WEB SCRAPING PROJECT – Toronto rental prices

Analysis of the rental market of the city of Toronto - Canada

Content

01 Motivation and data gathering

- **Website**

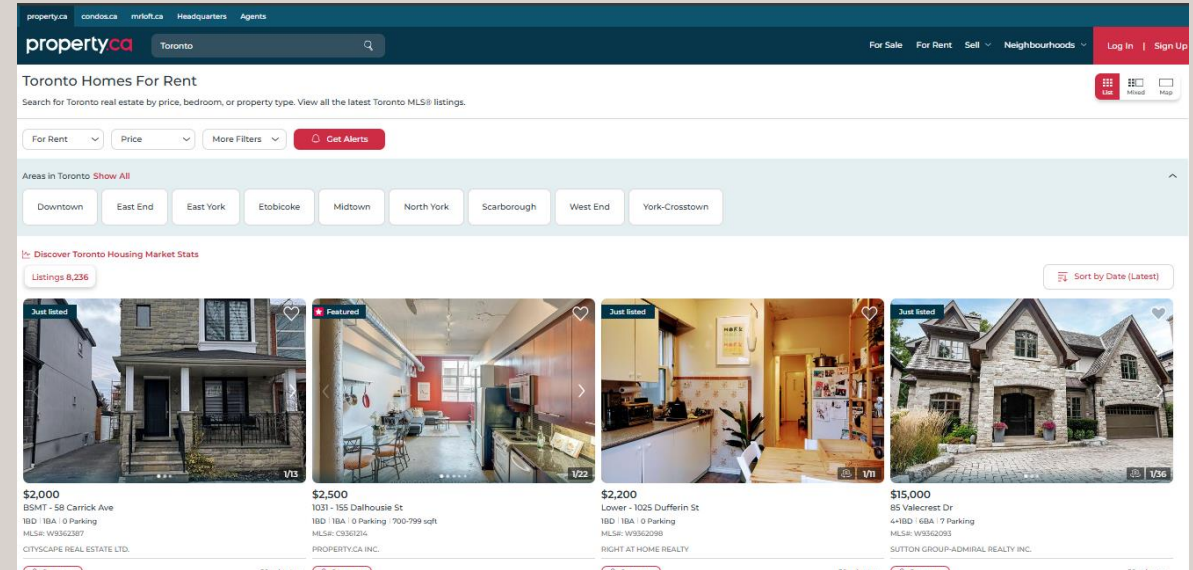 property.ca/toronto?mode=Rent

- Rental data by region and neigbourhood

01 Motivation and data gathering

- Web requests using request

- Html parsing using BeautifulSoup

- Dataframe creation using pandas

```python
def get_data(city, neighbourhood):

    '''

    Gather rental data from the website https://property.ca/. It returns a DataFrame regarding the neighbourhood of the city given as arguments
    when the function is called, containing the following information:

    Arg:
        city (str): The name of the city.
        neighbourhood (str): The name of the neighhood


    Returns:
        Pandas dataframe containinh with the following data:
        mls: the mls number for each unit listed.
        address: address of the unit.
        price: price of the rent per month in canadian dollars.
        bedrooms: number of bedrooms of the unit.
        bathrooms: number of bathrooms of the the unit.
        parking: number of parking slots of the unit.
        size: size of the unit.
        time_since_listed: the time since the unit has been posted on the website.
        broker: broker responsible for the unit.
        neighbourhood: the name of the neighbourhood the unit belongs to.
        city: the name of the city where the unit is located.
    '''

    city_to_search = city.lower()
    neighbourhood_to_search = neighbourhood.lower()
```

	mls	address	price	bedrooms	bathrooms	parking	size	time_since_listed	broker	neighbourhood	city	region
0	MLS#: C9350863	D - 32 Shank St	3500	2BD	3BA	2 Parking	1200-1399 sqft	15 minutes	LIVING REALTY INC.	king-west	Toronto	Downtown
1	MLS#: C9347984	3713 - 35 Mercer St	2450	1BD	1BA	0 Parking	0-499 sqft	2 days	PROPERTY.CA INC.	king-west	Toronto	Downtown
2	MLS#: C9350769	1508 - 8 Charlotte St	2450	1BD	1BA	0 Parking	500-599 sqft	15 minutes	LIVING REALTY INC.	king-west	Toronto	Downtown
3	MLS#: C9352026	3204 - 327 King St W	2350	1BD	1BA	0 Parking	0-499 sqft	45 minutes	RE/MAX PLUS CITY TEAM INC.	king-west	Toronto	Downtown
4	MLS#: C9351633	1013 - 1030 King St W	3600	2BD	2BA	1 Parking	600-699 sqft	45 minutes	RE/MAX EXCEL TITAN	king-west	Toronto	Downtown
...	...	...	...	...	...	...	...	...	...	...	...	...

02
The dataset

	mls	address	price	bathrooms	parking	size	days_since_listed	broker	neighbourhood	city	region	bedrooms	extra_bedroom_spaces
0	C9350863	D - 32 Shank St	3500	3	3	1200	0	LIVING REALTY INC.	King West	Toronto	Downtown	2	0
1	C9347984	3713 - 35 Mercer St	2450	1	1	400	2	PROPERTY.CA INC.	King West	Toronto	Downtown	1	0
2	C9350769	1508 - 8 Charlotte St	2450	1	1	500	0	LIVING REALTY INC.	King West	Toronto	Downtown	1	0
3	C9352026	3204 - 327 King St W	2350	1	1	400	0	RE/MAX PLUS CITY TEAM INC.	King West	Toronto	Downtown	1	0
4	C9351633	1013 - 1030 King St W	3600	2	2	600	0	RE/MAX EXCEL TITAN	King West	Toronto	Downtown	2	0

01
Duplicates were removed

02
The format of the data (such as '1BA') was corrected

03
The data types of variables was changed

04
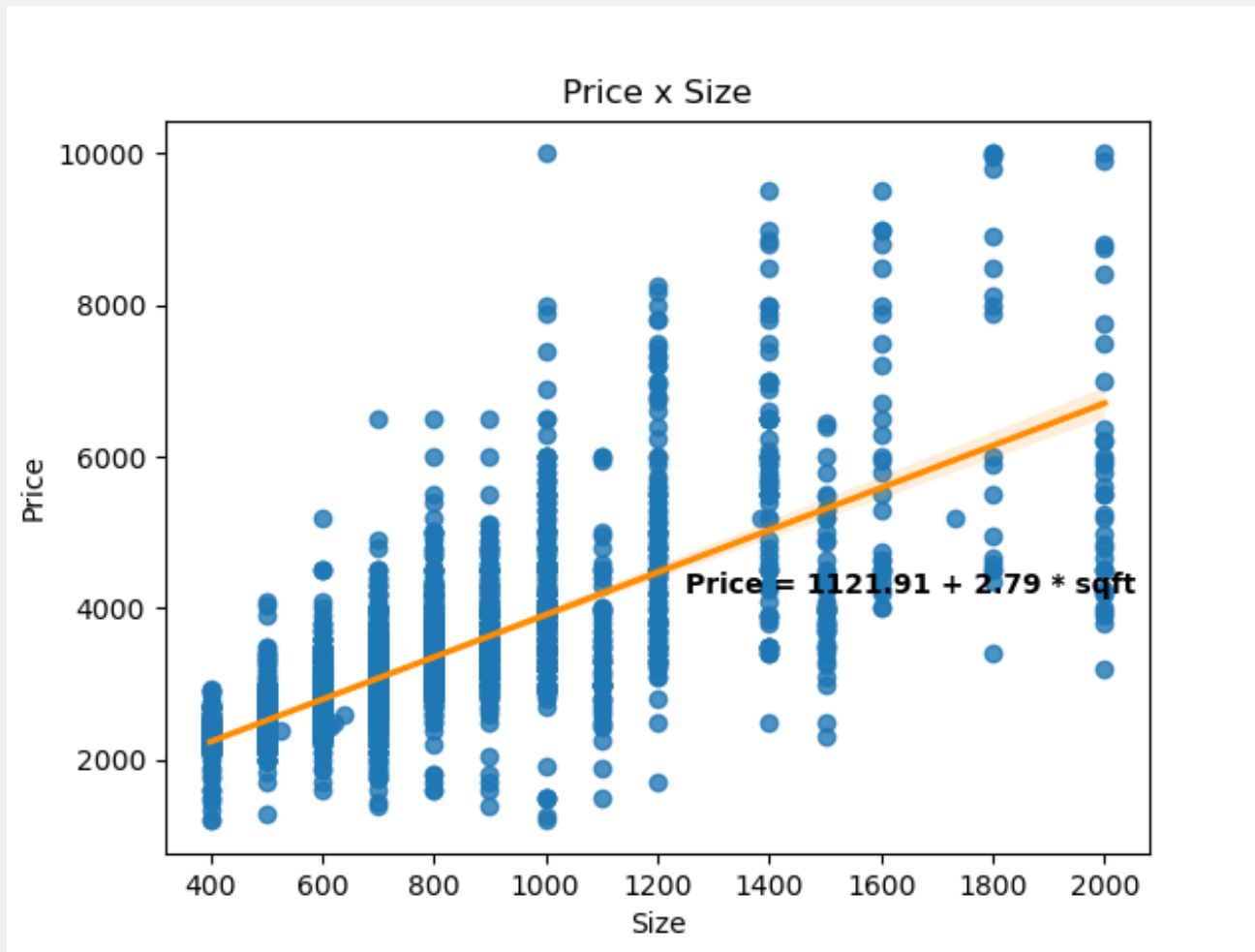Abnormal values (i. e. outliers) were examined and dealt with

05
Only observations for the city of Toronto were kept

02 Findings

- Relationship between price and size

- Price per number of bedrooms

- Availability of units within each region

- Price per sqft for each region

- Most expensive and cheapest neighborhoods
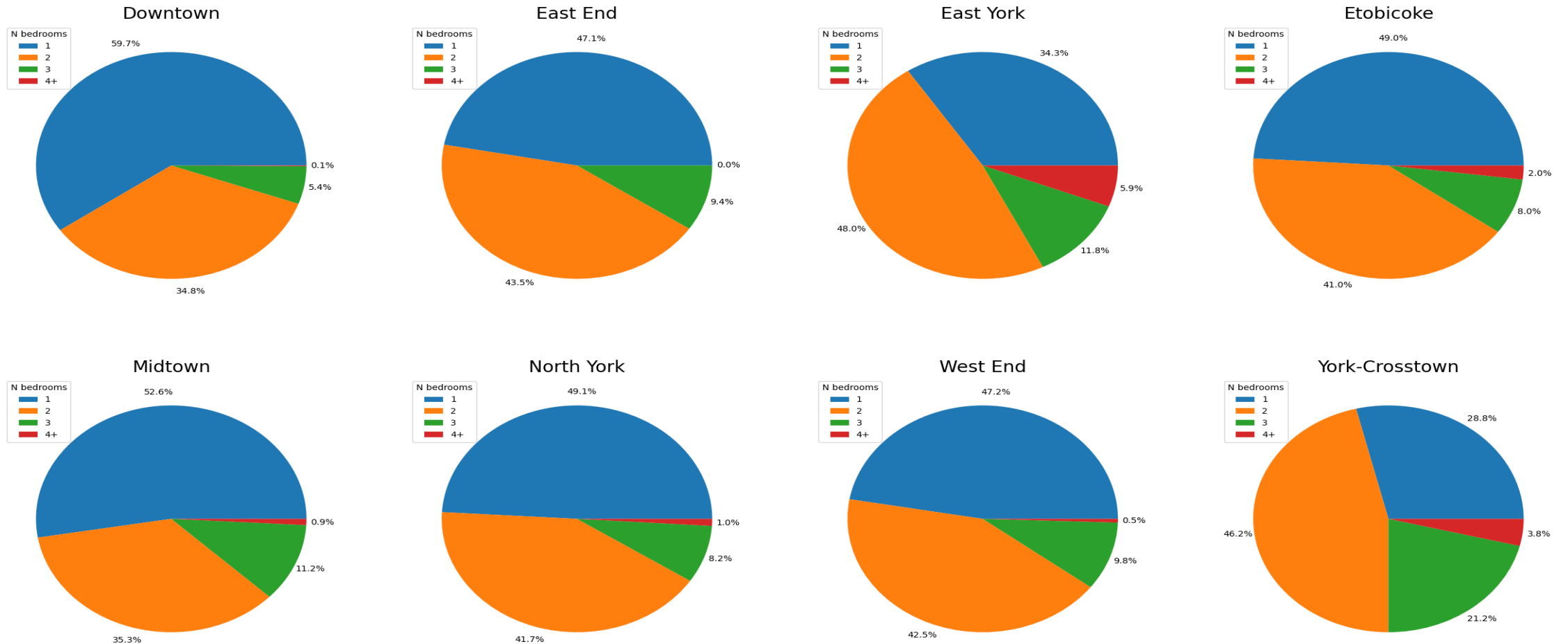
Relationship between price and size

Adjusted R^2
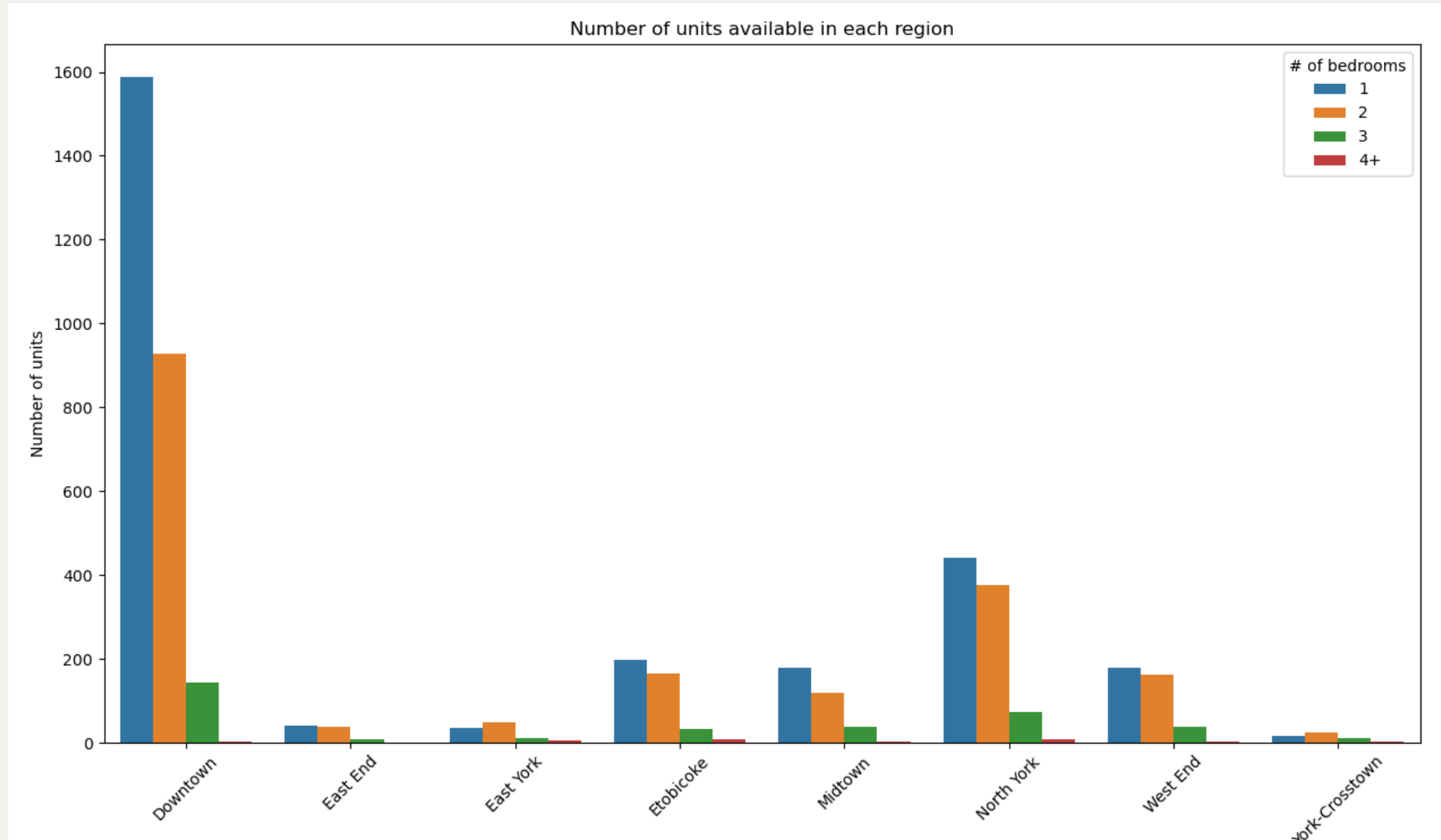0,581

Price per number of bedrooms
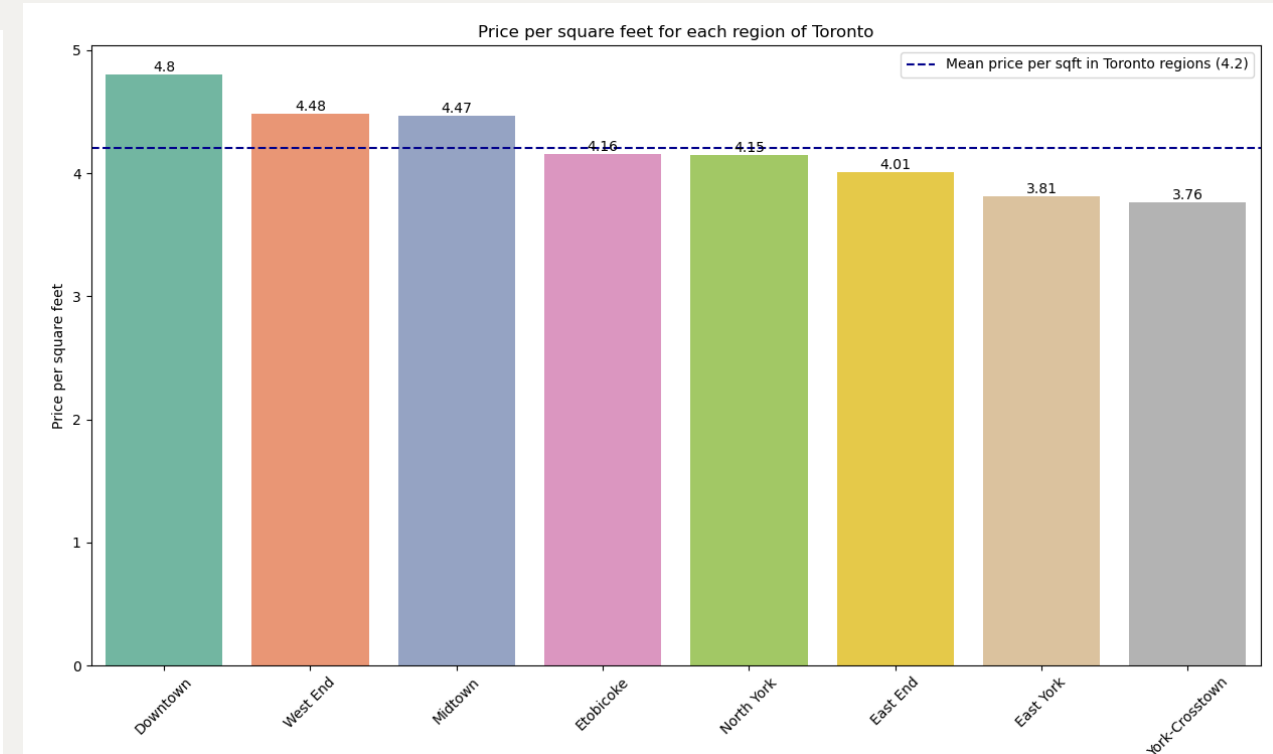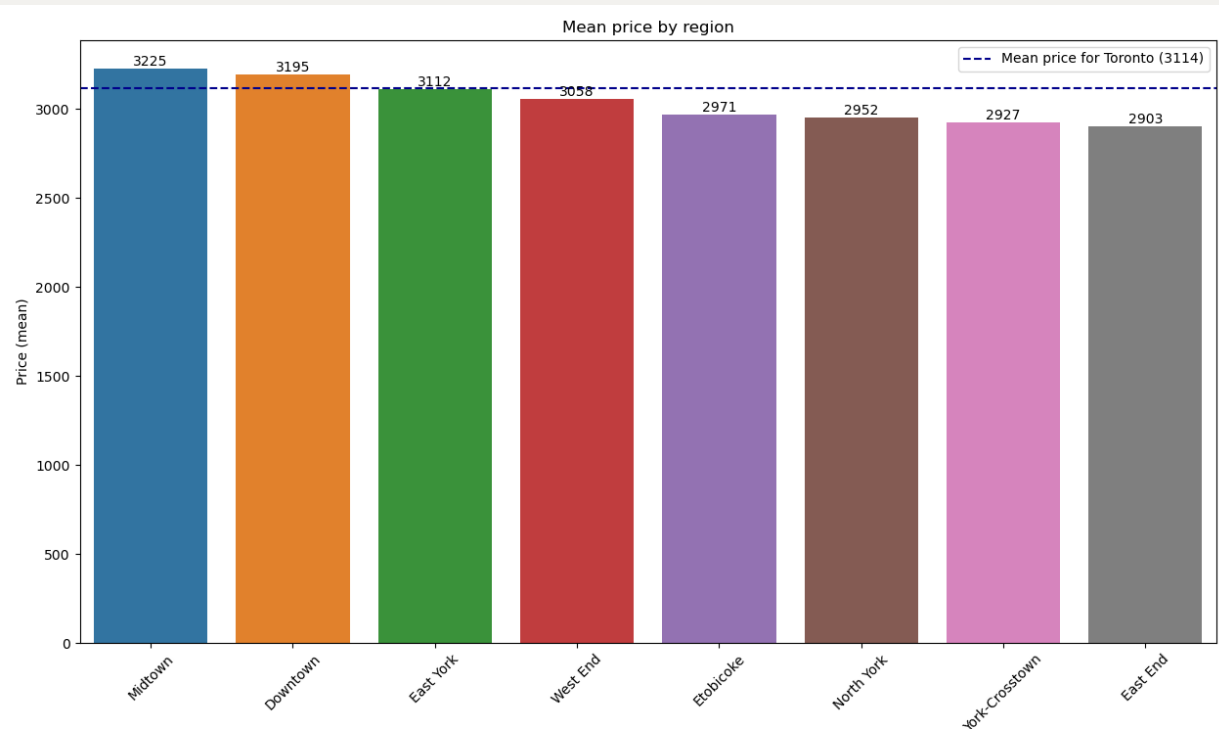
Availability of units within each region

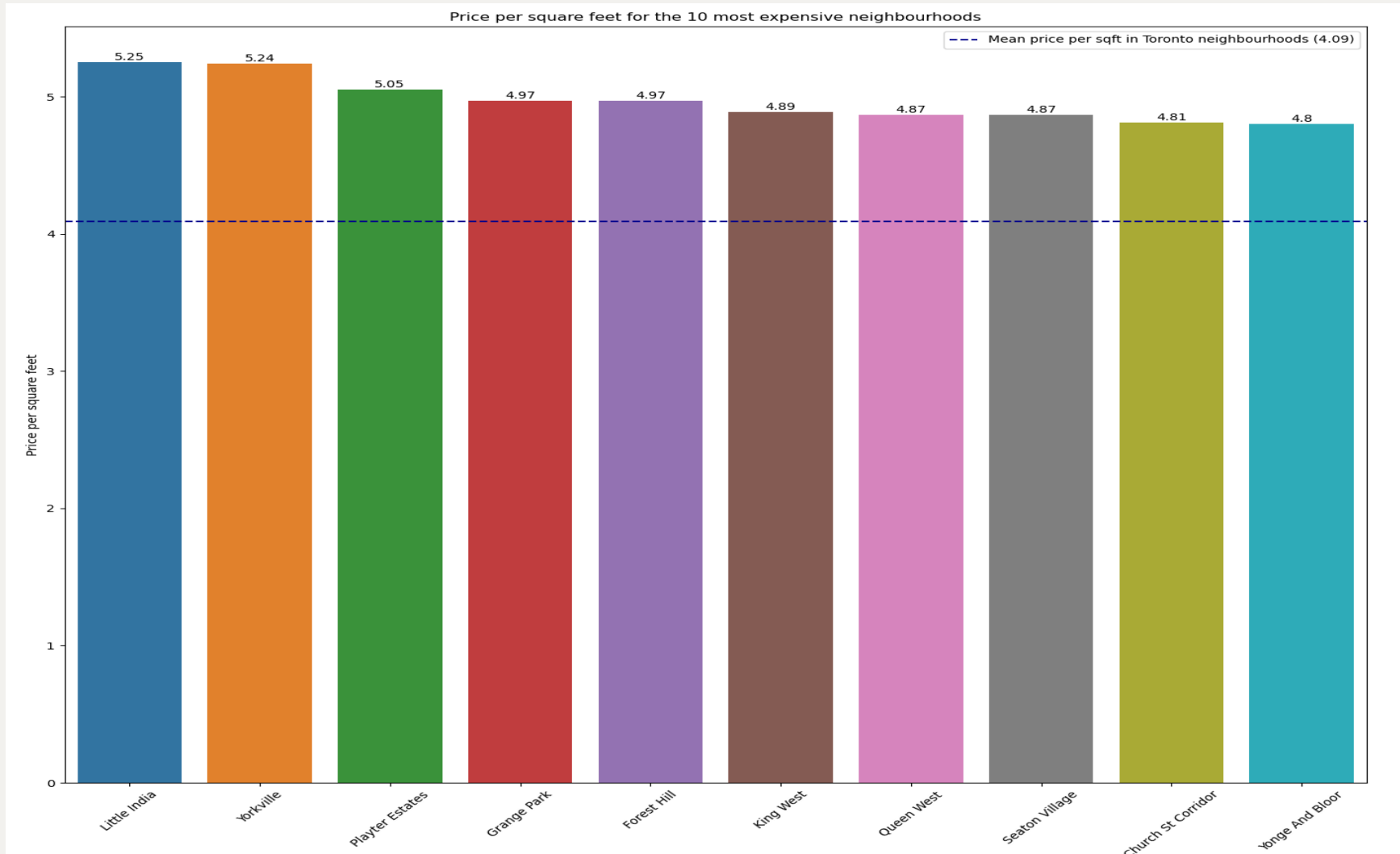Proportion of units available in each region considering the number of bedrooms
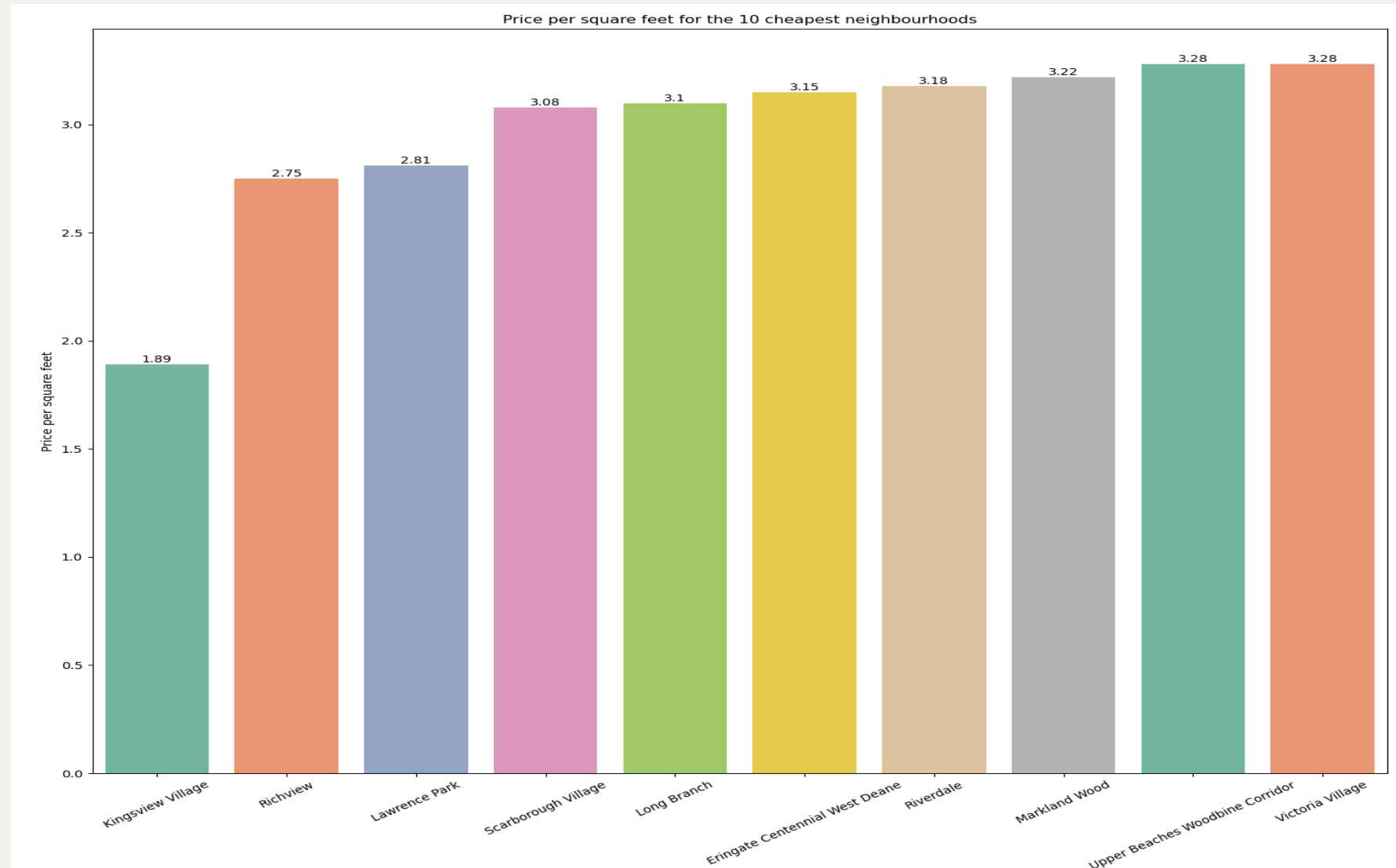
Availability of units within each region

Number of units available in each region

Price per region

Most expensive neighbourhoods

Price per square feet for the 10 most expensive neighbourhoods

Cheapest neighbourhoods
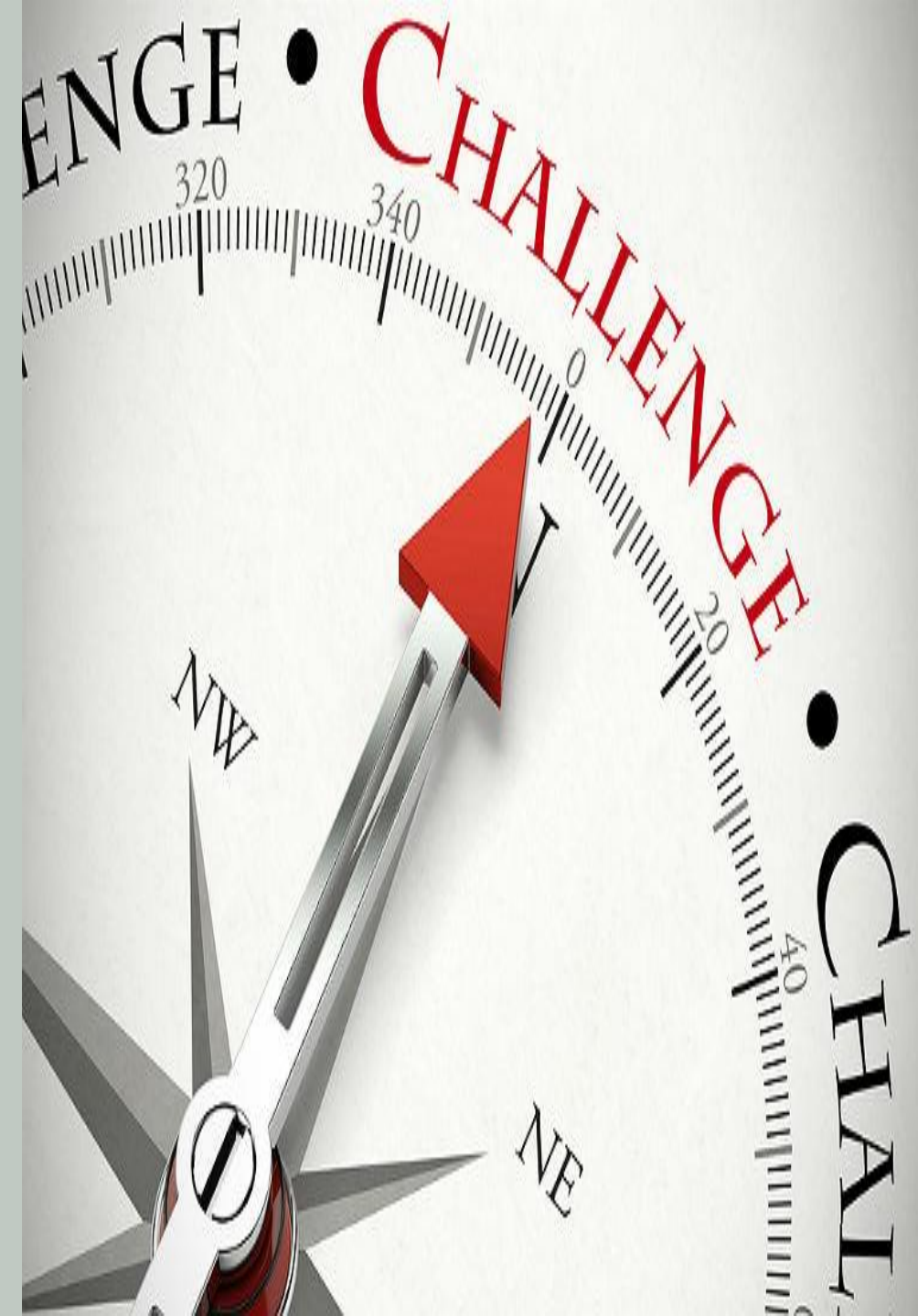

Price per square feet for the 10 cheapest neighbourhoods

04 Challenges

- Dealing with html request denials.

- Taking decision about how to deal with abnormal numbers in the data.

- Narrowing down the analysis to a point of interest.

05 Conclusion and next steps

- Size and location seems to play an important role when it comes to renting price..

- The metric mean price per square feet highlighted here could be used as reference for evaluating renting prices within a given region or neighbourhood and help renters to make better deals.

- The next steps for a project such as this could involve the deployment of an interactive html app for users to explore their personal interests and the exploration of the relationship of other variables in the dataset (for example, number of bathrooms and parking slots).