Joshua Woodruff – Optimized Financial Systems

OPTIMIZED FINANCIAL SYSTEMS

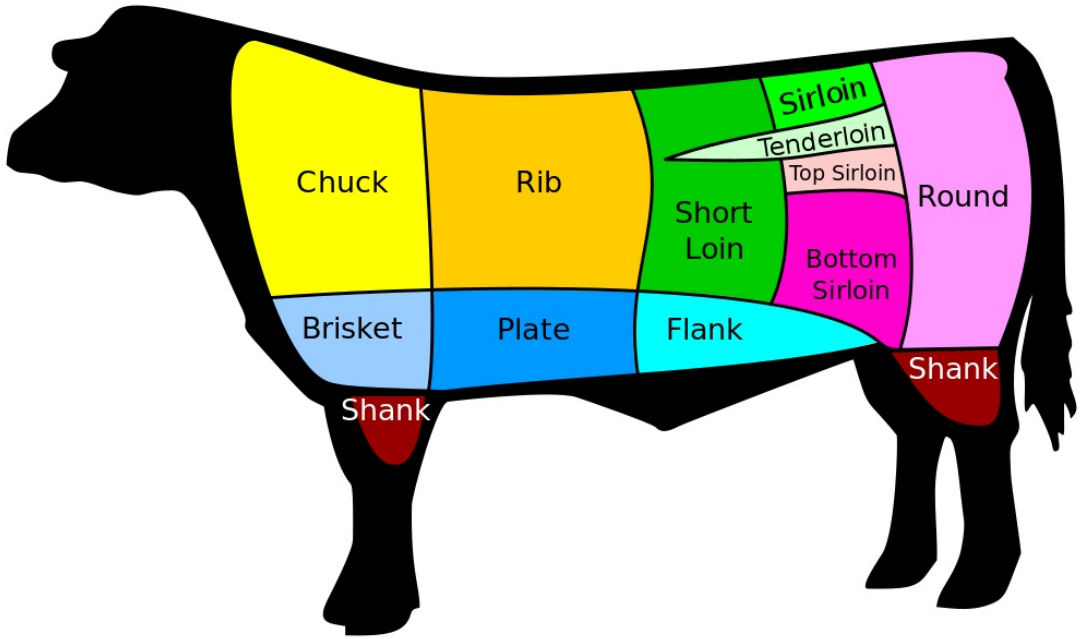
A Quick Introduction to DOOPL

DOOPL is a new python package to run OPL models from python

- In this section we will model and solve a small MIP using both python and OPL
- We will create the data in python
- We will create the model in OPL
- We will retrieve the results back into python

Problem Description

- A typical problem in Texas is how to distribute the cuts of beef with your neighbors when you buy an entire steer.



Problem Description, Cont.

- Each neighbor has a financial commitment
- Each neighbor has preferences for cuts
- The entire steer must be allocated

Imports


```
Import doopl.factory as oplf

import pandas

import pdb
```

Load the data

- We will be using the pandas package to fetch the data.
- For the doopl package, it is recommended to use a pandas DataFrame to load all tables

```
with oplf.create_opl_model(model = 'butchering.mod') as opl:
     opl.set_input('cutsInfo',pandas.read_excel(
     'butchering.xlsx',sheet_name='cuts'))
```

…

Export the data (optional), tell OPL to be quiet, run the model, and get the results

- To help work with the OPL model, doopl can generate a .dat file.

```
opl.setExportExternalData("butchering.dat")
opl.mute()
opl.run()
results = opl.get_table('results')
```