



Previous: (3b) Basic Python Coding



Next: (5a) A Blending Problem

(4) Installing PuLP at Home

PuLP is a free open source software written in Python. It is used to describe optimisation problems as mathematical models. PuLP can then call any of numerous external LP solvers (GLPK, CPLEX, XPRESS etc) to solve this model and finally display the solution.

In your course you will solve many mathematical programmes using PuLP. These mathematical programmes will tell you such varied things as:

- The mix of ingredients to use to provide a nutritious can of cat food whilst minimising costs
- The price and production quantity for a surfboard shop to maximise profit
- The number of crates of beer to ship from breweries to pubs to minimise the shipping cost

The old version of PuLP is available on the internet, but an upgraded version of PuLP can be freely obtained from here, which is the version you will be using in this course.

To install:

1. Extract the PuLP-1.10.zip folder to a suitable location (such as the desktop - the folder will be no longer required after installation)
2. Open a command prompt by clicking "Run" in the Start Menu, and type `cmd` in the window and push enter.
3. Navigate to the extracted PuLP-1.10 folder with the setup file in it. [Do this by typing `cd foldername` at the prompt, where `cd` stands for current directory and the `foldername` is the name of the folder to open in the path already listed to the left of the prompt. To return back to a root drive, type `'cd C:\'`]
4. Type `setup.py install` at the command prompt. This will install all the PuLP functions into Python's callable modules.

Since PuLP is still under development, the following procedures also need to be carried out:

1. Open the `src` folder in the PuLP-1.10 folder and copy the `pulp.cfg` config file. (Two files may appear to be called `pulp`, but one is a python file and one is a config file, as shown by the file extensions)
2. Find the folder which the pulp package files are located inside, within Python's files :
`C:/.../Python25/Lib/site-packages/pulp`
3. Paste the `pulp.cfg` inside this directory, with the other pulp files

The PuLP function library is now able to be imported from any python command line! Go to IDLE or PyDev and type `from pulp import *` to load in the functions. (You need to re-import the functions each time after you close the GUI)

PuLP is written in a programming language called Python, and to use PuLP you must write Python code to describe your optimisation problem.



Previous: (3b) Basic Python Coding



Next: (5a) A Blending Problem