Simon

Simon an alternate front-end which integrates with the Trarr traffic simulation model to automate Trarr traffic simulations. It is part of a Bat-Pie system (Bat as in Batch file and Pie as in Python - two scripting languages) and uses a simple approach to run simulations in about a quarter of the time of the Trarr Shell without tying up the user's computer.

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The Simon batch file generates another batch file with the commands to run the Trarr simulation on each file.

The easiest way to setup Simon is making use of formulas in a spreadsheet which can be saved as a batch file. This file is also used to setup economic analysis. (Tip - Familiarise yourself with file naming conventions in economic analysis template ReadMe sheet.)

Huge numbers of simulations can be set up in a spreadsheet and saved as a batch file which uses OptionEditor.py to make Trarr road option files without going through the graphical front-end. OptionEditor only changes barrier line and overtaking line data to ensure it does not corrrupt the road files.

Note: OptionEditor.py has been tested with Python2.7.5 which ships with ArcGis V10.2, and with miniconda. Python needs to be available in the computer's PATH environment variable and your installation might require *python* before the python program name. The make_trf.py and avg_seeds.py modules require the python openpyxl package.

Install Simon files in the Trarr program directory. Save spreadsheet templates to automate the setup and reporting described below in the users template directory (eg C:\Users*user*\AppData\Roaming\Microsoft\Templates).

The proj_ directory must contain the existing road files (*.ROD, *.MLT & .OBS) and Traffic files (.TRF) for all time periods and years. Traffic files can be created with **make_trf.py.**

The **MakeSimonSetup*.xltm*** template has instructions for saving a MakeSimonSetup file. Following is an extract from MakeSimonSetupHW4.bat:

```
Echo Run as %0 ^>%0.log to overwrite log file
..\OptionEditor.py HW4S3a.ROD 6.1 7.4 C HW4S3a_OT002.ROD "Overtaking Lane 2: 6.1-7.4km Eastbound"
..\OptionEditor.py HW4S3b.ROD 33 34 P HW4S3b_OT011.ROD "Overtaking Lane 11: 33.0-34.0km Westbound"
```

Note Limits: Overtaking lane start/stop one decimal place and Description 50 characters.

In Windows explorer (<Win>-E) navigate to proj_ directory and enter *cmd* in Address Bar.

```
C:\TRARR\proj_HW4S32018>..\pypath
C:\TRARR\proj_HW4S32018>MakeSimonSetupHW4 > MakeSimonSetupHW4.log
C:\TRARR\proj_HW4S32018>cd ..
C:\TRARR>Simon proj_HW4S32018\HW4_Sec3b* proj_HW4S32018\HW4S3b* >SimonSaysHW4S3b.bat
```

Note: Filename wildcards can be used to restrict the file set in the simulation.

```
C:\TRARR>SimonSaysHW4S3b > SimonSaysHW4S3b.log
```

Note: SimonSays must be run in the Trarr program directory. Output is recommended to be redirected to a log file as part of a verification process. Use a batch file to run Simon and SimonSays on multiple sections in same session.

Use python **..\avg_seeds.py** or the Trarr excel shell to average the output files.

If you have access to the ***T17_TRARR economic analysis.xltm*** template it can produce summary reports for all options.

Excel, File, New, My templates, … follow instructions in ReadMe sheet.
Save to proj_ directory as type 'Excel Macro-Enabled Workbook (*.xlsm)'

I'm happy to provide any clarification required and would appreciate any usability comments. Feel free to adjust the ReadMe sheet in the Economic Analysis Spreadsheet. Simon is a very simple and efficient system. Be aware - you might find a use case that it will not work with so validate your results. I can provide support to use this system.

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