# City of Toronto's development applications summary between 2008 and $2021^*$

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28 January 2021

#### Abstract

City of Toronto's application information portal is a web page where you can find information about the new developments in Toronto. The author downloads data set from Open Data Toronto and summarize all the approved applications between 2008 and 2021. For governments, these data provides a overview for them to consider the next step urban planning. For individuals, these data make them aware what infrastructure and new projects are around.

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## 1 Setup workspace and gather data

In this paper, all the analysis are conducted by R statistical programming language. (R Core Team 2020) Through the **opendatatoronto** package, I download the data set for toronto development applications. This package allows users to download the data set in a reproducible way. (Gelfand 2020) The data are also available at this link: https://open.toronto.ca/dataset/development-applications/. In terms of data cleaning, I will use **tidyverse** package. (Wickham et al. 2019) Another two data Visualization packages used in the Exploratory Data Analysis are **ggploat2** (Wickham 2016) and **kableExtra**(Zhu 2020)

## 2 Data

### References

Gelfand, Sharla. 2020. Opendatatoronto: Access the City of Toronto Open Data Portal. https://CRAN.R-project.org/package=opendatatoronto.

<sup>\*</sup>data are available at: https://open.toronto.ca/dataset/development-applications/.

R Core Team. 2020. R: A Language and Environment for Statistical Computing. Vienna, Austria: R Foundation for Statistical Computing. https://www.R-project.org/.

Wickham, Hadley. 2016. *Ggplot2: Elegant Graphics for Data Analysis*. Springer-Verlag New York. https://ggplot2.tidyverse.org.

Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D'Agostino McGowan, Romain François, Garrett Grolemund, et al. 2019. "Welcome to the tidyverse." *Journal of Open Source Software* 4 (43): 1686. https://doi.org/10.21105/joss.01686.

Zhu, Hao. 2020. KableExtra: Construct Complex Table with 'Kable' and Pipe Syntax. https://CRAN.R-project.org/package=kableExtra.