TARGET set up

Check out the TARGET user manual provided with the model (docs folder). Maybe you have to restart you notebook during the process.

1. Set up the software

Download Java (jdk and jre): https://www.oracle.com/java/technologies/downloads/#java8

If you chose to work with VS Code:

Download VS Code: https://code.visualstudio.com/download

+ WSL extension in VS code: https://code.visualstudio.com/docs/remote/wsl

+ Git to directly clone in VS code: click on source control in VS code  and install Git

2. Clone TARGET

Via the source control in VS code, you can directly download TARGET by cloning the repository. You just need to copy the clone link from: https://bitbucket.org/mothlight/target_java/src/master/

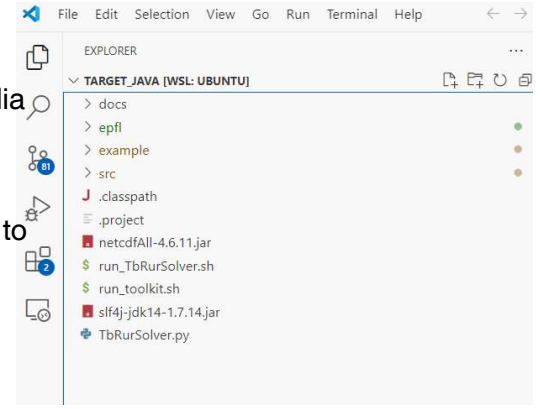
Once TARGET is successfully cloned, you can see it's folder structure in VS Code.

In the "docs" folder, you find the user manual. It can be opened in word.

In the "example" folder, example data of a suburb in Australia is provided. We want to run this example to make sure that everything is working as supposed.

The code of the model is in the "src" folder. You don't need to change or adjust anything in this folder.

The "epfl" does not exist on your computer (yet).

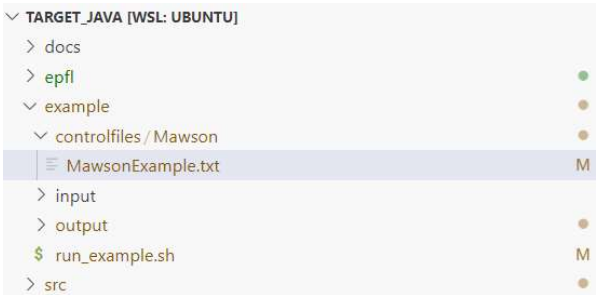


3. Run the example

Simulations can be initiated via the VS Code terminal. But first, the controlfile needs to be adjusted.

You find the controlfile in the "example" folder.

Open the file "MawsonExample.txt" in VS Code.



In the controlfile, several parameters are specified for the simulation. To run the example, only the 3 directories of meteorological input data, land cover input data and desired output need to be adjusted (red). Copy the directory on your computer to the TARGET "example" folder and replace the existing path (green). Be aware of upper and lower case letters and save your changes.

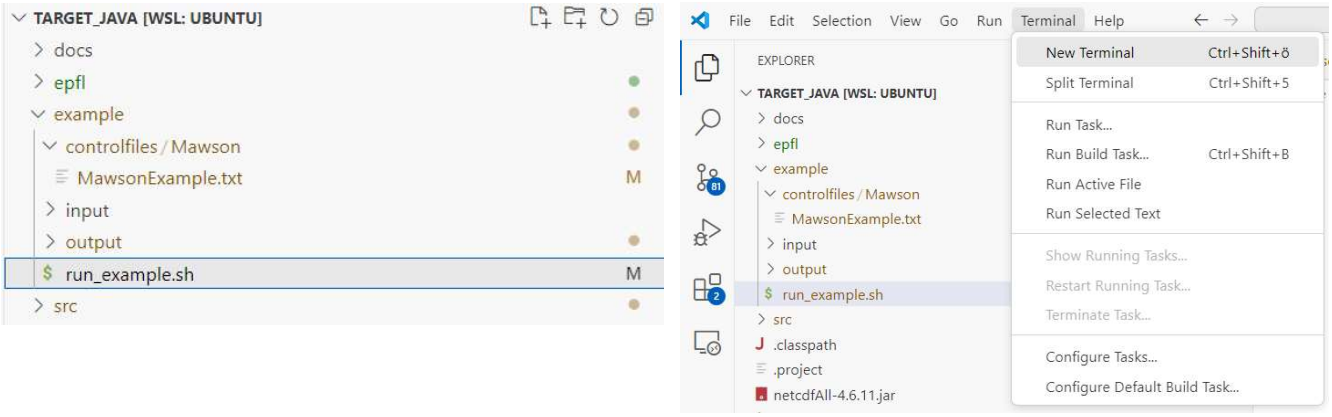
MawsonExample.txt M

example > controlfiles > Mawson > MawsonExample.txt

```
#-----------------------------------------------------------------------------------------------------------
####### Example Main Control File #######
#-----------------------------------------------------------------------------------------------------------
####### INPUTS #######
site_name=Mawson                    # site name (string)
run_name=MawsonExample                              # run name (string)
inpt_met_file=/home/rosa/target_java/example/input/Mawson/MET/Mawson-meteorology_KentTown_30min.csv # input met
inpt_lc_file=/home/rosa/target_java/example/input/Mawson/LC/100m_lc_grid.csv                       #  input la
output_dir=/home/rosa/target_java/example/output/Mawson                # directory output will be saved in
date_fmt=%d/%m/%Y %H:%M                             # format of datetime in input met files
timestep=1800S                                      # define in seconds
include roofs=Y                                     # turn roofs on and off to affect Tac
#-----------------------------------------------------------------------------------------------------------
# dates
#-----------------------------------------------------------------------------------------------------------
SpinUp=2011,2,14,0                # year,month,day,hour   #start date for simulation (should be a minimum of
StartDate =2011,2,15,0               # year,month,day,hour   ## the date/time for period of interest (i.e. b
EndDate =2011,2,16,18                # year,month,day,hour   # end date for validation period
######################

mod_ldwn=N            # use modelled ldown
lat=-37.8136
domainDim=32,31
```

To initiate the simulation, open the "run_example.sh" file in VS Code and open a Terminal



Copy and execute the commands from the "run_example.sh" file into your terminal. The "cd" command allows you to change the current directory in your terminal. By copying the commands, you first want to go to the "Target" folder within your model and then execute command **(1)**, before going back to the "src" folder and execute command **(2)**.

MawsonExample.txt M | *run_example.sh M*

example > $ run_example.sh

Commands with # don't need to be executed

```
#cd ..
cd src
#sh compile_code.sh

cd Target
(1) javac -cp ../../netcdfAll-4.6.11.jar:../../slf4j-jdk14-1.7.14.jar:. *.java HTC/*.java

cd ..
(2) java -cp ../netcdfAll-4.6.11.jar:. Target.RunToolkit ../example/controlfiles/Mawson/MawsonExample.txt
```

If your model did run successfully, a file named “MawsonExample.nc” should be created in the output folder of the example and you should see something like the following in your terminal after executing **(2)**:

```
Wed Feb 16 12:00:00 CET 2011 120
Wed Feb 16 12:30:00 CET 2011 121
Wed Feb 16 13:00:00 CET 2011 122
Wed Feb 16 13:30:00 CET 2011 123
Wed Feb 16 14:00:00 CET 2011 124
Wed Feb 16 14:30:00 CET 2011 125
Wed Feb 16 15:00:00 CET 2011 126
Wed Feb 16 15:30:00 CET 2011 127
Wed Feb 16 16:00:00 CET 2011 128
Wed Feb 16 16:30:00 CET 2011 129
```

You can display the output data in QGIS. Make sure to choose the variable you’re interested in (air_temp). The ouput is a multidimensional raster file that contains the simulated air temperature for each time step for the whole domain.

Problems

Errors when executing command **(1)** without solution:

- javac not found
- packages like ucar etc. not found

Problems with MacOS