

1.10.3 Plant–Pollinator Networks

Saavedra and Stouffer (2013) studied several plant–pollinator networks. These can be represented as rectangular matrices where the rows are pollinators, the columns plants, a 0 indicates the absence and 1 the presence of an interaction between the plant and the pollinator.

The data of Saavedra and Stouffer (2013) can be found in the directory CSB/unix/data/Saavedra2013.

1. Write a script that takes one of these files and determines the number of rows (pollinators) and columns (plants). Note that columns are separated by spaces and that there is a space at the end of each line. Your script should return

```
$ bash netsize.sh ../data/Saavedra2013/n1.txt
Filename: ../data/Saavedra2013/n1.txt
Number of rows: 97
Number of columns: 80
```

2. [Advanced]¹⁸ Write a script that prints the numbers of rows and columns for each network:

```
$ bash netsize_all.sh
../data/Saavedra2013/n10.txt 14 20
../data/Saavedra2013/n11.txt 270 91
../data/Saavedra2013/n12.txt 7 72
../data/Saavedra2013/n13.txt 61 17
...
```

LIT 1

```
MINGW64 C:\Users\LENOVO\Videos\BIOINFOR\CSB-master\unix\data\Saavedra2013
LENOVO@allan MINGW64 ~/Videos/BIOINFOR/CSB-master/unix/data/Saavedra2013 (master)
$ nano nfyf.sh
LENOVO@allan MINGW64 ~/Videos/BIOINFOR/CSB-master/unix/data/Saavedra2013 (master)
$ ls
n1.txt n12.txt n15.txt n18.txt n20.txt n23.txt n26.txt n29.txt n31.txt n34.txt n37.txt n4.txt n42.txt n45.txt n48.txt n50.txt n53.txt n56.txt n59.txt n8.txt
n10.txt n13.txt n16.txt n19.txt n21.txt n24.txt n27.txt n3.txt n32.txt n35.txt n38.txt n40.txt n43.txt n46.txt n49.txt n51.txt n54.txt n57.txt n6.txt n9.txt
n11.txt n14.txt n17.txt n2.txt n22.txt n25.txt n28.txt n30.txt n33.txt n36.txt n39.txt n41.txt n44.txt n47.txt n5.txt n52.txt n55.txt n58.txt n7.txt nfyf.sh
LENOVO@allan MINGW64 ~/Videos/BIOINFOR/CSB-master/unix/data/Saavedra2013 (master)
$ cat nfyf.sh
echo 'numero de filas'
wc -l $1.txt
echo 'numero de columnas'
cat $1.txt | head -n 1 | tr -d ' ' | wc -c
LENOVO@allan MINGW64 ~/Videos/BIOINFOR/CSB-master/unix/data/Saavedra2013 (master)
$ bash nfyf.sh n1
numero de filas
97 n1.txt
numero de columnas
81
LENOVO@allan MINGW64 ~/Videos/BIOINFOR/CSB-master/unix/data/Saavedra2013 (master)
$ bash nfyf.sh n20
numero de filas
18 n20.txt
numero de columnas
8
LENOVO@allan MINGW64 ~/Videos/BIOINFOR/CSB-master/unix/data/Saavedra2013 (master)
$ bash nfyf.sh n52
numero de filas
33 n52.txt
numero de columnas
8
LENOVO@allan MINGW64 ~/Videos/BIOINFOR/CSB-master/unix/data/Saavedra2013 (master)
$ bash nfyf.sh n38
numero de filas
51 n38.txt
numero de columnas
100
LENOVO@allan MINGW64 ~/Videos/BIOINFOR/CSB-master/unix/data/Saavedra2013 (master)
$ bash nfyf.sh n25
numero de filas
17 n25.txt
numero de columnas
17
LENOVO@allan MINGW64 ~/Videos/BIOINFOR/CSB-master/unix/data/Saavedra2013 (master)
$ bash nfyf.sh n15
numero de filas
38 n15.txt
numero de columnas
12
LENOVO@allan MINGW64 ~/Videos/BIOINFOR/CSB-master/unix/data/Saavedra2013 (master)
$
```

LIT 2

```
LENOVO@allan MINGW64 ~/videos/BIOINFOR/CSB-master/unix/data/Saavedra2013 (master)
$ nano bucle.sh

LENOVO@allan MINGW64 ~/videos/BIOINFOR/CSB-master/unix/data/Saavedra2013 (master)
$ ls
bucle.sh  n11.txt  n14.txt  n17.txt  n2.txt   n22.txt  n25.txt  n28.txt  n30.txt  n33.txt  n36.txt  n39.txt  n41.txt  n44.txt  n47.txt  n5.txt   n52.txt  n55.txt  n58.txt  n7.txt   nfyc.sh
n1.txt    n12.txt  n15.txt  n18.txt  n20.txt  n23.txt  n26.txt  n29.txt  n31.txt  n34.txt  n37.txt  n4.txt   n42.txt  n45.txt  n48.txt  n50.txt  n53.txt  n56.txt  n59.txt  n8.txt
n10.txt   n13.txt  n16.txt  n19.txt  n21.txt  n24.txt  n27.txt  n3.txt   n32.txt  n35.txt  n38.txt  n40.txt  n43.txt  n46.txt  n49.txt  n51.txt  n54.txt  n57.txt  n6.txt   n9.txt

LENOVO@allan MINGW64 ~/videos/BIOINFOR/CSB-master/unix/data/Saavedra2013 (master)
$ cat bucle.sh
for i in *.txt
do
    cat $1.txt | head -n 1 | tr -d ' ' | wc -c
    wc -l $1.txt
done

LENOVO@allan MINGW64 ~/videos/BIOINFOR/CSB-master/unix/data/Saavedra2013 (master)
$ bash bucle.sh
```