**IntelliCage automated analysis – Version 1**

Hello! Thank you for taking the time to look at the readme file for IntelliR. In this file you will find basic instructions on how to run the analysis, including exporting the required files.

File requirements:

After running the challenges, each individual IntelliCage Archive File (.zip) has to be open in the IntelliCage Analyzer Software.
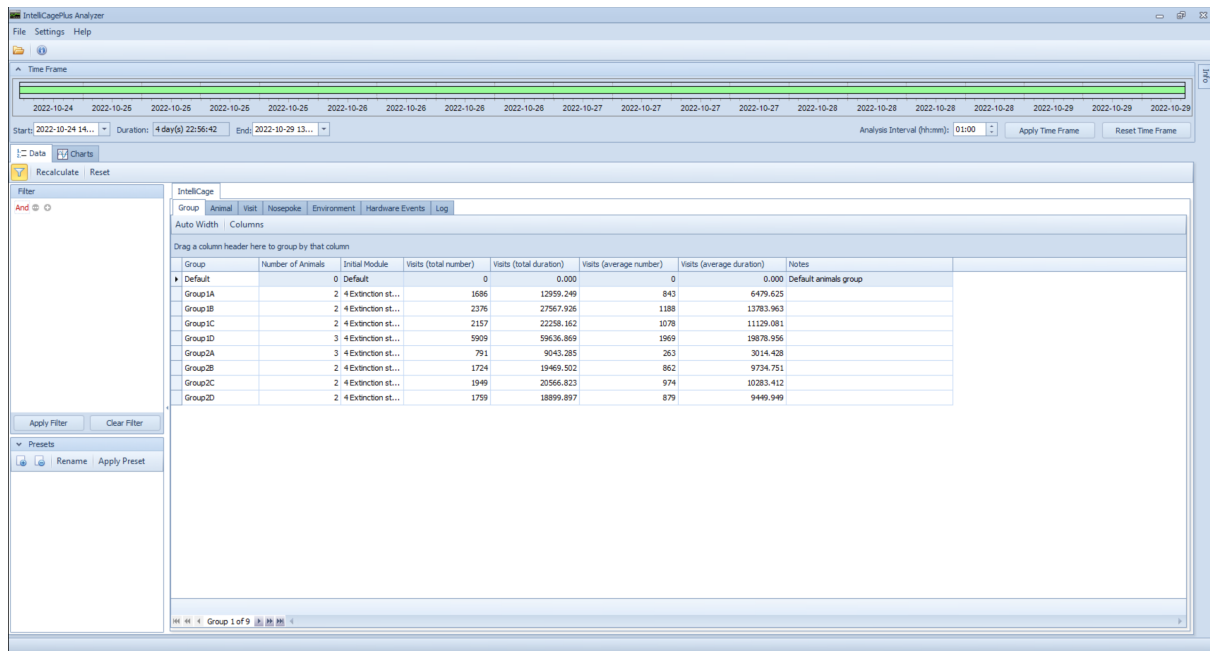
After loading the file, click on the menu "File" and then "Export Data". Double check that the whole session is selected as time frame.
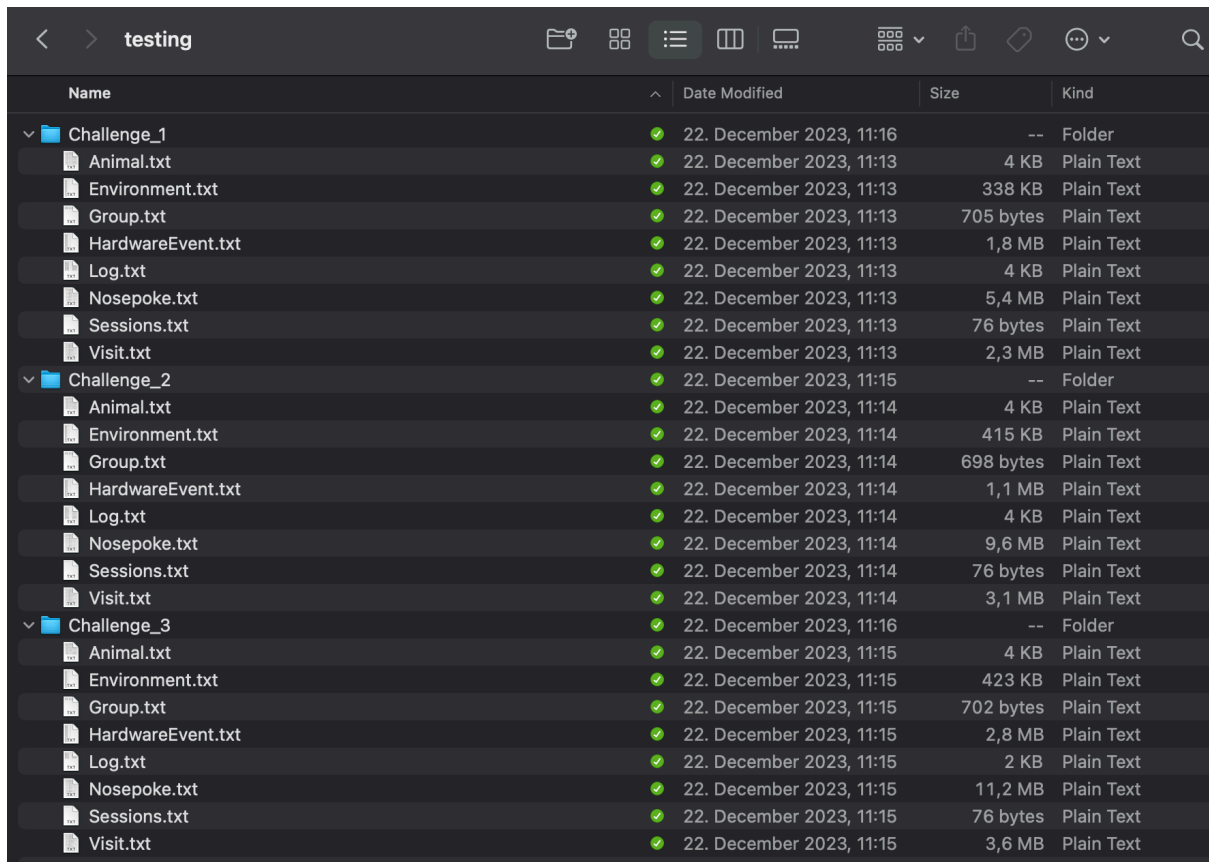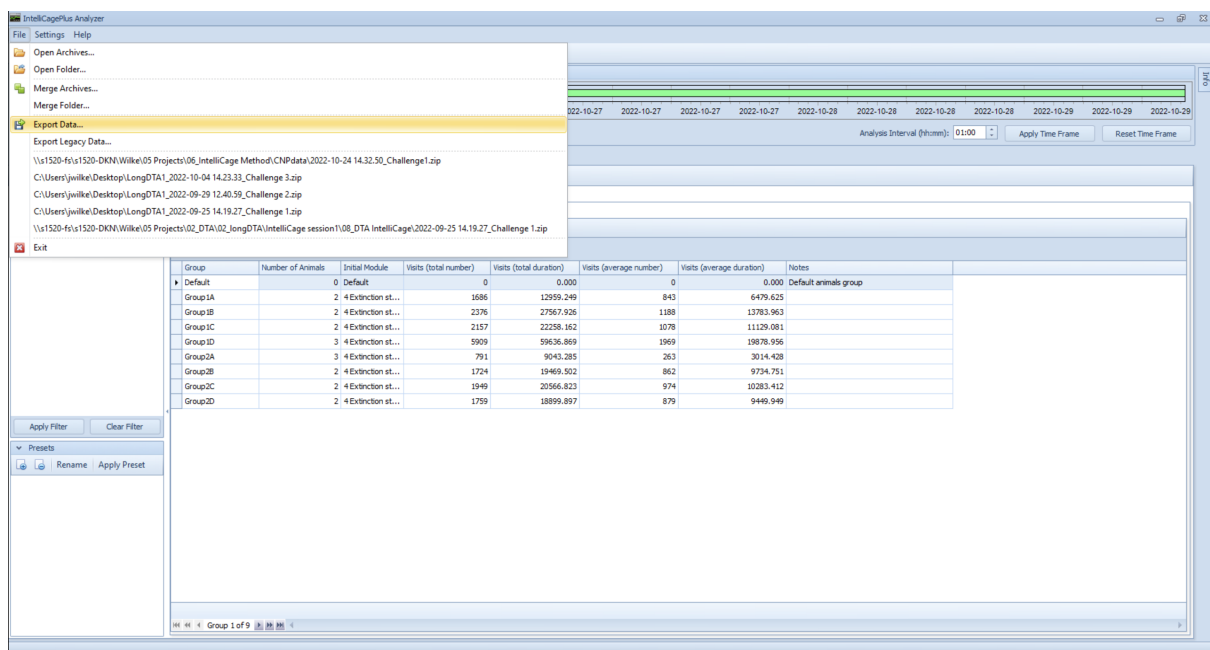
In the end you will have three exported folders that should be placed in one final folder with your project name. The folder exported from the IntelliCage Analyzer Software should be renamed as follows:

Challenge_1
Challenge_2
Challenge_3

Also note the location of the unblinding file to make sure it is easy to find it.

See the screenshot below for how the files should be organized:

The files should be exactly what is obtained from the IntelliCage exporting software. No need for any changes.

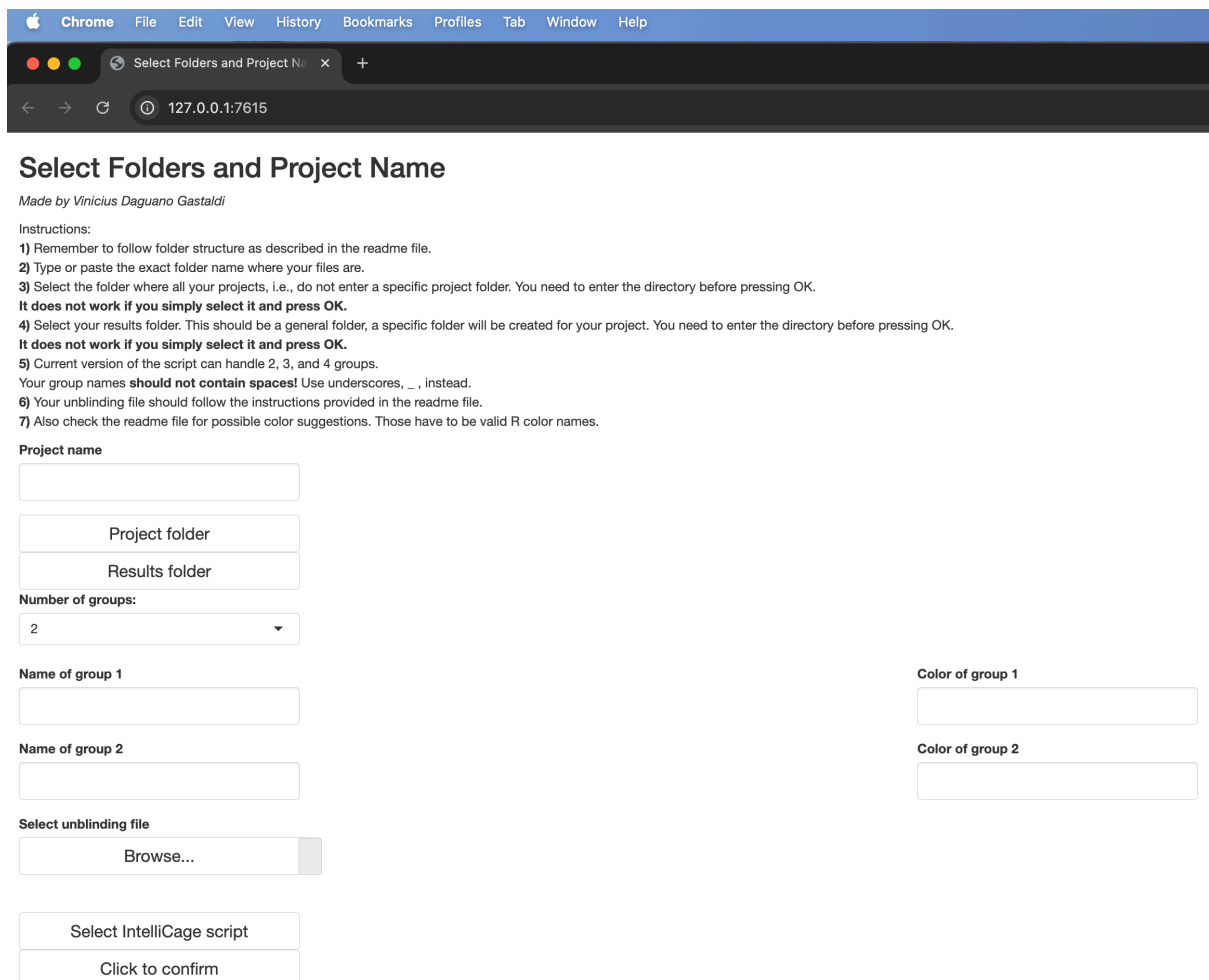**But what if I have two sets of data that have to be analyzed together?**

No worries! Just run the *merging_intellicages* code! This is a fairly direct script and you only have to select the Visits.txt file from Challenge 1 for both sets of data. Remember to provide the new name of the folder your files will be placed to the variable **project_merged**. The files for both separate sets have to be organized as described above!

Running the analysis

For Windows users you still need to execute the code from *initial_intellicages.R*. The source script (*start_intellicages_windows.R*) simply calls the starting script, so you may want to skip it. For Unix users you can double click the *run_intellicages_unix.sh* file. Otherwise just open the *initial_intellicages.R* script or run it through the terminal using ***Rscript initial_intellicages.R***.

The code will install any required dependencies on its own, but please check the console in case of any errors.

After running the initial script, you will be greeted by the following screen (text changes according to operational system):
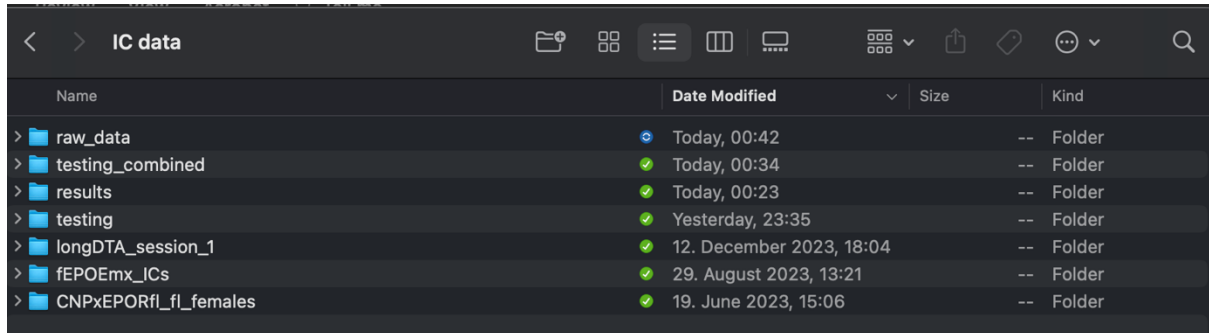

Please follow the instructions and provide all details needed for the code to run. The name of the project and groups **has to match what you have in your files.** The colors can be selected using their names or hex codes (recommended). To select hex codes, you can use the following website: https://www.color-hex.com/.

It is also important to provide a properly formatted unblinding file! The unblinding file contains only two columns: ID and Group. It should be saved as Tab-delimited Text (.txt) file. You can easily use Excel for this.

Everything else should run on its own!

In the next page you can find some examples of folder organization and one screenshot of the filled page.
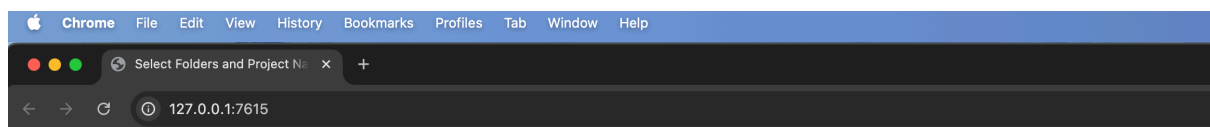
One example of how folders should be organized:

Note that this folder contains all datasets with their appropriate names and a "results" folder where everything is saved.

Filling the page is also very straightforward. The main difference is that with Windows you will click on the folder for the projects and results and that is all. You should not actually "enter" them.

Observation!

ELM1A refers to ELM Acquisition, ELM2A to ELM Retrieval, ELM1R to ELM Reversal Acquisition, and ELM2R to ELM Reversal Retrieval. The different naming scheme in the script and the created files is to make it easier to identify differences between the created variables.