otoole Documentation

Release unknown

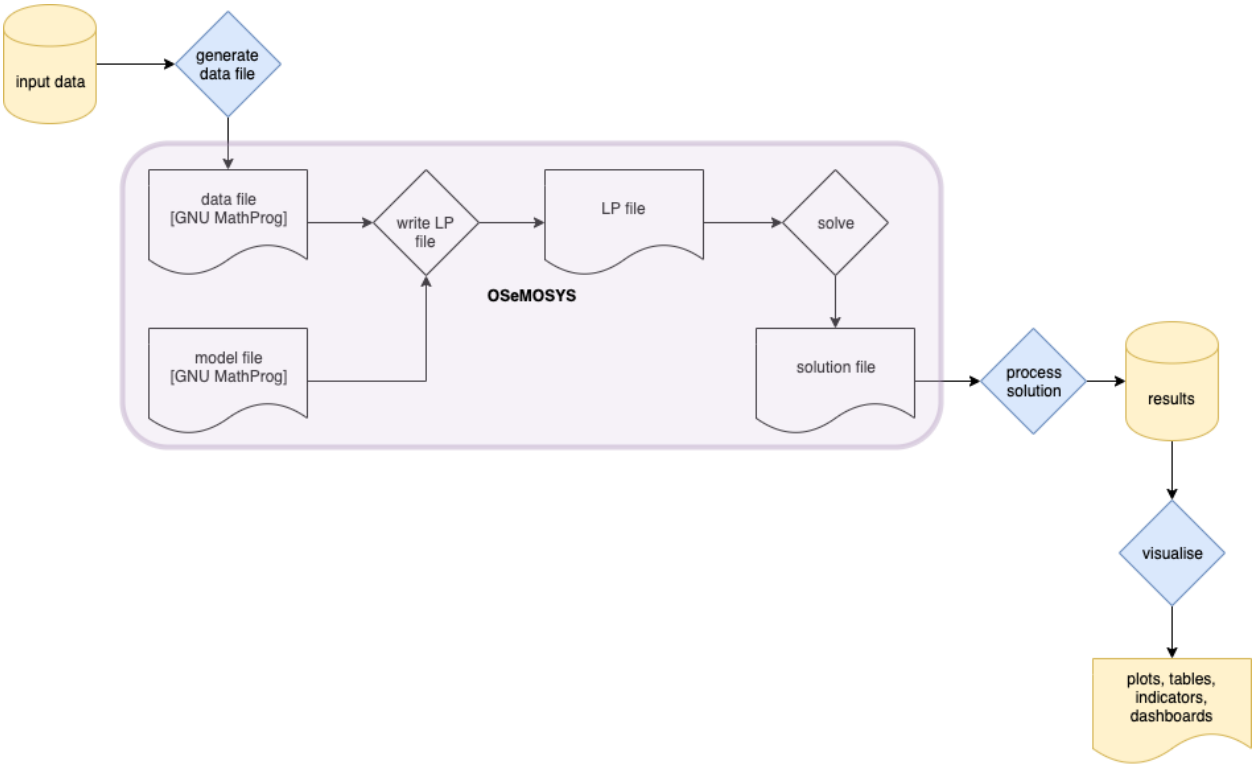
Will Usher

Apr 29, 2021

Contents

otoole is a Python package which provides a command-line interface for users of OSeMOSYS.

The aim of the package is to provide a community resource which centralises the commonly used pre- and post-processing steps around the use of OSeMOSYS.



otoole aims to support different ways of storing input data and results, including csv files, databases, datapackages and Excel workbooks, as well as different implementations of the OSeMOSYS model.

CHAPTER 1

Getting Started

Install `otoole` using pip:

```
pip install otoole
```

Obtain the latest version of OSeMOSYS:

```
otoole setup osemosys
```

Download an OSeMOSYS datapackage and convert it to a modelfile:

```
otoole prep datafile http://github.com/KTH-dESA/model_library/simplicity/datapackage.
↪json ./simplicity.txt
```

Run OSeMOSYS with the modelfile and place the results in a folder:

```
otoole run --modelfile simplicity.txt --datapackage results
```

CHAPTER 2

Contents

2.1 License

The MIT License (MIT)

Copyright (c) 2019 Will Usher

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

2.2 Contributors

- Will Usher <wusher@kth.se>

2.3 Changelog

2.3.1 Version 0.1

- Add CPLEX to csv or CBC solution file conversion script

- Create CSV files in a folder from an excel workbook
- Create a Tabular Data Package from a folder of CSVs
- Create an OSeMOSYS datafile from a Tabular Data Package
- Adds a command line interface to access these tools

2.4 otoole

2.4.1 otoole package

Subpackages

otoole.preprocess package

Submodules

otoole.preprocess.create_datapackage module

otoole.preprocess.excel_to_osemosys module

otoole.preprocess.longify_data module

otoole.preprocess.narrow_to_datafile module

Module contents

otoole.results package

Submodules

otoole.results.convert module

Converts an OSeMOSYS solution file from CPLEX, CBC or GLPK into CBC or CSV format

class otoole.results.convert.**ConvertLine**(*data: List[T], start_year: int, end_year: int, output_format='cbc'*)

Bases: object

Abstract class which defines the interface to the family of convertors

Inherit this class and implement the `_do_it()` method to produce the data to be written out into a new format

Example

```
>>> cplex_line = "AnnualCost         REGION  CDBACKSTOP      1.0     0.0
↪137958.8400384134"
>>> convertor = RegionTechnology()
>>> convertor.convert()
```

(continues on next page)

(continued from previous page)

```
VariableName(REGION,TECHCODE01,2015)        42.69          0\n
VariableName(REGION,TECHCODE01,2017)        137958.84          0\n
```

convert() → List[str]

convert_cbc() → List[str]
Format the data for writing to a CBC file

convert_csv() → List[str]
Format the data for writing to a csv file

class otoole.results.convert.**RegionTechnology**(*data: List[T], start_year: int, end_year: int, output_format='cbc'*)

Bases: *otoole.results.convert.ConvertLine*

class otoole.results.convert.**RegionTimeSliceTechnologyMode**(*data: List[T], start_year: int, end_year: int, output_format='cbc'*)

Bases: *otoole.results.convert.ConvertLine*

otoole.results.convert.**convert_cplex_file**(*cplex_filename: str, output_filename: str, start_year=2015, end_year=2070, output_format='cbc'*)

Converts a CPLEX solution file into that of the CBC solution file

Parameters

- **cplex_filename** (*str*) – Path to the transformed CPLEX solution file
- **output_filename** (*str*) – Path for the processed data to be written to

otoole.results.convert.**process_line**(*line: str, start_year: int, end_year: int, output_format: str*) → List[str]

Processes an individual line in a CPLEX file

A different ConvertLine implementation is chosen depending upon the variable name

Parameters

- **line** (*str*) –
- **start_year** (*int*) –
- **end_year** (*int*) –
- **output_format** (*str*) – The file format required - either `csv` or `cbc`

Module contents

Submodules

otoole.cli module

Module contents

CHAPTER 3

Indices and tables

- genindex
- modindex
- search

Python Module Index

o

Index

C

O

P

R