

Frequently Asked Questions for Homework 1

1. What k to use for Q1 and Q2?

In Q1, solve for $k = 15$, and report results. Repeat for Q2, but using 2020 population data.

2. How to do Q3? What is glide path solution?

Find the $k = 5$ solution using 2011 population data, and $k = 15$ solution using 2020 population data. (In the paper, it is said that we can only open 5 locations in 2011 and 15 locations in 2020.) Check whether there is glide path property. Having glide path property means if one branch is selected to open in 2011, it must also be selected in 2020. That is, the set of 2011 locations are included in 2020 locations. Answer yes if there is glide-path property, or no otherwise.

3. Where can I find data? Will it be posted?

Searching and cleaning data is part of this homework. Please do a google search for population data. For county adjacency data, it can be found at

<https://www.census.gov/geographies/reference-files/totals/geography/data.html#geo/country-adjacency.html>.

4. Can I use Python?

You may use Python for data cleaning, but Julia must be used to solve the MIP (using JuMP).

5. I have issues with CPLEX installation on Julia.

Please take a look at the installation section on CPLEX.jl. <https://github.com/jump-dev/CPLEX.jl#installation> You will need to set `ENV["CPLEX_STUDIO_BINARIES"]` to point to your CPLEX installation before installing CPLEX.jl.

Windows: make sure you do not install CPLEX to a path containing SPACE or other non-ASCII characters. Do not use "Program Files".

Mac: If you are using Big Sur or Monterey, you should use CPLEX version at least 20.10 (or above). CPLEX is usually installed under `/Applications/CPLEX_StudioXXXX/cplex/bin/x86-64_osx` where XXXX is the version number (e.g. 201, 221). Apple's M1 chip laptop is not supported for now.

If you run into problems, please send an email to TA.

6. What should I submit?

Please submit answers to each questions along with your code to Blackboard. Only one submission per group is needed.

Important: Please be sure to have your name on the group signup sheet!

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