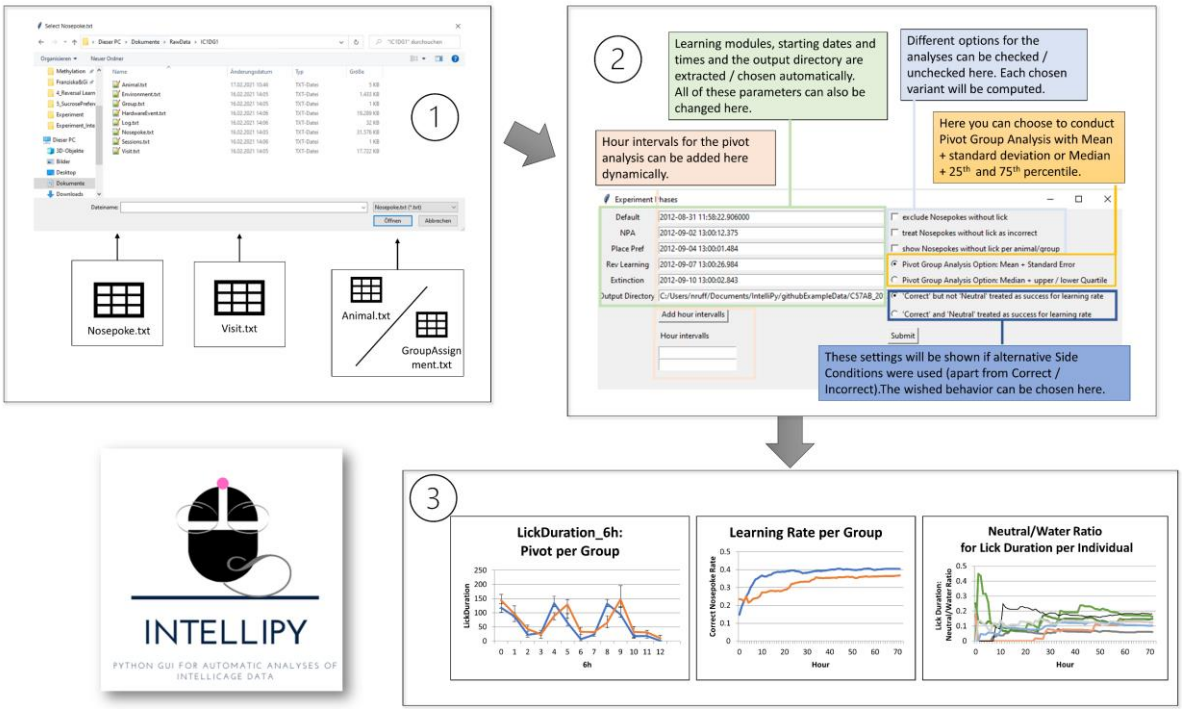
- IntelliPy User Manual -

Step by step approach for installing and
running IntelliPy with example data



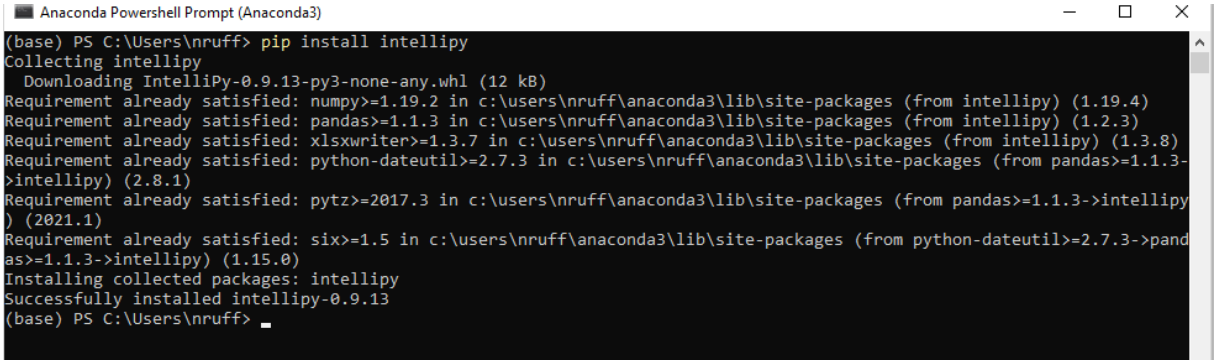
1. a) Installing IntelliPy via Terminal

Start by opening your terminal.

Type: **pip install intellipy** and hit the Enter button

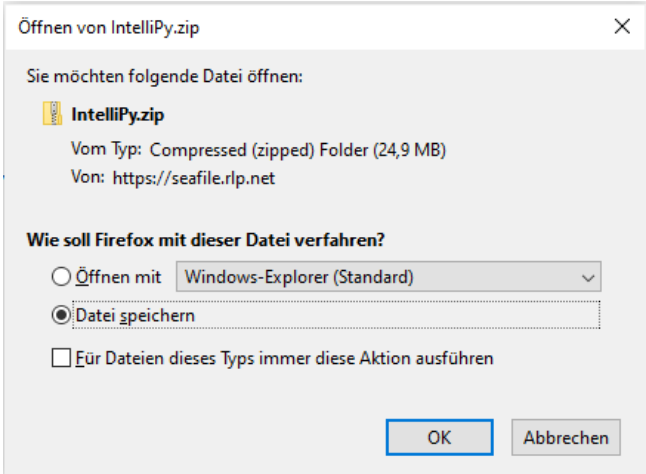
Alternatively, if you have multiple python versions installed, you might want to use **python3 -m pip install intellipy**

After running the command, the output should show, that intellipy and all necessary python libraries are downloaded and installed.

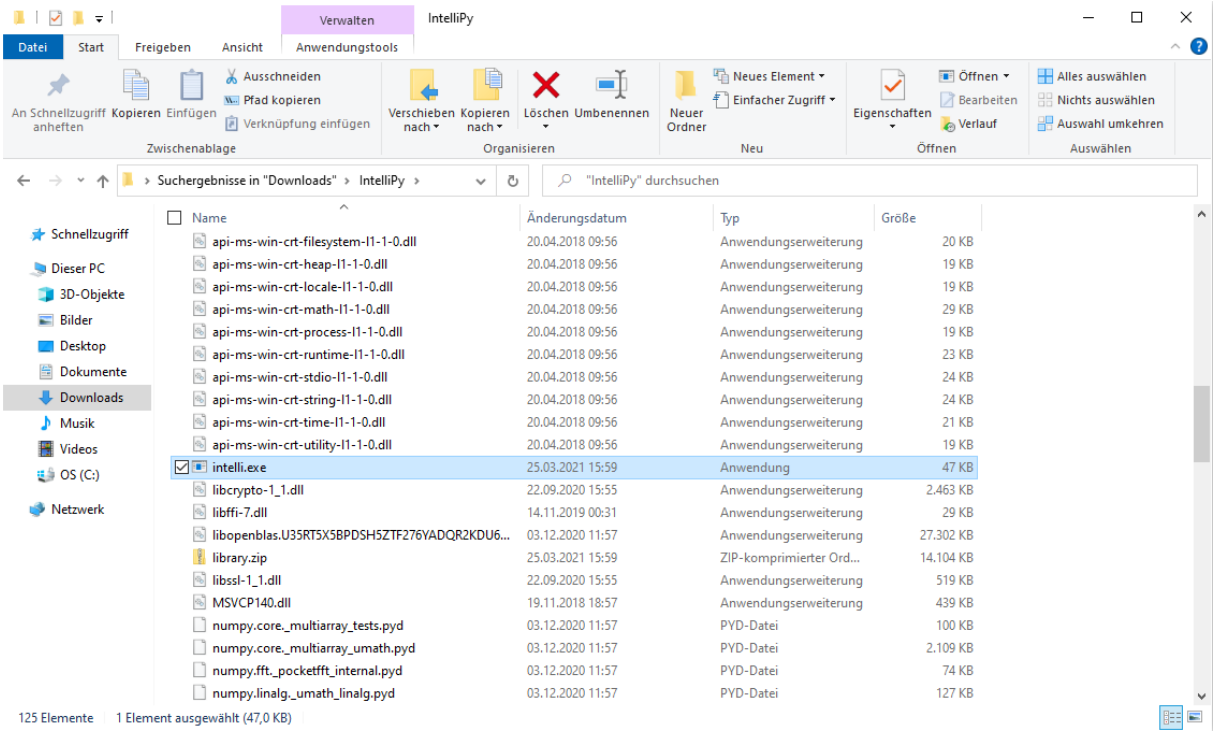


1. b) Installing IntelliPy using the windows exe:

Download Intellipy using https://seafile.rlp.net/f/1a9e63dc038b4a1e87be/?dl=1 and save the ZIP directory.



After unzipping IntelliPy.zip, open the directory and start the intelli.exe



2.1 Starting intellipy:

Terminal only:

Type

python -m intellipy

or if you have multiple python versions installed,

python3 -m intellipy

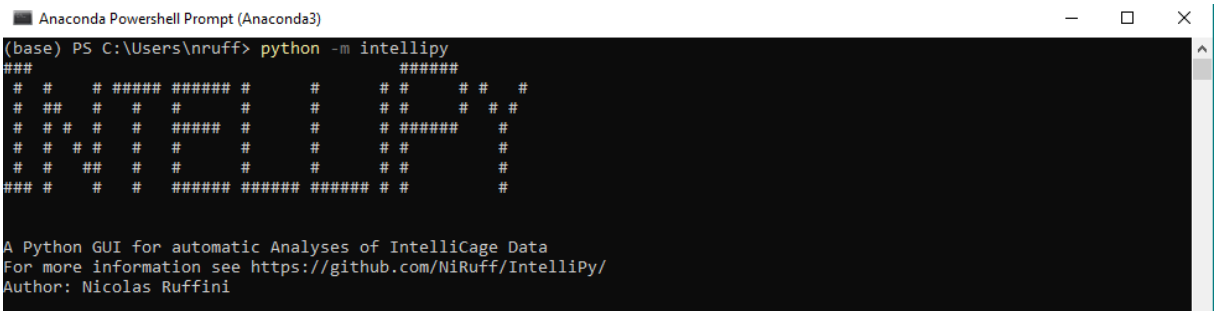
and hit the Enter button

If you run into problems using Ubuntu or similar operating systems, you might need to install tkinter first by running

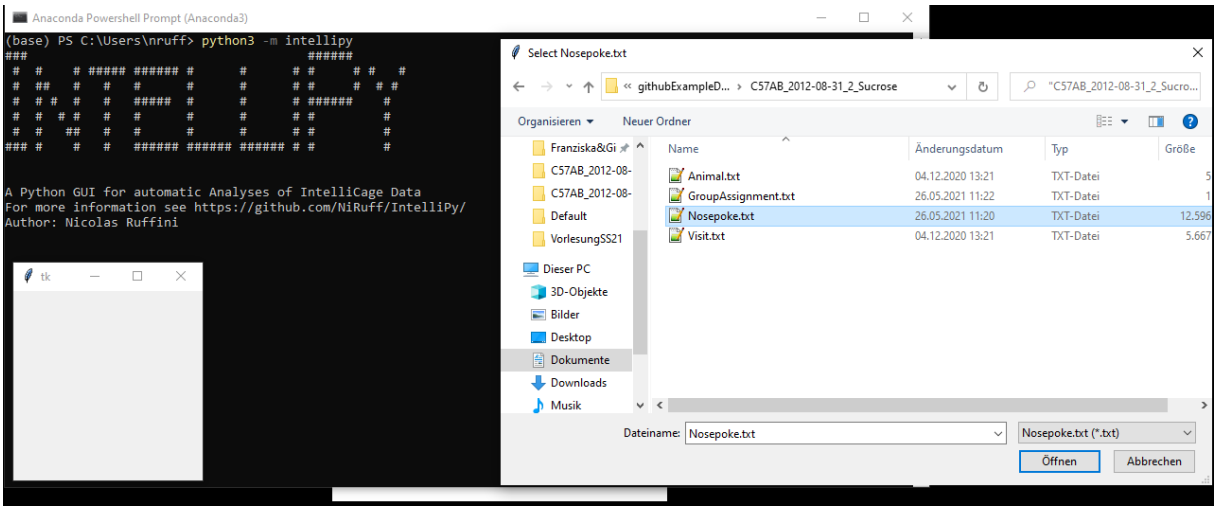
```
sudo apt-get update

sudo apt-get install python3-tk
```

in your terminal.

If starting intellipy was successful, your terminal should look like this:

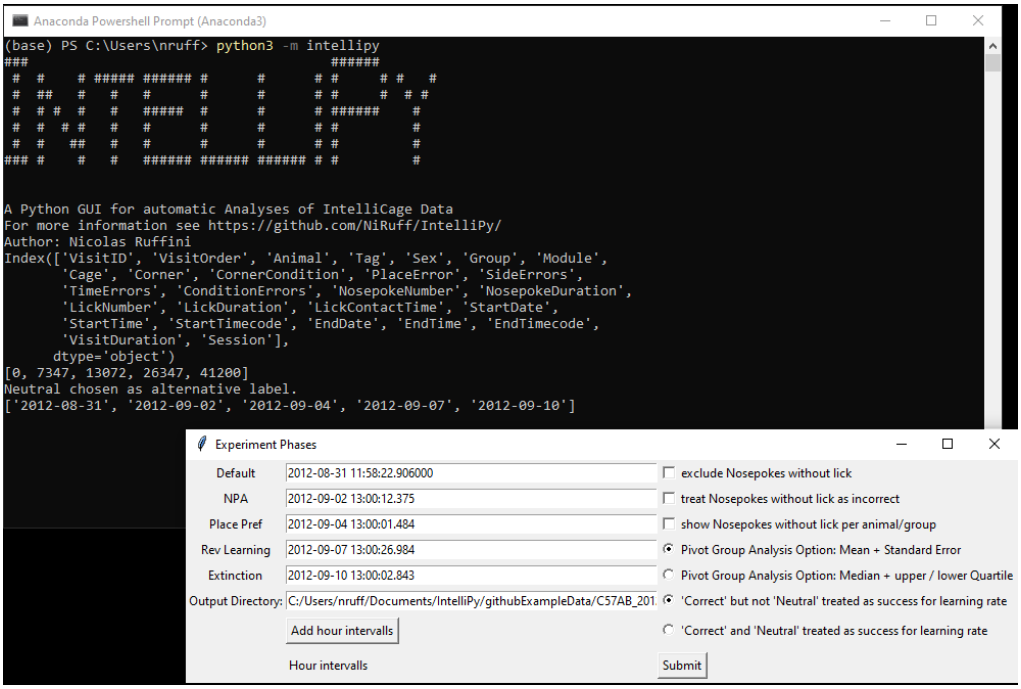


You will first be prompted for the Nosepoke.txt file, then for the Visit.txt file and ultimately for the Animal.txt file or the Group Assignment file respectively. These files are given in your IntelliCage data after extracting the whole raw data with the TSE Analyzer.



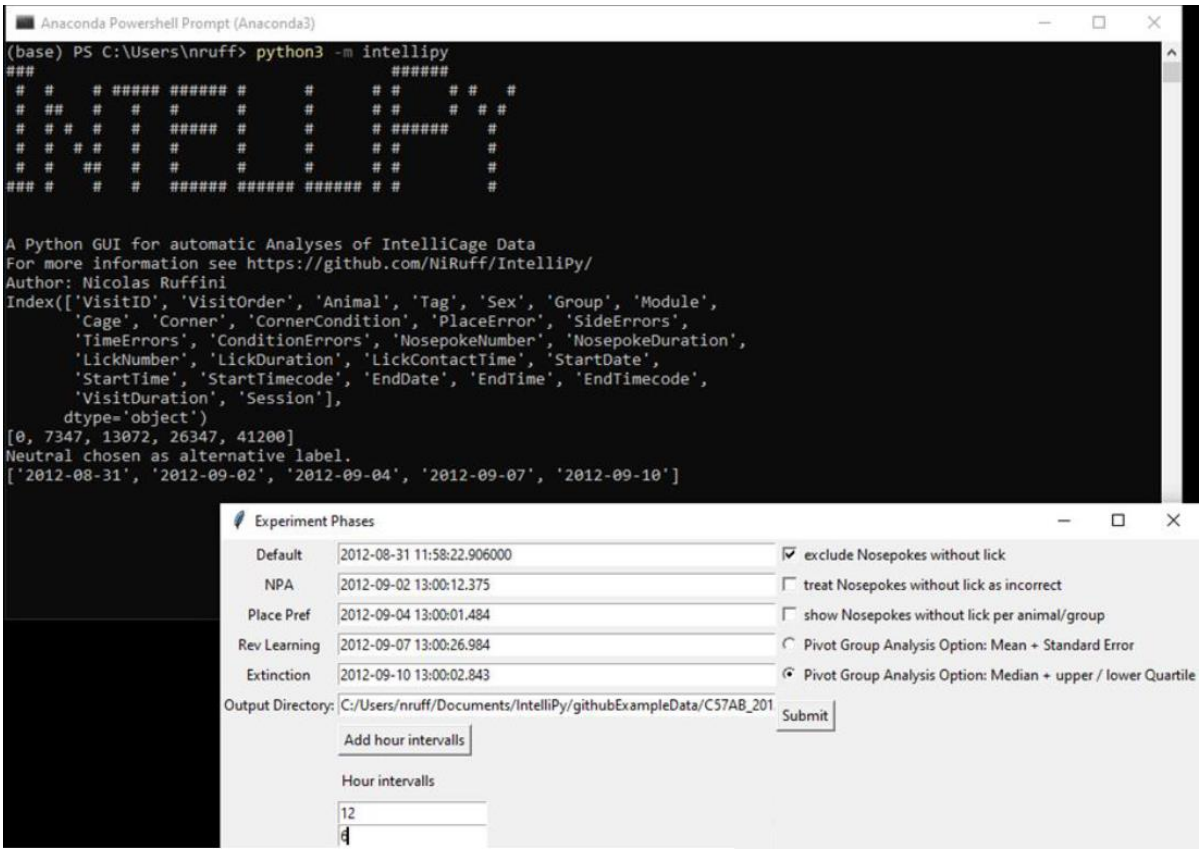
2.2 a) Settings:

After providing all input files, a new window opens in which all experimental phases and their starting times are depicted. Here, it is also possible to change the output directory, adjust treatment of nosepokes without licks, add additional hour intervals in which the pivot data should be binned, adjust whether to use mean with standard deviation or median with quartiles for the group pivot analyses as well as adjusting the treatment of the alternative label if used.



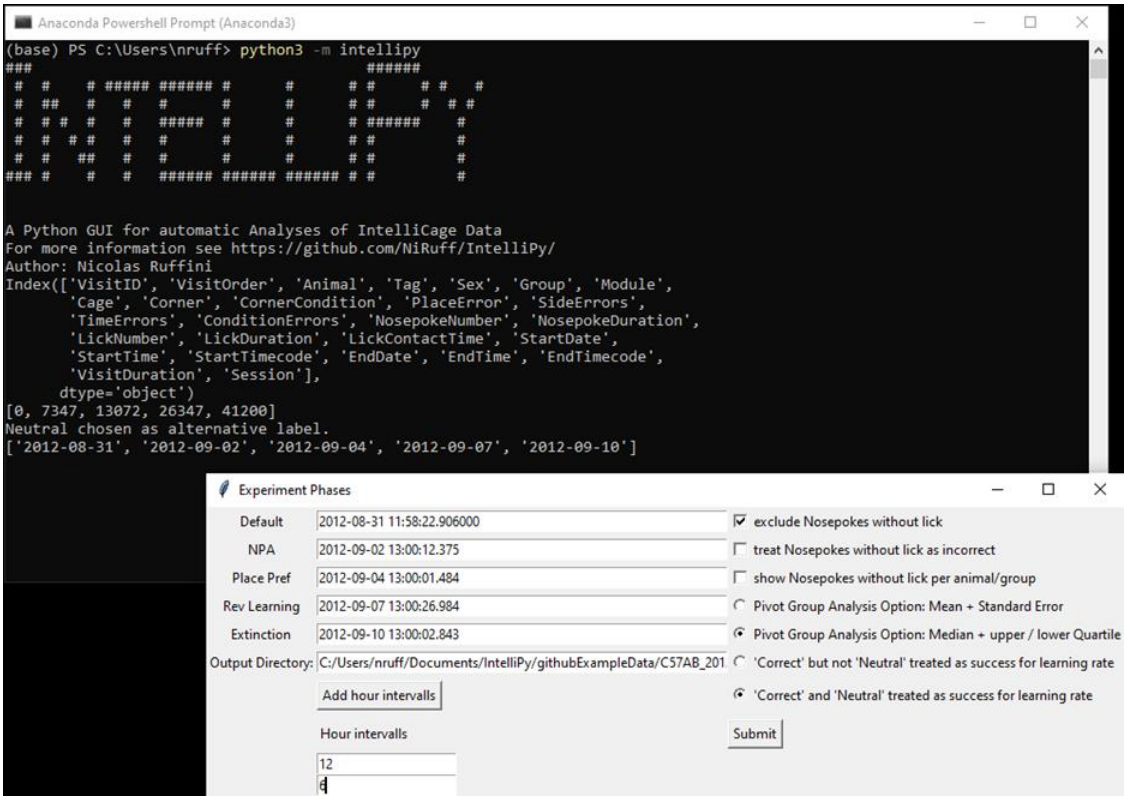
Here, the addition of 12- and 6-hour intervals is depicted, as well as adding the exclusion of nosepokes not followed by a lick, before calculating the learning rates. For the groupwise pivot analyses, median + quartiles is selected.

When all settings are adjusted as wished, click the Submit button.

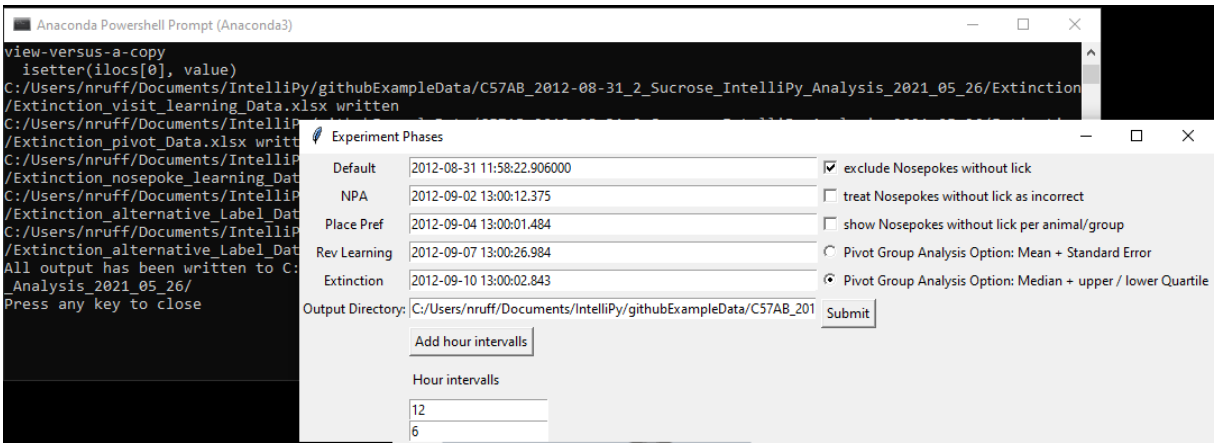


2.2.b) Additional settings when using alternative labels:

If an additional label was provided in the group assignment file, it is possible to decide about the treatment of the alternative label for the learning rate experiments. If you conducted such an experiment with an alternative label, see the documentation on https://github.com/NiRuff/IntelliPy or in the supplement about how to create the group assignment file.

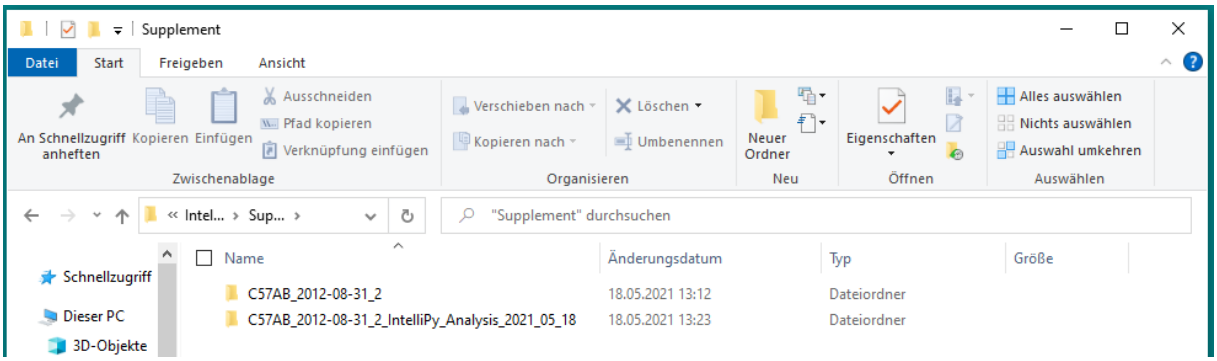


IntelliPy will inform you about the current step of the analysis in the terminal. The whole analysis should take several seconds up to several minutes – depending on your machine, the size of the input data and the complexity of your chosen settings. Finally, you will get information about where the output was written to and the prompt for pressing any key to close the terminal.

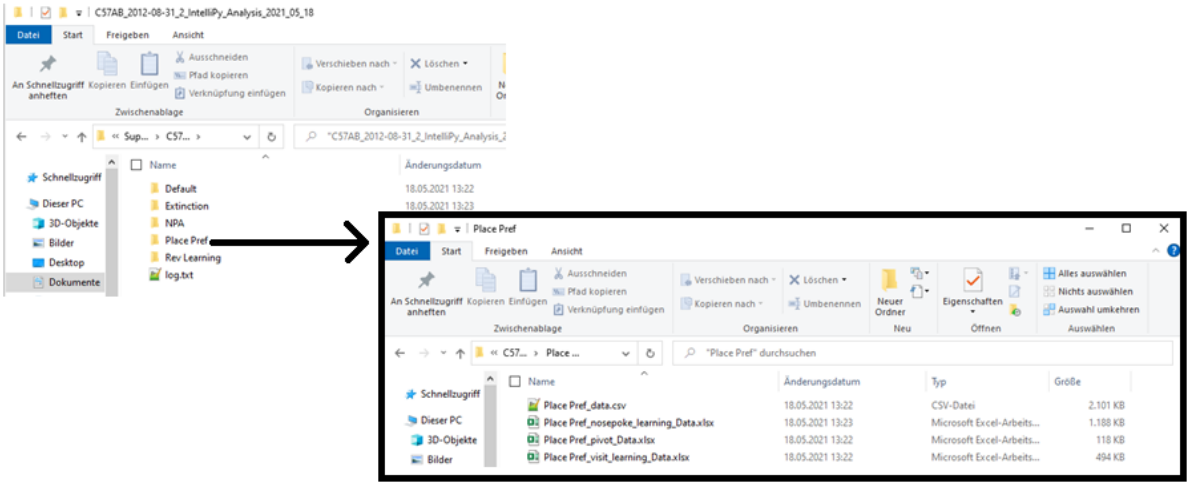


The output files:

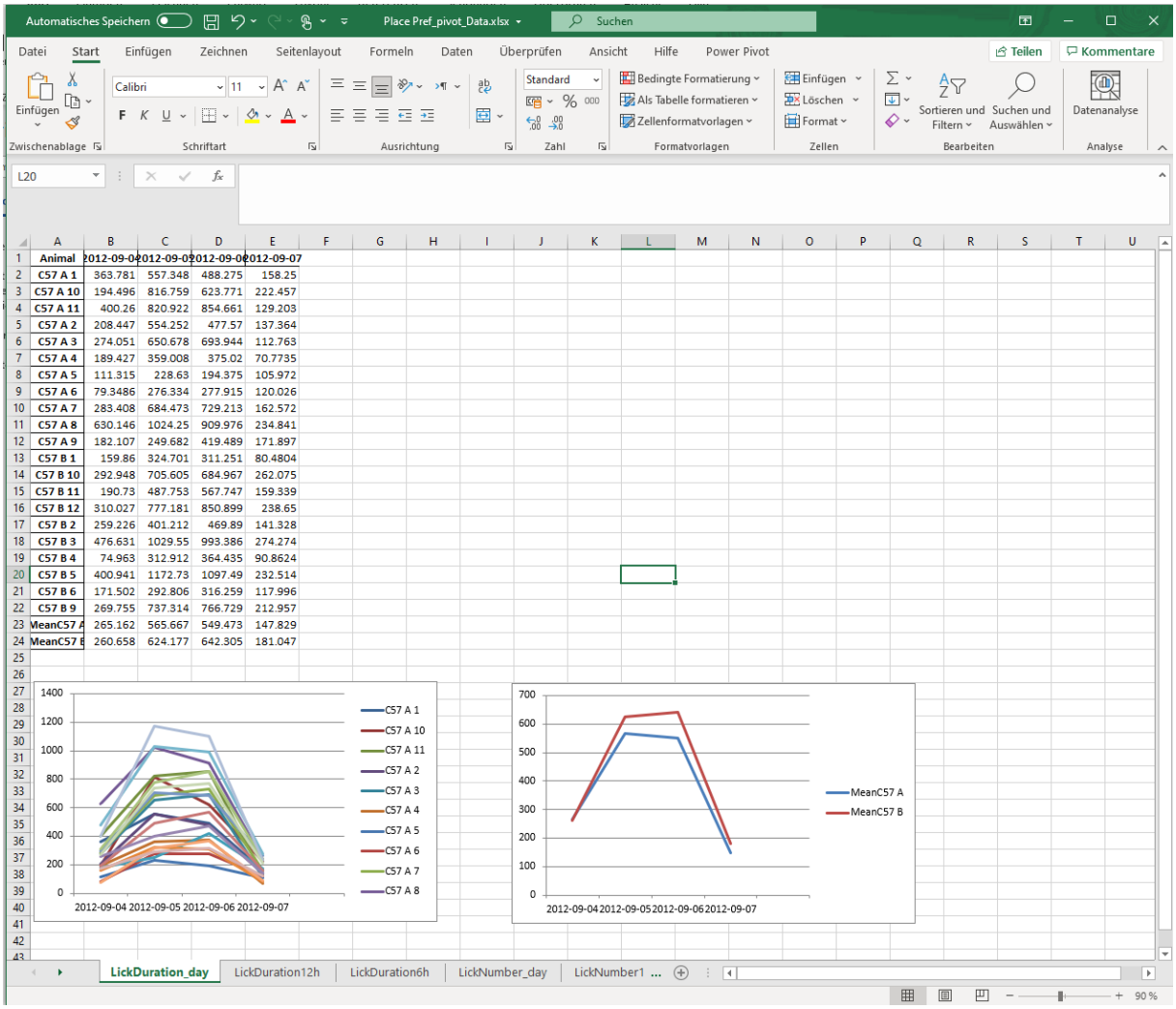
If the default settings for the output directory were not changed, the results of the analysis will be given in a new directory, located in the directory of the input data. In any case, you will get the information about where the output data is located.



The directory contains sub-directories for each learning module as well as the log.txt file. Specifications about the content of the log.txt file and the files created for each learning module are again given in the supplement as well as on github (https://github.com/NiRuff/IntelliPy).



Here is one example .xlsx file shown. Below the final data table, plots for each individual (left) as well as for the groups (right) are given for each excel sheet.



Animal	2012-09-02	2012-09-02	2012-09-02	2012-09-07
C57 A 1	363.781	557.348	488.275	158.25
C57 A 10	194.496	816.759	623.771	222.457
C57 A 11	400.26	820.922	854.661	129.203
C57 A 2	208.447	554.252	477.57	137.364
C57 A 3	274.051	650.678	693.944	112.763
C57 A 4	189.427	359.008	375.02	70.7735
C57 A 5	111.315	228.63	194.375	105.972
C57 A 6	79.3486	276.334	277.915	120.026
C57 A 7	283.408	684.473	729.213	162.572
C57 A 8	630.146	1024.25	909.976	234.841
C57 A 9	182.107	249.682	419.489	171.897
C57 B 1	159.86	324.701	311.251	80.4804
C57 B 10	292.948	705.605	684.967	262.075
C57 B 11	190.73	487.753	567.747	159.339
C57 B 12	310.027	777.181	850.899	238.65
C57 B 2	259.226	401.212	469.89	141.328
C57 B 3	476.631	1029.55	993.386	274.274
C57 B 4	74.963	312.912	364.435	90.8624
C57 B 5	400.941	1172.73	1097.49	232.514
C57 B 6	171.502	292.806	316.259	117.996
C57 B 9	269.755	737.314	766.729	212.957
MeanC57 A	265.162	565.667	549.473	147.829
MeanC57 B	260.658	624.177	642.305	181.047