Project Swarm

Outline

Version 0.3

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Github repository:
https://github.com/iliakass/CEB1260_repo/tree/master/Project

Dataset description:
Parasite reports, based on exterminations within the nineteen boroughs of the City of Montreal, are logged within the dataset. The City of Montreal anonymized the data by using intersections rather than physical addresses for the origin of the reported cases.

The data dictionary includes a unique ID of the reported exterminations, the date of the report, the date of the pre-extermination inspection, the number of exterminations per report with a maximum of four, the date of the first extermination associated to the report, and the date of the last extermination associated to the report. Also, the longitude and latitude coordinates are available for the referenced intersection per report case. The reference number for the borough, its name, and the name of the neighbourhood are also available.

Link for Dataset of interest: See also references
http://donnees.ville.montreal.qc.ca/dataset/declarations-exterminations-punaises-de-lit/resource/6173de60-c2da-4d63-bc75-0607cb8dcb74

Potential problems with dataset:

- The dataset source file needs to be extracted in UTF-8 format in order to have French accents (ex. Saint-Léonard instead of Saint-LÃ©onard)

The chosen dataset has a low degree of reliability for its contents, which are provided by third parties such a parasite management firms. (Ville de Montréal 2019) These contents are not validated by the City of Montreal. (Ville de Montréal 2019)

- Pre-processing will be required to determine whether the date format was entered correctly. Specifically, the following cases may occur.

  o First, it is possible that the month and day were recorded in reverse order by the third party. Although, this possibility cannot be verified except by identifying a pattern and reviewing outliers for months and days.

  o Second, it is possible the latitude and longitude coordinates for street intersections were subject to interpretation, as the third party anonymized the actual locations through the use of street intersections. Specifically, each subset source by the third party may

be using different references for determining whether an event is near one intersection rather than the opposite intersection.

Opportunities

Based on this data, we will pinpoint infestation hotspots. This will provide insight to the City of Montreal on how to better manage problem areas with the goal of reducing, if not removing, the issue.

What can we predict or what potential problems we can solve:

- Identify hotspots
- Identify neighbouring areas that can be potentially affected, with the objective of reducing spreading

What can the City do with this information:

- It can target these areas for awareness campaigns, as a means of prevention. Furthermore, it may increase the frequency of furniture collection for target areas during disposal periods possibly to coincide with a specific season.

Also, it may be possible to observe a seasonality pattern within the reports, where extermination reports may be temperature dependent.

Finally, by observing whether extermination reports are occurring during the start or end of the month, it may be possible to determine whether reports coincide with furniture disposal periods for each borough.

Bibliography

Ville de Montréal. *Déclarations des exterminations de punaises de lit par des gestionnaires de parasites.* February 08, 2019. http://donnees.ville.montreal.qc.ca/dataset/declarations-exterminations-punaises-de-lit (accessed April 09, 2019).

—. *Déclarations exterminations punaises de lit.* January 1, 2019. http://donnees.ville.montreal.qc.ca/dataset/declarations-exterminations-punaises-de-lit/resource/6173de60-c2da-4d63-bc75-0607cb8dcb74 (accessed April 9, 2019).

—. *Nombre de logements traités par quartier de référence.* January 1, 2019. http://donnees.ville.montreal.qc.ca/dataset/declarations-exterminations-punaises-de-lit/resource/81a05c27-2563-4cf5-9c40-ffcc053e05de (accessed April 9, 2019).