1)Download all files in the GitHub in the same folder

https://github.com/BeatrizCarelyLuna/Co-ocurrence-networks

2)Programs in octave to get cooccurrences

Inputs: Datacamera.txt, Months.txt, Data.txt

Outputs needed for python: IAR2, network.txt

In our programs, the input data are exclusively numbers, for this reason, it is necessary to assign a consecutive, ascending integer number to each station, from 1 to *ns*, and a consecutive, ascending integer number to each species, from 1 to *ne*, see the file Data.txt

We need three files: 1) Datacamera.txt, which contains the number assigned to a certain camera-trap station as well as the installation and retirement dates of the cameras, day, month, and year, respectively; 2) Months.txt contains the number of days in each month, in the year in which the cameras operated; 3) Data.txt, indicates the date in which species were recorded, contains the columns numbers of codes of camera-trap station, number of specie and date in the form day, month and year, these occurrence days should be contained with those in Fechascamaras.txt

These files do not need the names of the columns.

It is necessary to place the three files in the same folder, as well as the cooccurrence.m program

There is a part of the program where some manual data are introduced. For the example shown, this data is already fulfilled. Also, we include an example of output files IAR2 and network.txt

In Octave, run the program coocurrence.m. In the command window, you will not see anything in principle, but when you see something like this:

```
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
ans = 0
-- less -- (f)orward, (b)ack, (q)uit
```

Press the **q** button from your keyboard.

In the folder you will see several files. The time of the process depends on the computer resources. The files we need to copy in Excel to use in Python are IAR2 and network.txt

Programs in Python to get network

Inputs: Example_red.xlsx

Outputs: network figure

Prepare an Excel file named "Example_red.xlsx" with one sheet named “vertices” and another called “edges”.

The sheet “vertices” contains the columns “nombre”, “clave”, “IAR”, the first two columns must be fulfilled with your original data, that is to say, species names and code for every specie that you assigned to introduce in octave, the last column must be taken from the output octave file IAR2.

The sheet “edges” contains the columns “In”, “Out” and “Day”, this must be copied from the first three columns of the file network.txt. The names of the columns must be the same as the ones required in the Python program.

The output of the Python program returns a PNG file with the name entered manually in the program. For the included example, the resulting PNG file is provided. If only the network figure is required, only the Python program needs to be run.