

Toronto Bike Share (Part 1)

Background

Toronto Bike Share (TBS) wants to revamp their product offering. Before they take action, TBS needs to know how customers are using their product. An opportunity they could create is a new pricing models for members and non-members based on current usage patterns - surge pricing by time of day, day of week and location, faster replenishment.

Some things TBS is interested in knowing by the end of the Project (Parts 1 and 2):

Utilization

- Most popular days of the week by month, quarter.
- Average ride time per day of the week, month
- Average daily trips per month
- Popular start and end stations

Bonus

- Insights into the most popular routes

Monetization

Overage - charge \$4 for every 30 min you are over

Types of overage:

Type 1 0-30 minutes

Type 2 31-60 minutes

Type 3 61-90 minutes

Type 4 91-120 minutes

Type 5 120+ minutes

- Total overage trips
- Money made
- Show by type and member/non-member

Bike share pricing - <https://bikesharetoronto.com/pricing/>

Objective

Your goal when working with TBS, as the 1st part of their 2 part project, would be to:

- 1) perform preliminary assessment of the dataset they've provided you and
- 2) determine the quality of the data through surface-level profiling

Deliverable:

Provide a commented (via markdown cells) jupyter notebook of the code you used to perform preliminary profiling of the dataset meeting the objectives stated above. Output cells should contain the output of your code that was run. Markdown cells should contain appropriately bolded section headers (intro, analysis, other logical sections, conclusions, next steps) and explanations of your thought process to show your work. Include your insights and you draw from your examination of your code/data. In your conclusion, communicate what big picture insights you've drawn from your exploration, how you've answered your objectives, and what the next steps TBS can take to revamp their product offering.

Criteria for Completeness*Technical*

- Use of user defined functions to create logical outputs for your other functions
- Use of logical variables to abstract away the need to hardcode values when necessary
- Appropriate styling to code (docstrings, commenting where necessary, appropriate function and variable naming)
- At least 3 uses of the the assert function in the creation of user-defined functions
- Use of appropriate python libraries
- Display appropriate level of output to the notebook (hint: use `.head()` or `.tail()` for the dataframe, not all of it)

Analytical:

- At least 2 suggestions to TBS on what their next steps for the project would be
- At least 3 interesting observations about the dataset