	11203, 11210, 11225, 11226
	East New York and New Lots	11207, 11208
	Greenpoint	11211, 11222
	Sunset Park	11220, 11232
Manhattan	Bushwick and Williamsburg	11206, 11221, 11237
	Central Harlem	10026, 10027, 10030, 10037, 10039
	Chelsea and Clinton	10001, 10011, 10018, 10019, 10020, 10036
	East Harlem	10029, 10035
	Gramercy Park and Murray Hill	10010, 10016, 10017, 10022
	Greenwich Village and Soho	10012, 10013, 10014
	Lower Manhattan	10004, 10005, 10006, 10007, 10038, 10280
	Lower East Side	10002, 10003, 10009
	Upper East Side	10021, 10028, 10044, 10065, 10075, 10128
	Upper West Side	10023, 10024, 10025
	Inwood and Washington Heights	10031, 10032, 10033, 10034, 10040
Queens	Northeast Queens	11361, 11362, 11363, 11364
	North Queens	11354, 11355, 11356, 11357, 11358, 11359, 11360
	Central Queens	11365, 11366, 11367
	Jamaica	11412, 11423, 11432, 11433, 11434, 11435, 11436
	Northwest Queens	11101, 11102, 11103, 11104, 11105, 11106
	West Central Queens	11374, 11375, 11379, 11385

TORONTO DATA EXAMPLE

Postcode ↕	Borough ↕	Neighbourhood ↕
M1A	Not assigned	Not assigned
M2A	Not assigned	Not assigned
M3A	North York	Parkwoods
M4A	North York	Victoria Village
M5A	Downtown Toronto	Harbourfront
M6A	North York	Lawrence Heights
M6A	North York	Lawrence Manor
M7A	Queen's Park	Not assigned
M8A	Not assigned	Not assigned
M9A	Downtown Toronto	Queen's Park
M1B	Scarborough	Rouge
M1B	Scarborough	Malvern
M2B	Not assigned	Not assigned
M3B	North York	Don Mills North
M4B	East York	Woodbine Gardens
M4B	East York	Parkview Hill
M5B	Downtown Toronto	Ryerson
M5B	Downtown Toronto	Garden District
M6B	North York	Glencairn
M7B	Not assigned	Not assigned
M8B	Not assigned	Not assigned

PARIS DATA EXAMPLE

Postal Code	Place Name	Region	Department	Arrondissement	Canton
75001	1er Arrondissement Paris	Île-de-France	Paris	Paris	Paris
75002	2ème Arrondissement Paris	Île-de-France	Paris	Paris	Paris
75003	3ème Arrondissement Paris	Île-de-France	Paris	Paris	Paris
75004	4ème Arrondissement Paris	Île-de-France	Paris	Paris	Paris
75005	5ème Arrondissement Paris	Île-de-France	Paris	Paris	Paris
75006	6ème Arrondissement Paris	Île-de-France	Paris	Paris	Paris
75007	7ème Arrondissement Paris	Île-de-France	Paris	Paris	Paris
75008	8ème Arrondissement Paris	Île-de-France	Paris	Paris	Paris
75009	9ème Arrondissement Paris	Île-de-France	Paris	Paris	Paris

LONDON DATA
EXAMPLE
(EASTERN AREA)

Postcode district ♦	Post town ♦	Coverage ♦	Local authority area ♦
E1	LONDON	Eastern head district: Aldgate (part), Bishopsgate (part), Whitechapel, Shoreditch (part), Spitalfields, Shadwell, Stepney, Mile End (part), Portsoken	Tower Hamlets, Hackney, City of London
E1W	LONDON	Wapping, St Katharine Docks, Stepney (part), Shadwell (part), Whitechapel (part)	Tower Hamlets
E2	LONDON	Bethnal Green district: Bethnal Green, Haggerston, Hoxton (part), Shoreditch (part), Cambridge Heath, Globe Town, Shoreditch (part)	Tower Hamlets, Hackney
E3	LONDON	Bow district: Bow, Bow Common, Bromley-by-Bow, Old Ford, Mile End (part), Fish Island, South Bromley, Mill Meads (part)	Tower Hamlets, Newham
E4	LONDON	Chingford district: Chingford, Sewardstone, Highams Park, Upper Edmonton (part), Woodford Green (part)	Waltham Forest, Enfield, Epping Forest (Essex)
E5	LONDON	Clapton district: Leyton (Part), Upper Clapton, Lower Clapton, Stoke Newington (part)	Hackney, Waltham Forest
E6	LONDON	East Ham district: East Ham, Beckton, Upton Park (part), Barking (part)	Newham, Barking and Dagenham
E7	LONDON	Forest Gate district: Forest Gate, Leytonstone (Part), Stratford (part)	Newham, Waltham Forest
E8	LONDON	Hackney district: Hackney Central, Dalston, London Fields, Stoke Newington (part)	Hackney
E9	LONDON	Homerton district: Homerton, Hackney Wick, South Hackney, Hackney Marshes, Victoria Park	Hackney, Tower Hamlets
E10	LONDON	Leyton district: Leyton, Temple Mills, Hackney Marshes (part) Upper Clapton (part), Walthamstow Marshes	Waltham Forest, Hackney
E11	LONDON	Leytonstone district: Leytonstone, Wanstead, Aldersbrook (part), Snaresbrook, Cann Hall	Waltham Forest, Redbridge
E12	LONDON	Manor Park district: Manor Park, Little Ilford, Aldersbrook (part)	Newham, Redbridge
E13	LONDON	Plaistow district: Plaistow, West Ham (part), Upton Park (part)	Newham
E14	LONDON	Poplar district: Poplar, Isle of Dogs, Limehouse, Canary Wharf, Millwall, Blackwall, Cubitt Town, South Bromley, North Greenwich, Leamouth	Tower Hamlets
E15	LONDON	Stratford district: Stratford, West Ham (part), Maryland, Leyton (part), Leytonstone (part) Temple Mills (part), Hackney Wick (part), Bow (part)	Newham, Waltham Forest, Hackney, Tower Hamlets
E16	LONDON	Victoria Docks and North Woolwich district: Canning Town, Silvertown, Royal Docks, North Woolwich, Beckton (part)	Newham
E17	LONDON	Walthamstow district: Walthamstow, Upper Walthamstow, Leyton (part)	Waltham Forest
E18	LONDON	Woodford and South Woodford district: Woodford, South Woodford	Redbridge
E20	LONDON	Olympic Park district: Olympic Park, & parts of Stratford, Homerton, Leyton, Bow;	Newham, Waltham Forest, Hackney, Tower Hamlets
E77	LONDON	Non-geographic postcode district (NatWest, delivers to E1)	Tower Hamlets
E98	LONDON	Non-geographic postcode district (News International, delivers to E1W)	Tower Hamlets

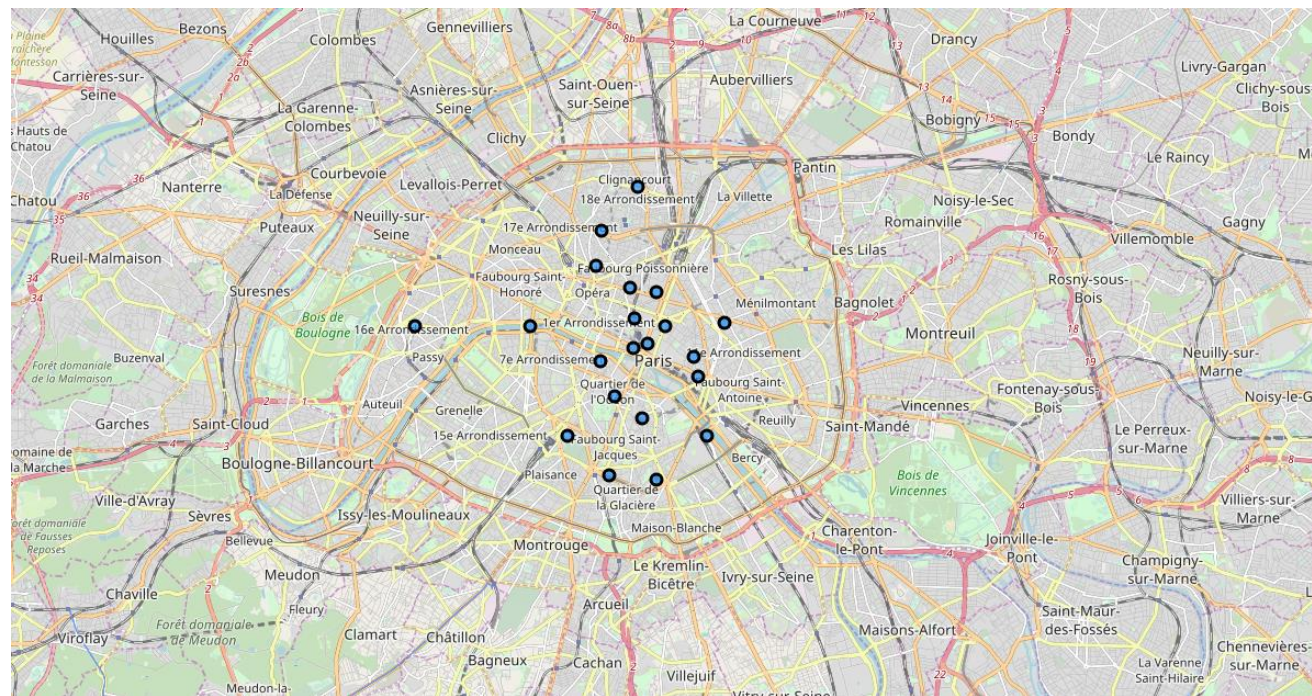
METHODOLOGY

- I adopted the methodology used in Toronto example.
- First i used `read_html` to read datasource para convert them to a dataframe. After that i did the transformations before convert them in a folium map, which means, drop duplicates, add columns, apend columns, etc. After that i created the folium map for each city based on latitude in `pgeocode.nominatim`.

TORONTO RESULTS



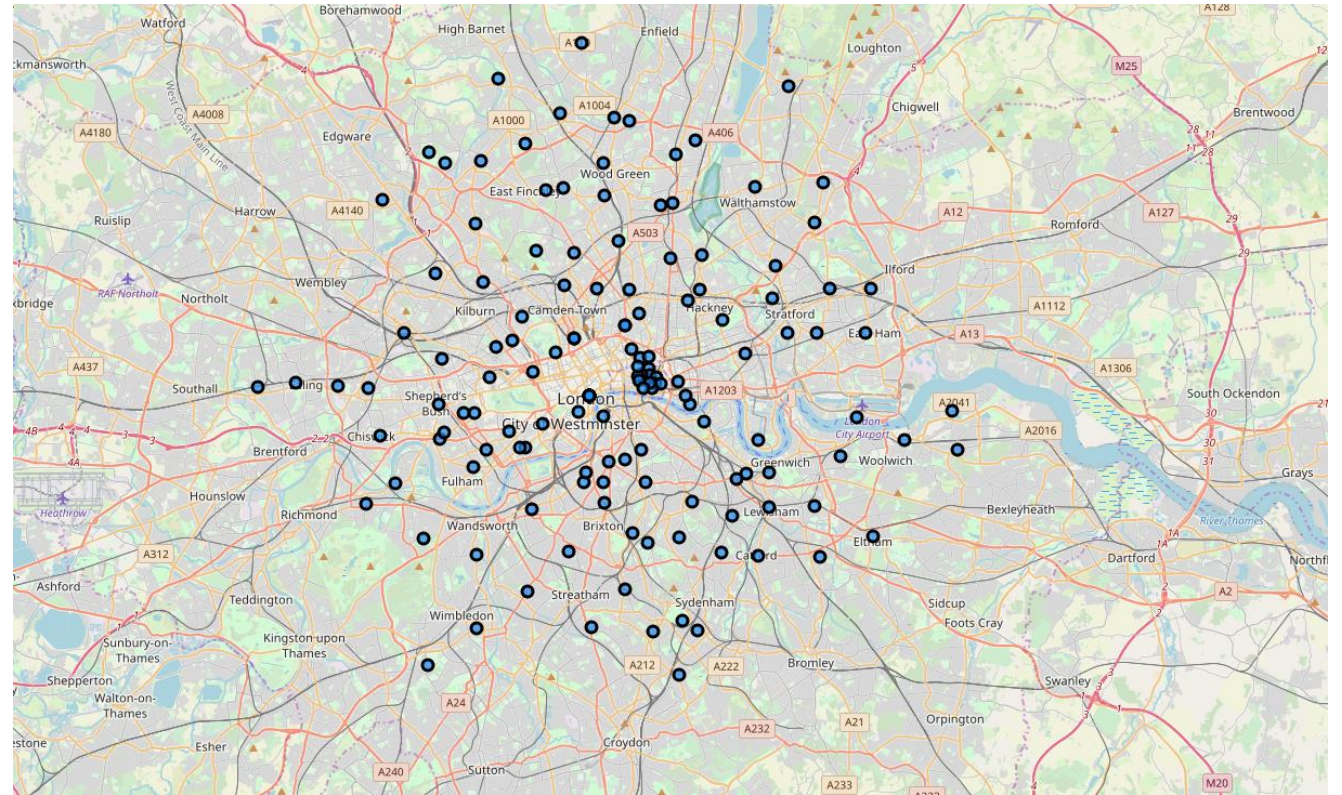
PARIS RESULTS



NEW YORK RESULTS



LONDON RESULTS



CONCLUSION

- It was a cool project. I understand now better the concept of data transformation and data science. The course was amazing and i think that the know-how that i learned could be importance in my professional carreer.
- Regarding of the project, i had no idea that the cities are so different.