OnTime Documentation

N:\Planning - New File Structure\GIS\VRT\_PythonScripts\Performance\OnTimePerformance\OnTime Documentation.docx

This script reads in RouteMatch On Time Performance Detail Reports and outputs violin graphs and quantile analysis for the system, a specific route, or a specific stop.

Requisites

* [Python 3](https://www.python.org/)
* [Geopandas](http://geopandas.org)
* [Pandas](https://pandas.pydata.org/pandas-docs/stable/)
* [TKInter](https://docs.python.org/3/library/tkinter.html)
* [Shapely](https://shapely.readthedocs.io/en/stable/manual.html)
* [GTFSTK](https://mrcagney.github.io/gtfstk_docs/)
* [Matplotlib](https://matplotlib.org/)
* [Seaborn](https://seaborn.pydata.org/)
* [Jupyter](https://jupyter.org/documentation)/IPython

Usage

1. Export an On Time Performance Detail Report from RouteMatch as a Flat Formatted Report (aka a CSV). Set the Late to “Depart” more than “5” minutes, and the Early to “Depart” more than “1” minutes. Group By “Route.” If you’re trying to use more than a couple weeks at a time, you’ll probably have to filter by route and repeat a few times to create manageable chunks of data.
2. Run the script. A dialog box will open. Find the folder where you have your detail report(s) saved. Make sure there’s nothing else in the folder. **TODO: have the option to select a single file instead of an entire folder.** Filter by route or stop, and select what sort of output you’d like. Select a location to save your files. If you filter by route, a second dialog box will open asking you to select a stop, if desired.
3. If you checked the “Violin Plot” box, the script will output a violin plot all routes, all stops on the selected route, or the selected stop. **TODO: change the output of a single stop to be by trip**
4. If you checked the “Quantiles Table” box, the script will output a table of the runtimes from the previous stop to all stops selected, at the minimum, 10%, 25%, median, 75%, 90%, and maximum quantiles. It also provides a range (max-min), and the Mid 80% (90%-10%) to provide a sense of how consistent the segment is. **TODO: the output on this is generally accurate but there seems to be anomalies. Review code to see if the source of error is RouteMatch, runtime logic, or other.**