

How to run an R-Shiny application

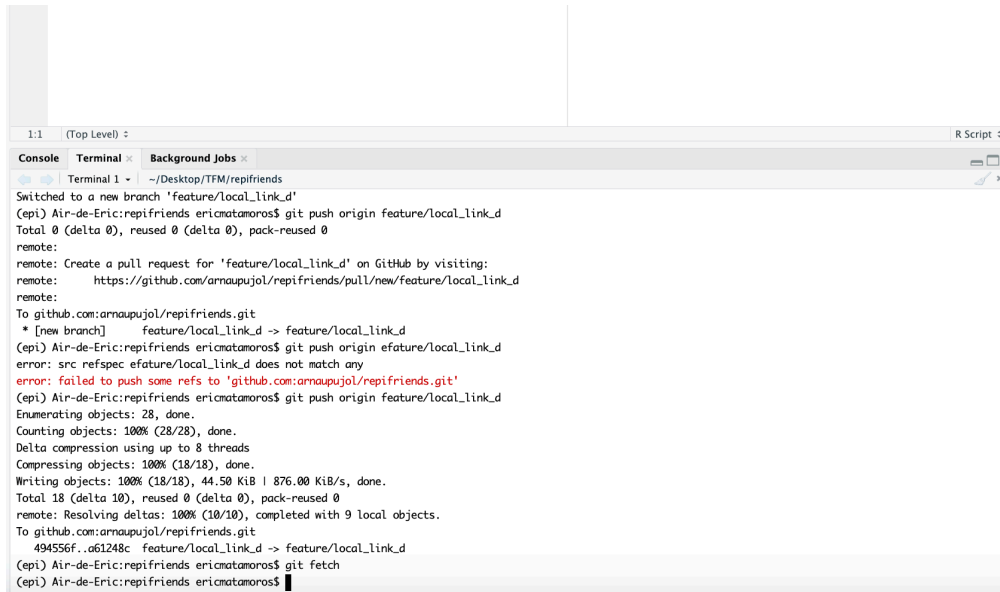
1. Install Git, R & RStudio from the official servers.

R: <https://cran.r-project.org/bin/windows/base/>

RStudio: <https://posit.co/download/rstudio-desktop/>

Git: <https://git-scm.com/downloads>

2. Open the RStudio application and access the **Terminal Tab** as showed in the image below. In case the Tab is not available, click on **View -> Move Focus to Terminal**.



```
1:1 (Top Level) : R Script :
Console Terminal Background Jobs
Terminal 1 ~ /Desktop/TFM/repifriends
Switched to a new branch 'feature/local_link_d'
(epi) Air-de-Eric:repifriends ericmatamoros$ git push origin feature/local_link_d
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'feature/local_link_d' on GitHub by visiting:
remote:   https://github.com/arnaupujol/repifriends/pull/new/feature/local_link_d
remote:
To github.com:arnaupujol/repifriends.git
 * [new branch]   feature/local_link_d -> feature/local_link_d
(epi) Air-de-Eric:repifriends ericmatamoros$ git push origin feature/local_link_d
error: src refspec feature/local_link_d does not match any
error: failed to push some refs to 'github.com:arnaupujol/repifriends.git'
(epi) Air-de-Eric:repifriends ericmatamoros$ git push origin feature/local_link_d
Enumerating objects: 28, done.
Counting objects: 100% (28/28), done.
Delta compression using up to 8 threads
Compressing objects: 100% (18/18), done.
Writing objects: 100% (18/18), 44.50 KiB | 876.00 KiB/s, done.
Total 18 (delta 10), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (10/10), completed with 9 local objects.
To github.com:arnaupujol/repifriends.git
 494556f..a61248c feature/local_link_d -> feature/local_link_d
(epi) Air-de-Eric:repifriends ericmatamoros$ git fetch
(epi) Air-de-Eric:repifriends ericmatamoros$
```

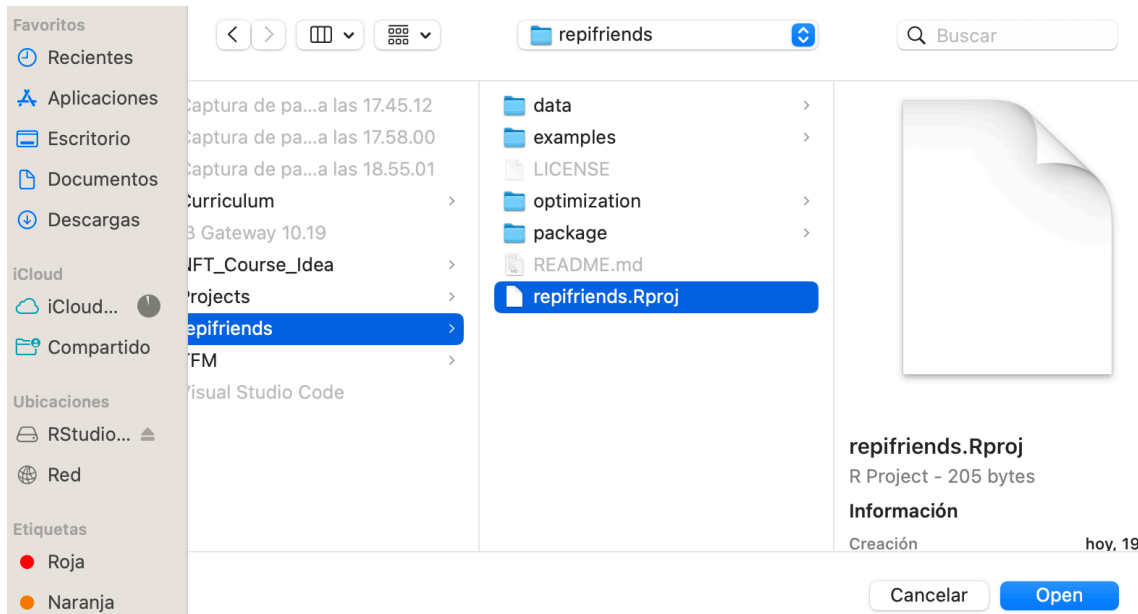
3. Clone the Github project or EpiFRlenDs (<https://github.com/arnaupujol/repifriends>).

To do that type in the terminal ***git clone git@github.com:arnaupujol/repifriends.git*** if you are using SSH or ***git clone https://github.com/arnaupujol/repifriends.git*** if using HTTP

*Note: Before cloning the project, make sure you are in the directory you want to be or moved to the specific folder by leveraging Bash commands ***

```
(base) Air-de-Eric:~ ericmatamoros$ ls
Applications  Documents      Jts            MATRICULA.pdf  Music          Public
Desktop       Downloads     Library        Movies          Pictures        miniconda3
(base) Air-de-Eric:~ ericmatamoros$ cd Desktop/
(base) Air-de-Eric:Desktop ericmatamoros$ git clone git@github.com:arnaupujol/repifriends.git
Cloning into 'repifriends'...
remote: Enumerating objects: 630, done.
remote: Counting objects: 100% (75/75), done.
remote: Compressing objects: 100% (57/57), done.
remote: Total 630 (delta 35), reused 38 (delta 18), pack-reused 555
Receiving objects: 100% (630/630), 631.74 KiB | 297.00 KiB/s, done.
Resolving deltas: 100% (347/347), done.
```

4. We will open the Project (.Rproj) file. In the Rstudio go to **File -> Open Project**. Then go to the directory where your project has been cloned and then select the **repifriends.Rproj** file



5. Now the *EpiFRlenDs* package has been cloned, but we are not in the right Github Branch. To move there, we will type in the Terminal **git checkout feature/app_design_v1**

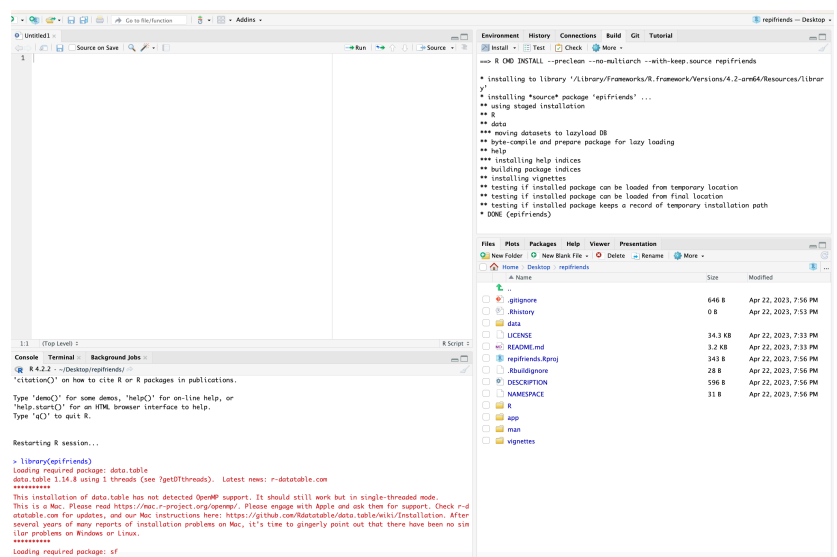
```
(base) Air-de-Eric:repifriends ericmatamoros$ git checkout feature/app_design_v1
branch 'feature/app_design_v1' set up to track 'origin/feature/app_design_v1'.
Switched to a new branch 'feature/app_design_v1'
(base) Air-de-Eric:repifriends ericmatamoros$
```

5. We are ready to install the package, we need to install it. In order to do so we will build it and the install through:

- **Build -> Build Source Package** : Create the binaries needed to install it.
- **Build -> Install Package** : Install the binaries

In the Top-Right Panel the Build menu will start prompting some text until you will see **DONE (epifriends)**.

Furthremore, the package will be automatically loaded in the Console as seen in the Bottom-Left Panel through `library(epifriends)`.

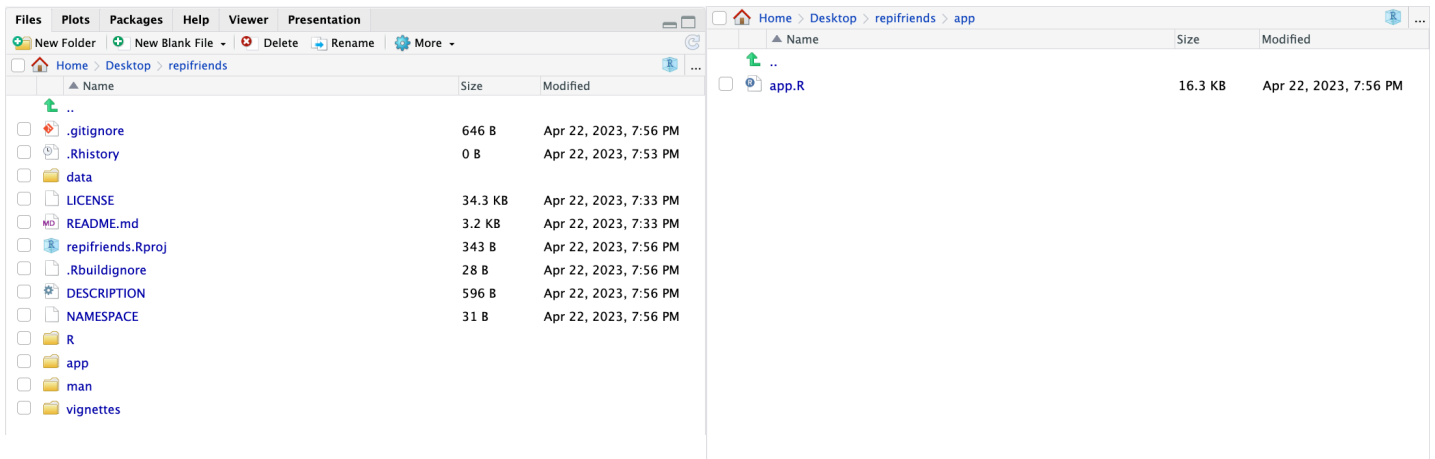


If none of the two things above throw an error it means that the package has been successfully created.

6. In the Bottom-Right Panel you a Tab called “**Files**” that specifies the content of the package. The **RShiny application is found in the app/ folder**, so we will click on it and **open the app.R file**.

Image Left. Display of the content of repifriends package

Image right: Display of the content of the app/ folder



7. Click on **Run App** to automatically start the application. Next to Run App there is a sliding window and the “**Run External**” option **should be marked** so that the application runs in your browser.



8. EpiFRlenDs will open in the **browser** and you can proceed with using it.

EpiFRlenDs

Distribution Analysis Temporal Analysis

Min. number of neighbors: 2

Select linking distance: 0.05 0.1 0.2

How to deal with missing data: Remove

Treatment of coordinates: Longitude/Latitude

EPSG number for the projection to use: 32736

Load data (CSV format): Browse... No file selected

Load Data Run Spatial Analysis

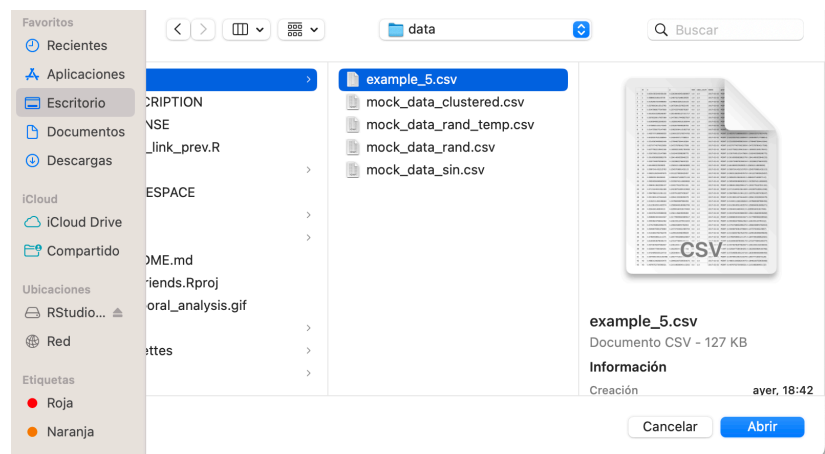
Data Distribution Summary-EpiFRlenDs Clusters-EpiFRlenDs

Instructions to use EpiFRlenDs

1. Specify the **parameters** desired based on your data.

Note: If any parameter is specified by the user it will use the default ones that appear in the screen.

2. Click in **Browse** to search for the CSV file of your data. Then open it.



3. Click on **Load Data Button** and the data will be automatically displayed in the **Data Panel**.

Min. number of neighbors: 2

Select linking distance: 0.05 0.1 0.2

How to deal with missing data: Remove

Treatment of coordinates: Longitude/Latitude

EPSG number for the projection to use: 32736

Load data (CSV format): Browse... example_5.csv Upload complete

Load Data Run Spatial Analysis

Data	Distribution	Summary-EpiFRlenDs				Clusters-EpiFRlenDs	
X	id	x	y	test	case_count	dates	geometry
0	0	0.65	0.23	1.00	1.00	2017-02-02	POINT (0.6501583242056156 0.2263900645166991)
1	1	0.59	0.25	1.00	1.00	2017-02-02	POINT (0.588663186105735 0.2487327248919935)
2	2	0.52	0.28	0.00	1.00	2017-02-02	POINT (0.5192467204498593 0.2798303291315103)
3	3	0.53	0.27	0.00	1.00	2017-02-02	POINT (0.5278502613512792 0.2675281527822195)
4	4	0.50	0.26	0.00	1.00	2017-02-02	POINT (0.5047968077547809 0.2574337439579267)
5	5	0.55	0.28	0.00	1.00	2017-02-02	POINT (0.5518163189246097 0.2814608512710172)
6	6	0.57	0.25	0.00	1.00	2017-02-02	POINT (0.5678328017957089 0.2473601744582751)
7	7	0.64	0.18	1.00	1.00	2017-02-02	POINT (0.6395848922608505 0.1828924691616904)
8	8	0.57	0.21	0.00	1.00	2017-02-02	POINT (0.5738921025170545 0.2052674949528755)
9	9	0.51	0.21	0.00	1.00	2017-02-02	POINT (0.5147256075147485 0.2082208411518272)
10	10	0.49	0.21	0.00	1.00	2017-02-02	POINT (0.4937071989669555 0.2060033727657479)
11	11	0.60	0.34	0.00	1.00	2017-02-02	POINT (0.6029307631558944 0.3406494717758814)
12	12	0.53	0.28	0.00	1.00	2017-02-02	POINT (0.5319363495862008 0.2799487364419264)
13	13	0.63	0.35	0.00	1.00	2017-02-02	POINT (0.6270774570623959 0.3472797804217508)
14	14	0.64	0.17	0.00	1.00	2017-02-02	POINT (0.6377582219943166 0.1690831549176041)
15	15	0.53	0.32	0.00	1.00	2017-02-02	POINT (0.5307095123147969 0.3182405598298775)

4. Click on **Run Spatial Analysis Button** to run the *EpiFRlenDs* algorithm over your data and detect the hotspots. The **Summary & Clusters-EpiFRlenDs Panels'** will be filled with the outcome of the algorithm and some statistics will be displayed with the detected hotspots.

Data	Distribution	Summary-EpiFRlenDs	Clusters-EpiFRlenDs
Summary table with detected clusters and significance			
cluster_id	p_value	mean_x	mean_y
1	0.59	0.66	0.22
2	0.00	0.32	0.74
3	1.00	0.21	0.25
4	0.00	0.13	1.02
5	1.00	0.84	0.93

Same steps can be followed for the **Temporal Analysis**.