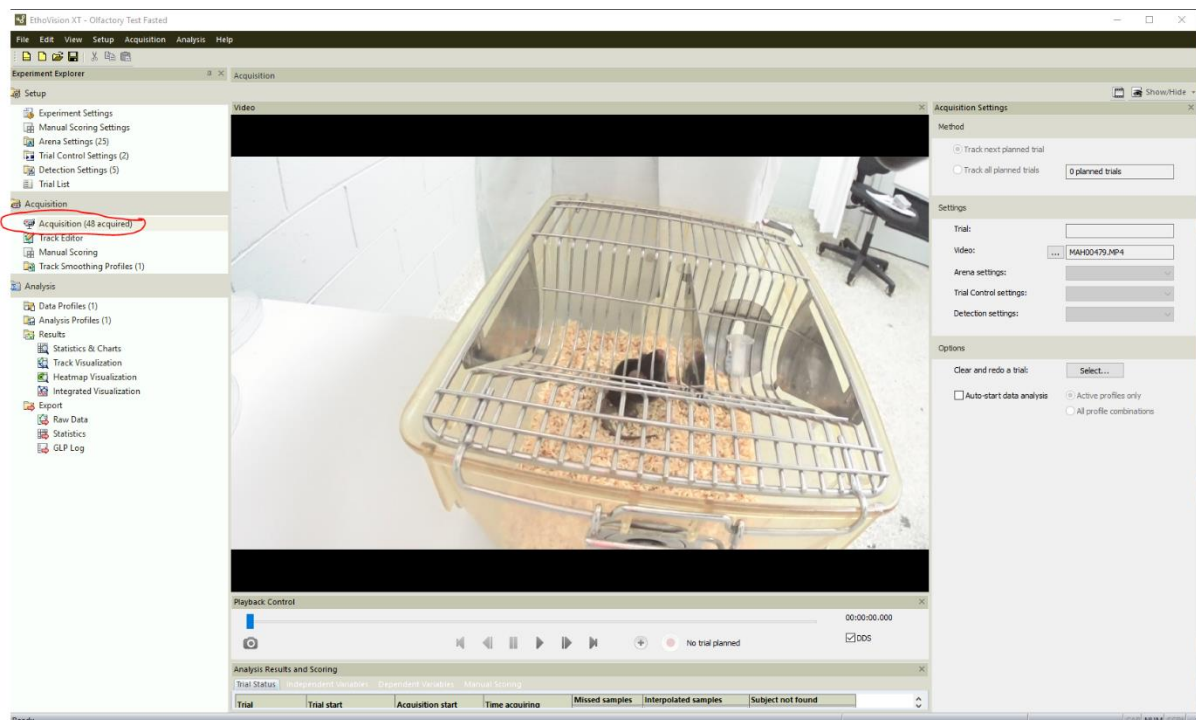


Manual scoring guide

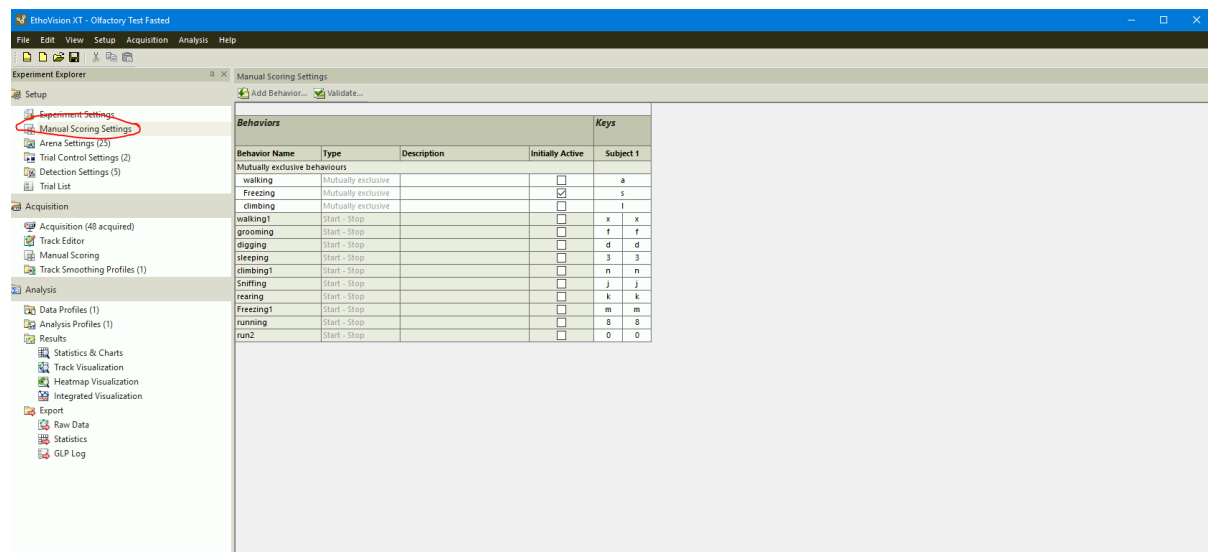
Purpose: this guide goes through the steps for manually scoring behaviours in EthoVision XT 14. After that, it goes through the steps for analysing the raw output data further with my python codes.

These codes make behaviours mutually exclusive, based on a priority list (eg. if walking and grooming happen at the same time, this should be grooming only). It then creates time data and bout data analysis files and visual barcodes for the behaviours over time.

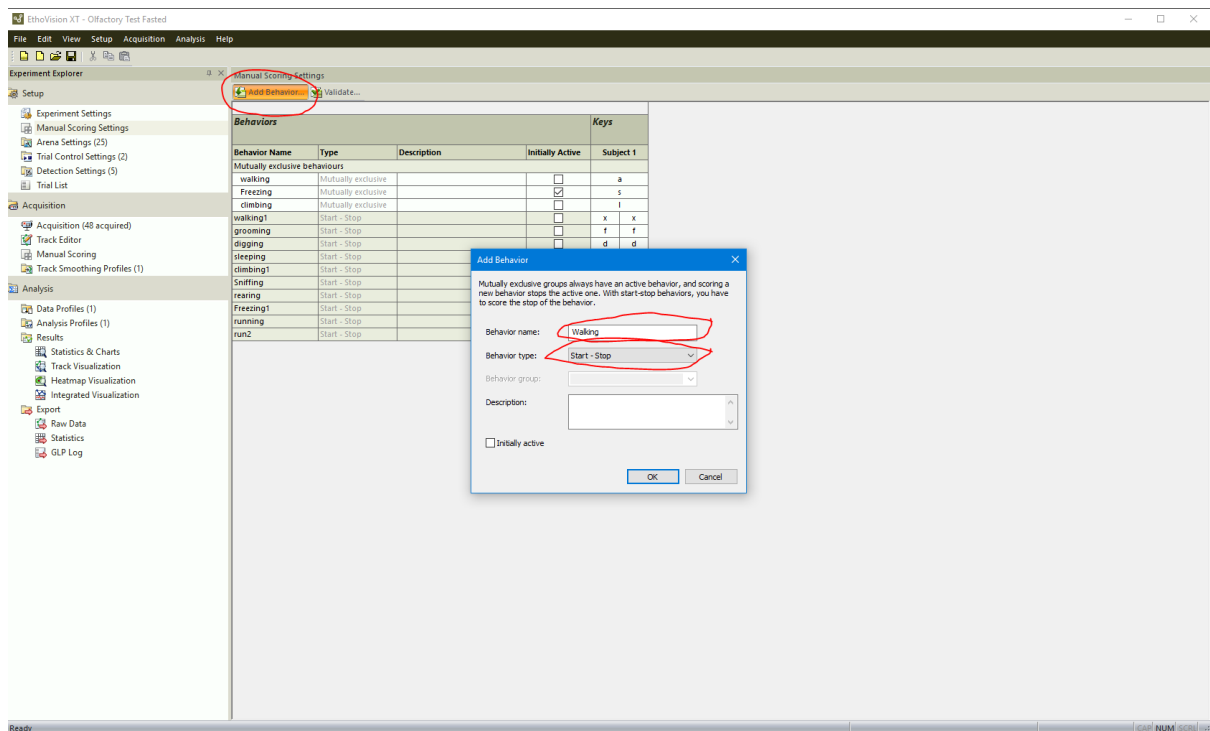
1. Acquire all trials normally.



2. Click on “manual scoring settings.”

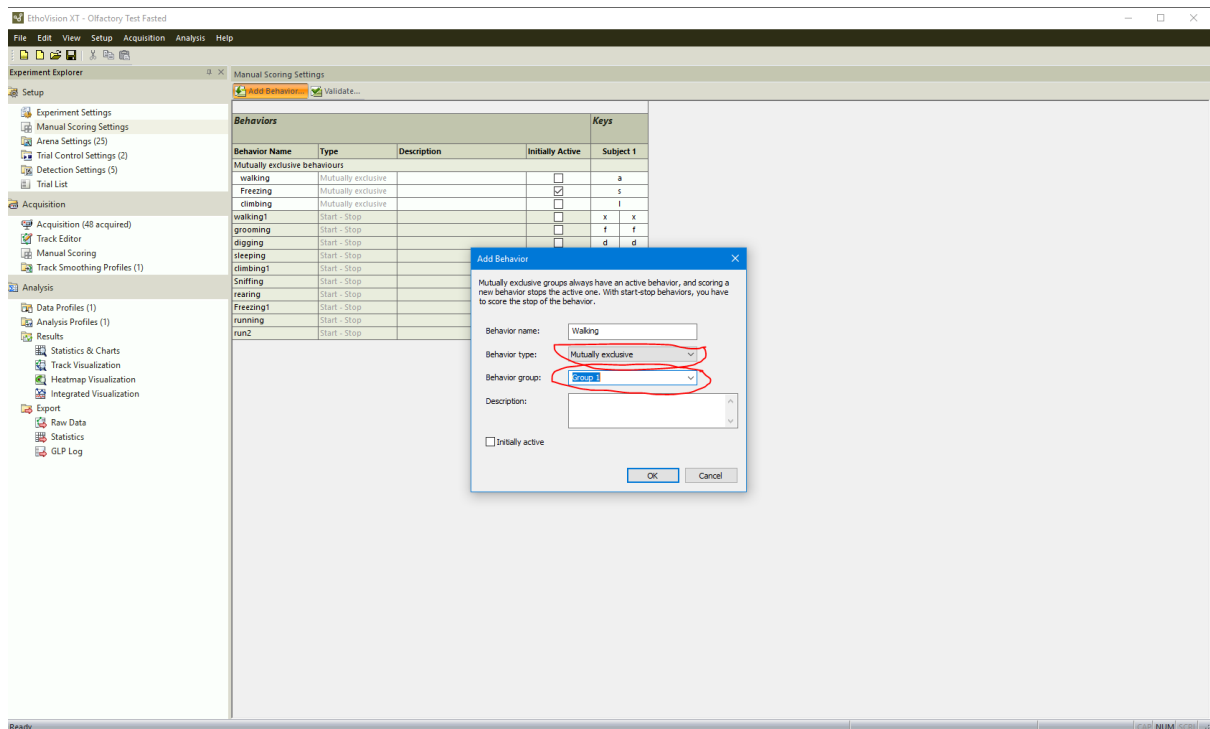


- Click on “add behaviour”, write the name and choose start-stop. Start-stop is used if you want different behaviours to overlap. For this, you need to press a key to start and stop.

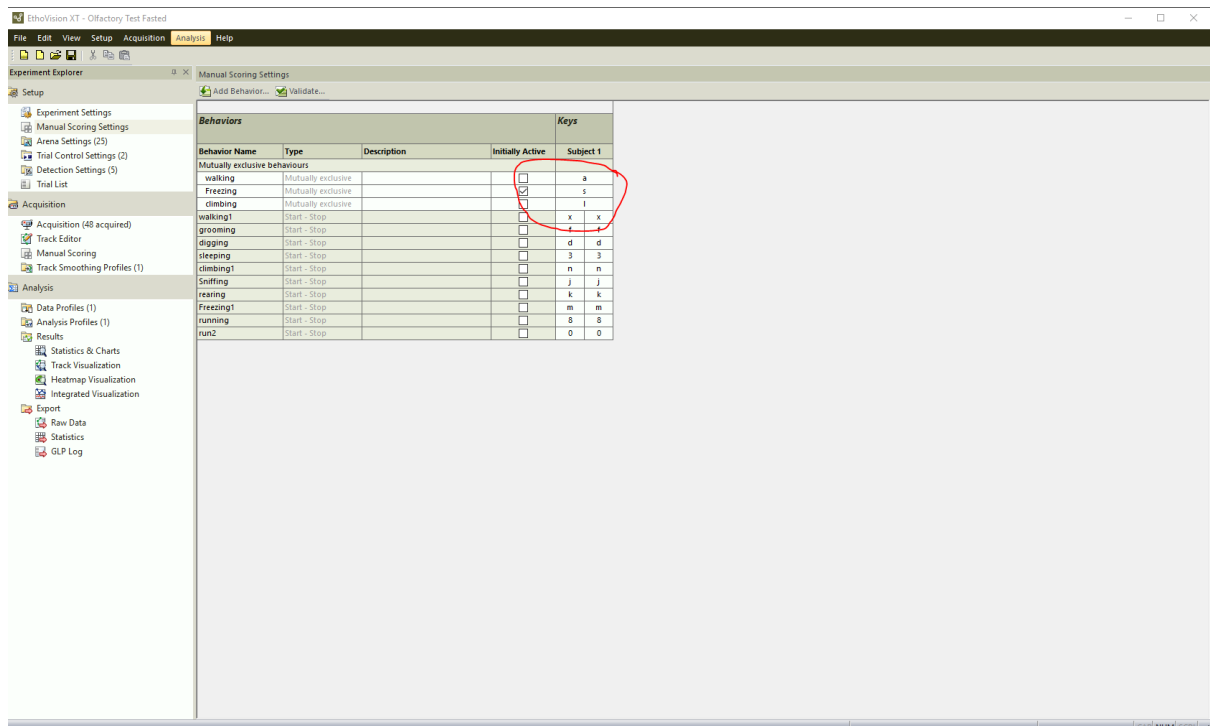


- Choose “mutually exclusive” if you want behaviours to be independent. You then need to define a “group name”. This allows only some behaviours to be mutually exclusive. When doing the manual scoring, you only need to press the key of the new behaviour (there is no need to press once for start and press again for stop).

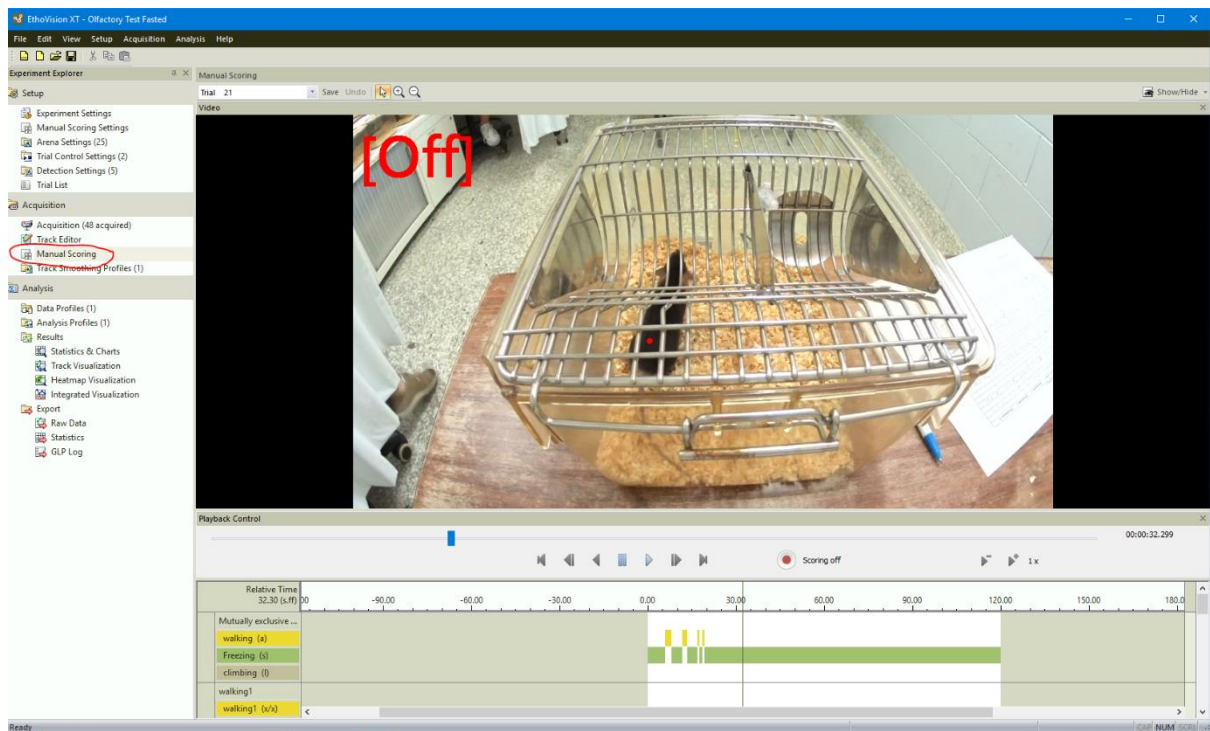
I usually make walking, stationary and rearing mutually exclusive and add 2-3 start-stop behaviours like sniffing and grooming.



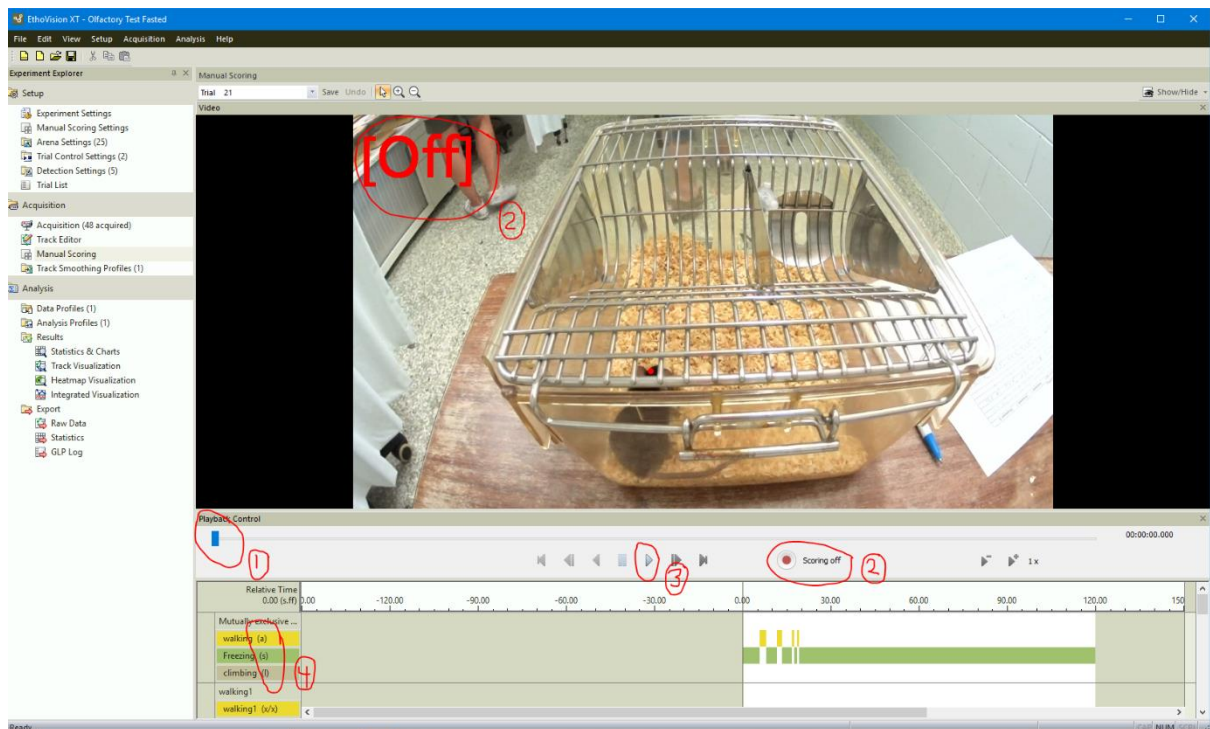
5. Select one mutually exclusive behaviour to be initially active. For the start-stop behaviours, this is not needed. Then define the key for each behaviour.



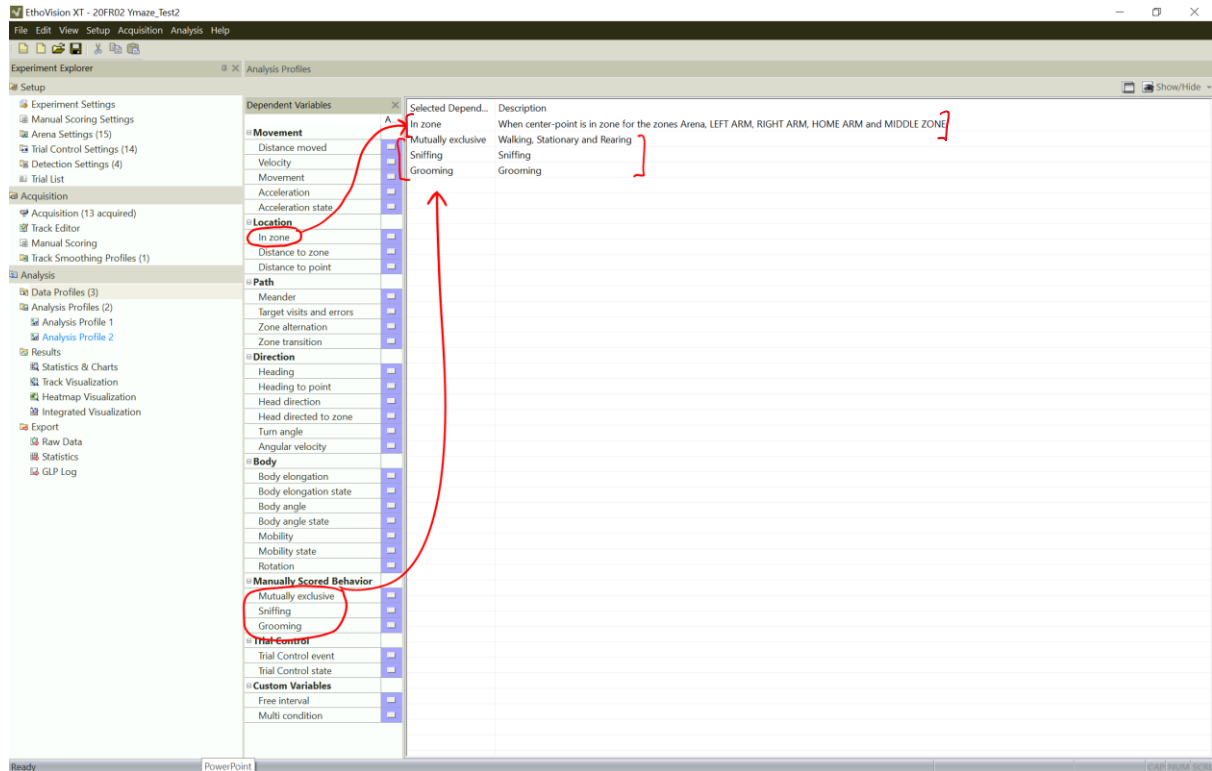
6. Click on “manual scoring”.



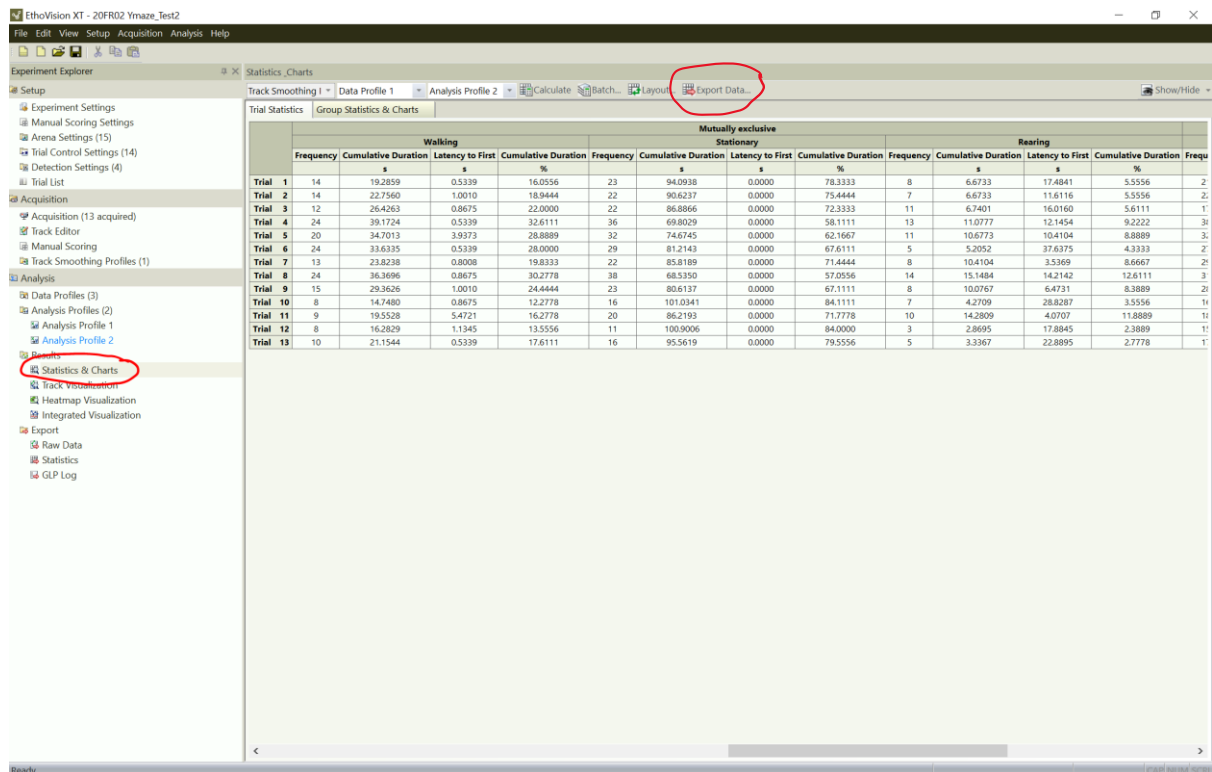
7. First, bring the video to the start. Second, while the video is paused press “scoring on”. At the top left corner of the video it should then say “on”. Third, press play. Fourth, start pressing the keys when the correct behaviour starts. Repeat this until the end of the video and for every trial.



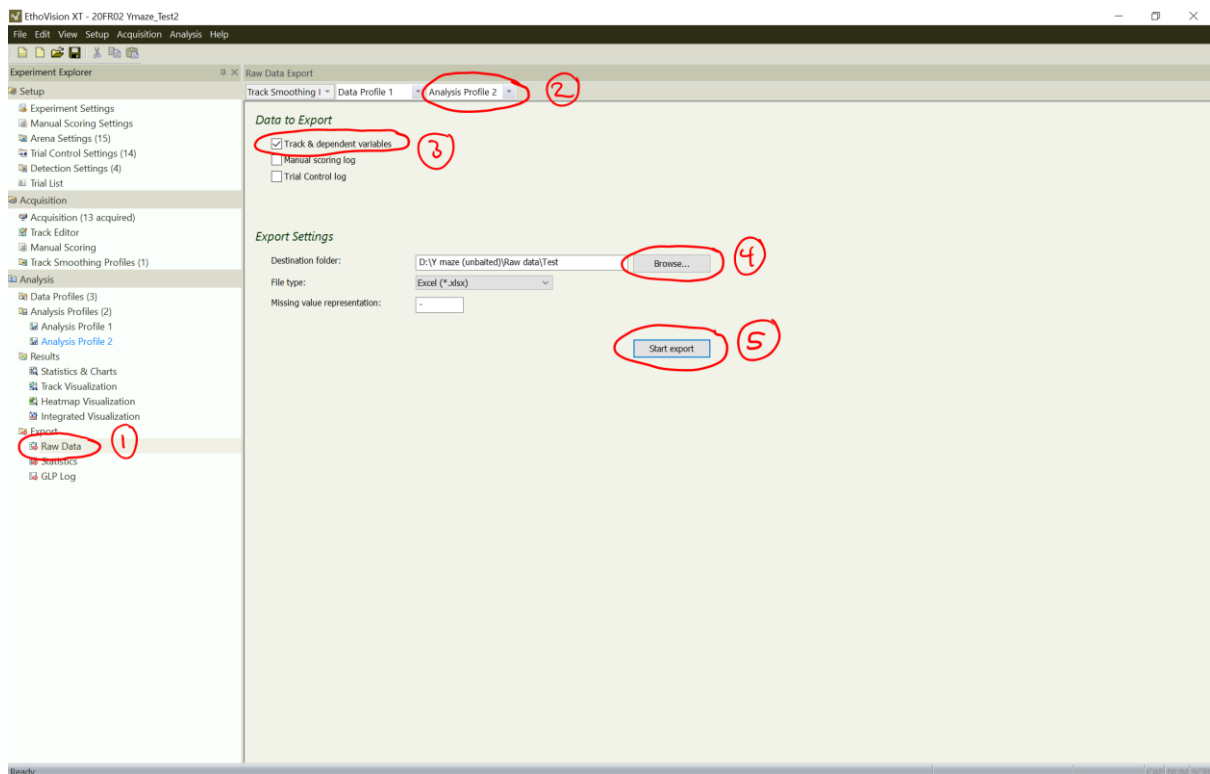
- Now click on “analysis profile” and add each behaviour from manual scoring to the results. If you want to find the overlap of a behaviour with a zone, add the zone data as well.



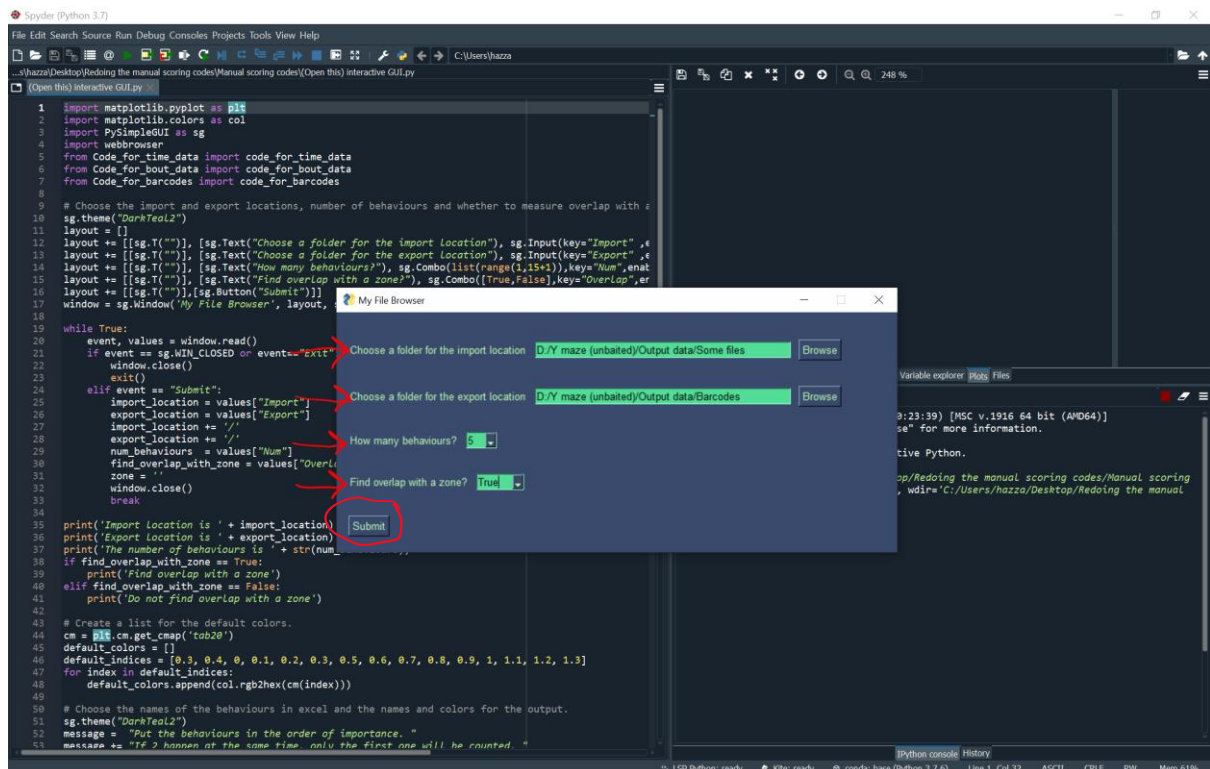
- “Statistics and charts” gives the total time doing each behaviour. The data is good for mutually exclusive behaviours. However, for mutually exclusive and start-stop behaviours, the cumulative duration will add up to more than 100%.



- Export the raw data, so it can be run in my python codes. Click on “raw data”, select the analysis profile that contains the behaviours, tick “track and dependent variables”, choose the export location and click start export.



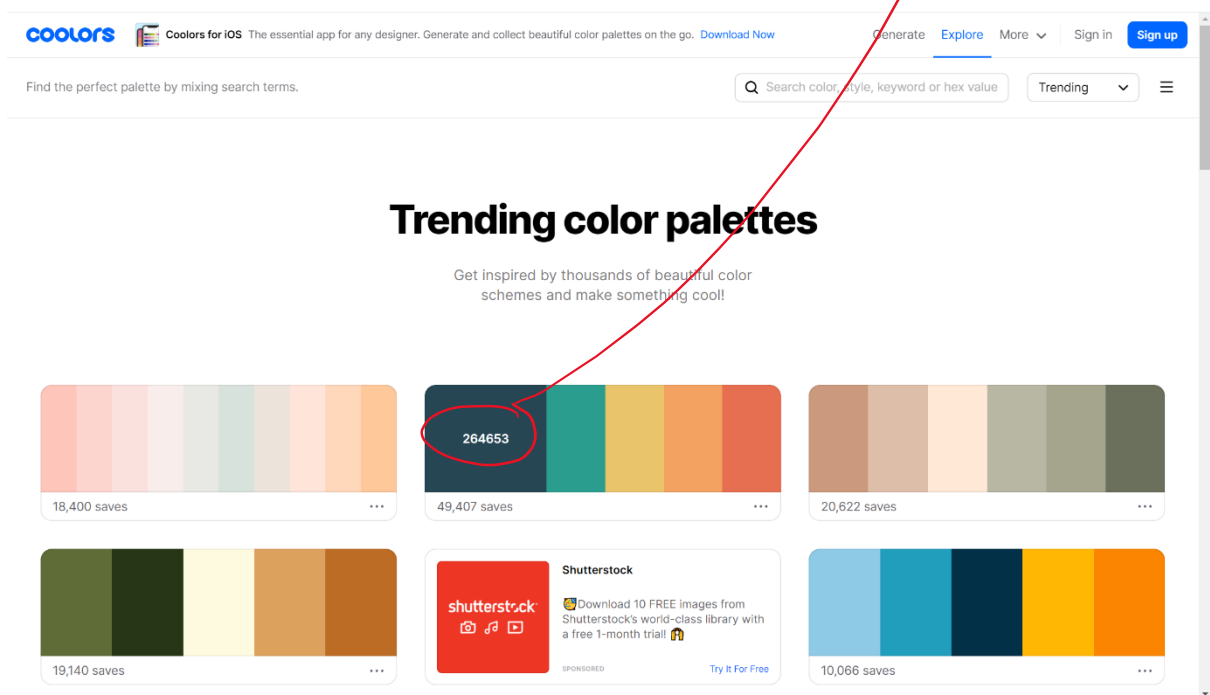
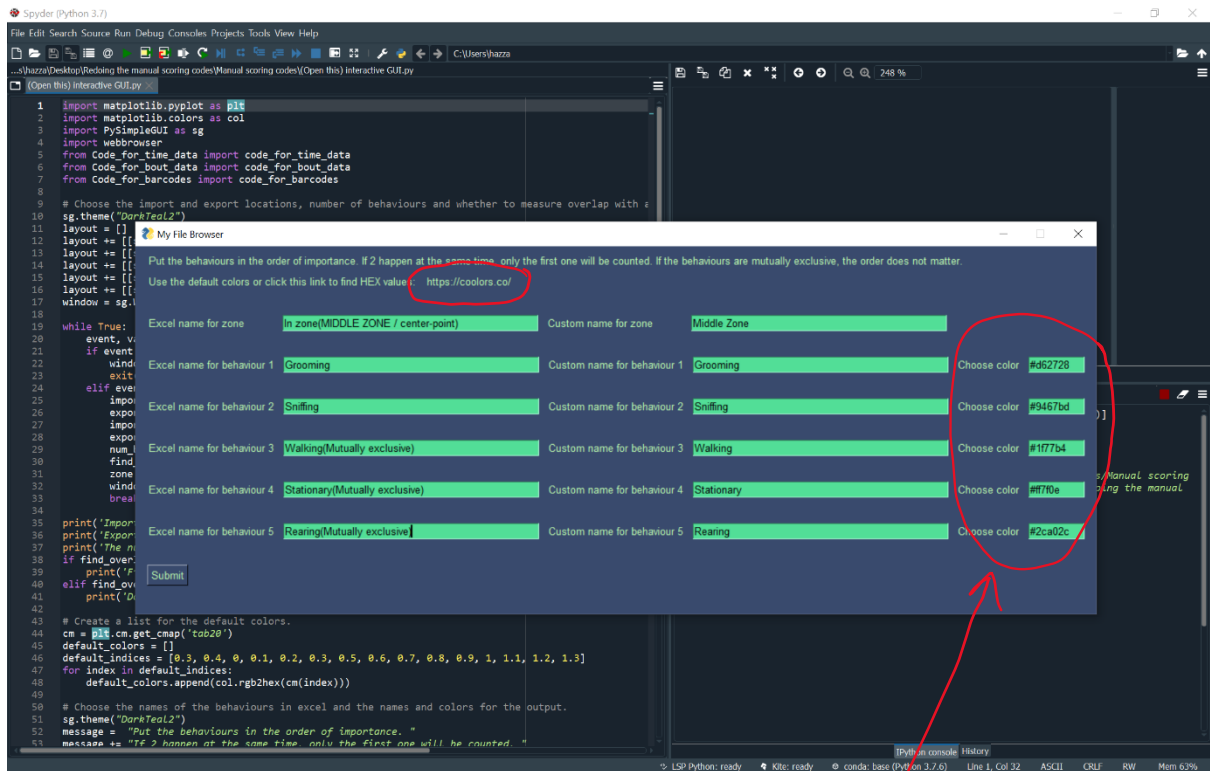
- Choose the folder that contains the raw excel files from Ethovision, an export folder, the number of behaviours and whether to find the overlap with a zone. Click submit.



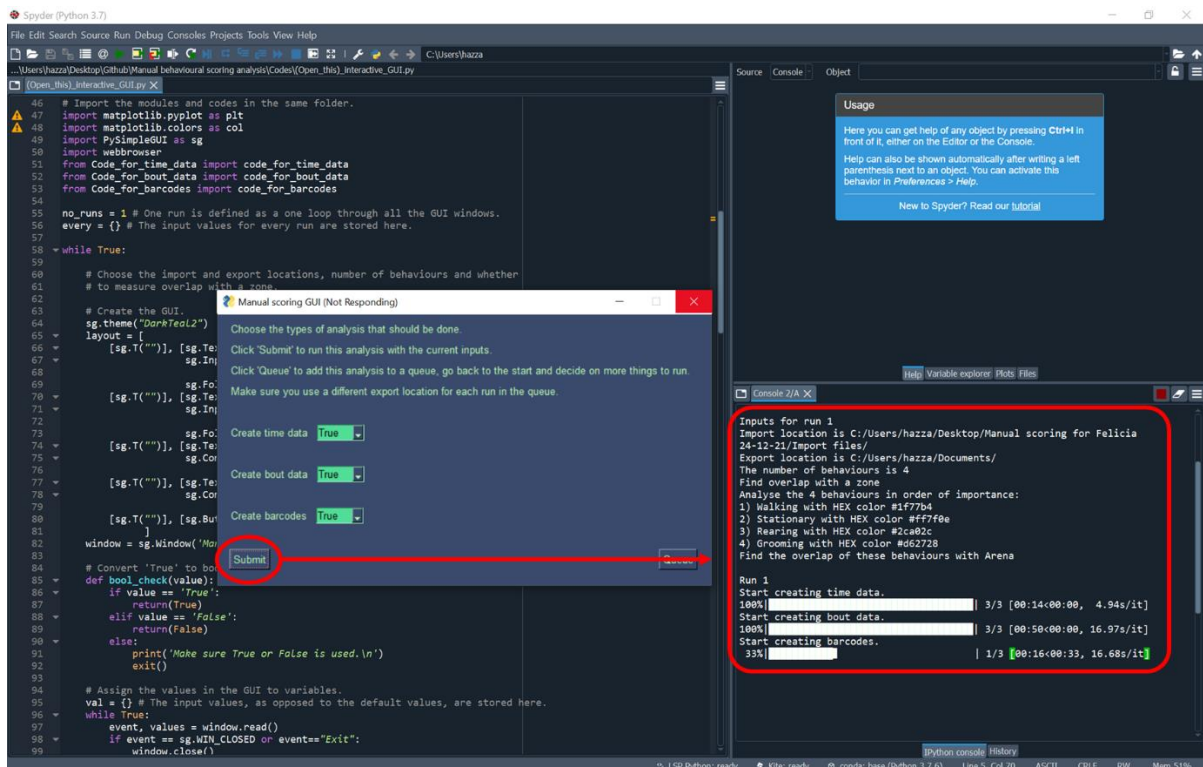
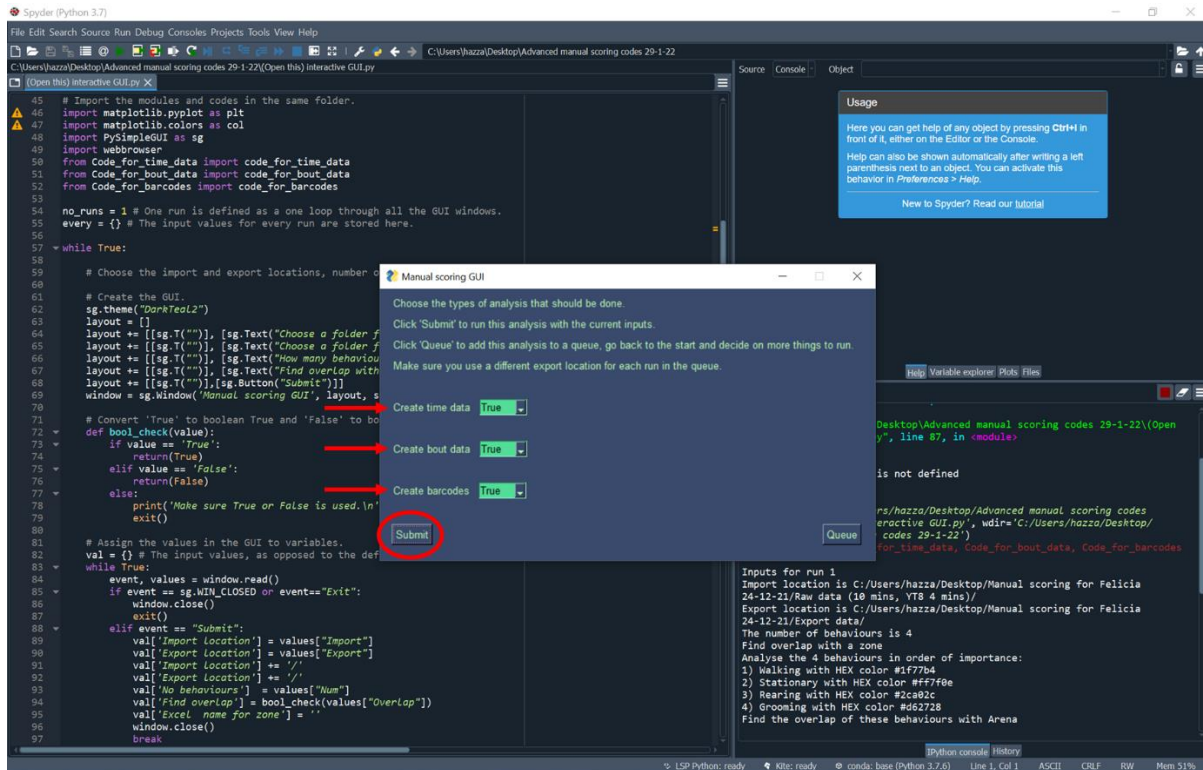
- Open one of the raw excel files and make a note of the column headings for each behaviour and zone.

| | In zone(HOME ARM / center-point) | In zone(MIDDLE ZONE / center-point) | Walking(Mutually exclusive) | Stationary(Mutually exclusive) | Rearing(Mutually exclusive) | Sniffing | Grooming | Result 1 |
|----|----------------------------------|-------------------------------------|-----------------------------|--------------------------------|-----------------------------|----------|----------|----------|
| 19 | | | | | | | | |
| 20 | | | | | | | | |
| 21 | | | | | | | | |
| 22 | | | | | | | | |
| 23 | | | | | | | | |
| 24 | | | | | | | | |
| 25 | | | | | | | | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | | | | | | | | |
| 31 | | | | | | | | |
| 32 | | | | | | | | |
| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 36 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 37 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 38 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 39 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 40 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 41 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 42 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 43 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 44 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 45 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 46 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 47 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 48 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 49 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 50 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 51 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |
| 52 | 1 | | 0 | 0 | 1 | 0 | 0 | 1 |

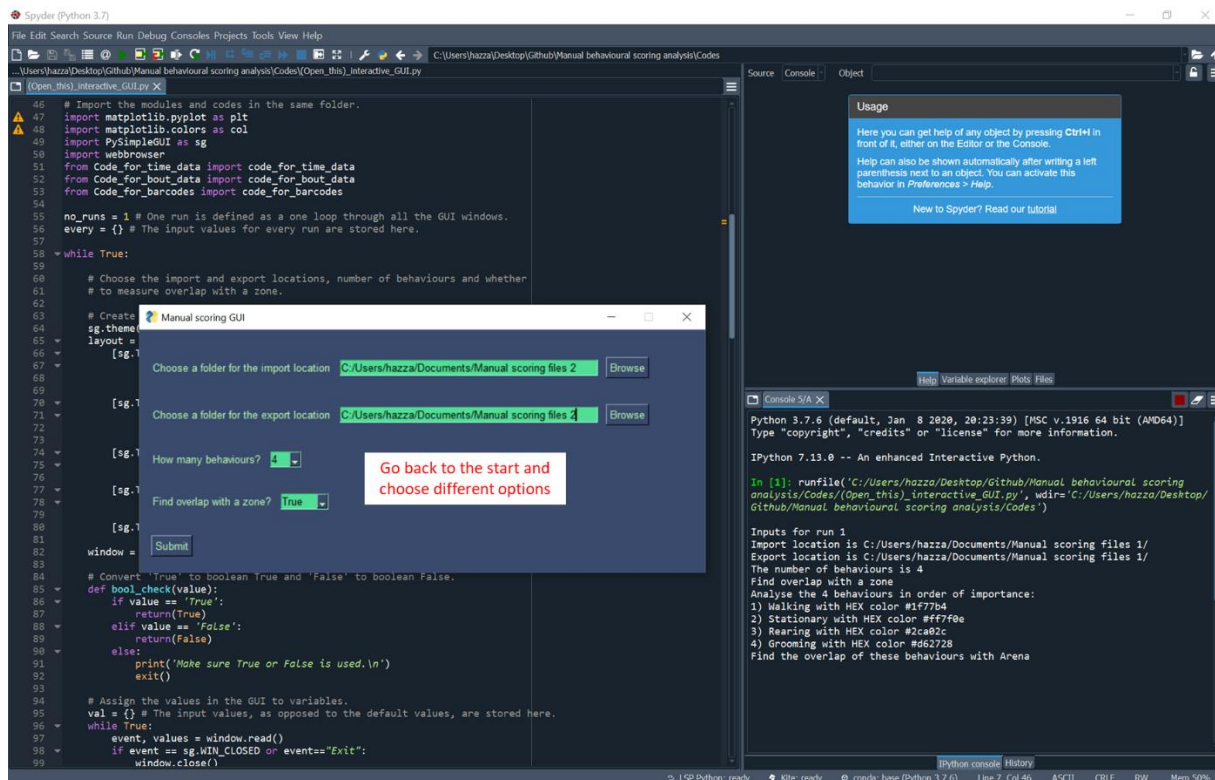
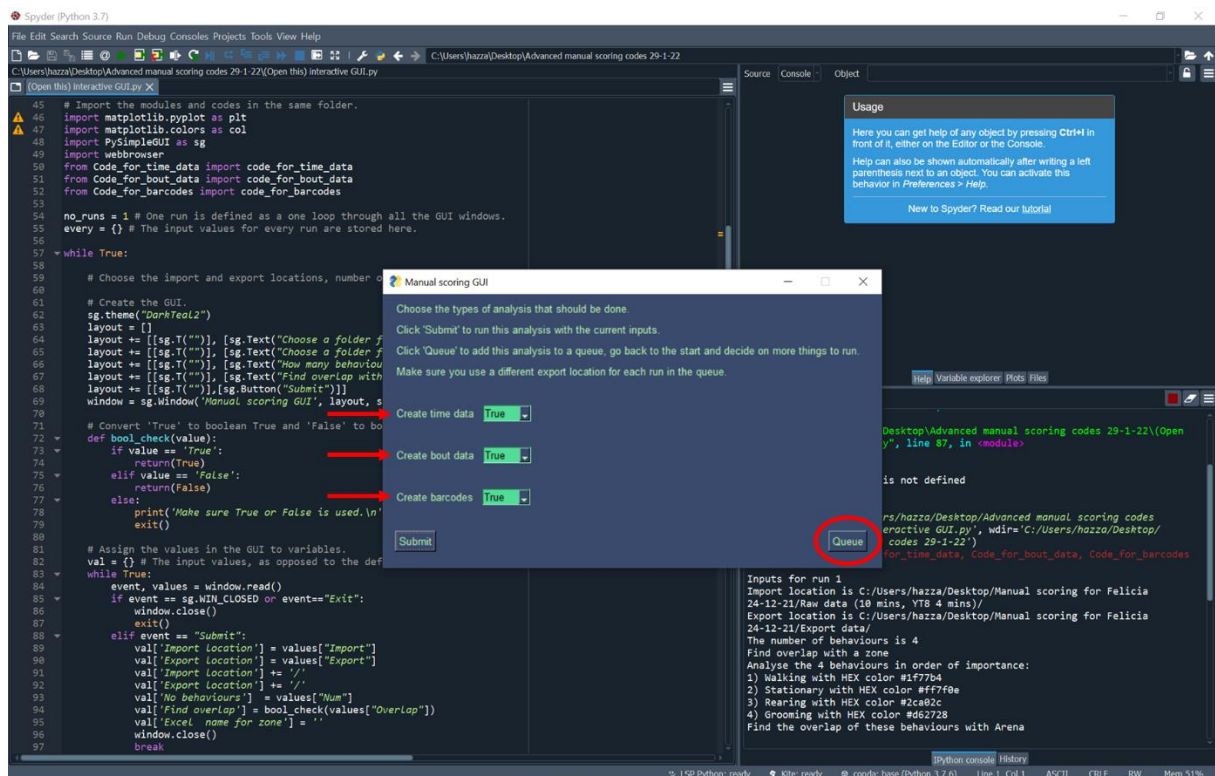
- Fill in the column names from excel and custom names for each behaviour and zone. Also, click on the link to find different HEX colour codes for each behaviour. Copy the 6-digit code and add a “#” at the start. The behaviours are in the order of preference, so if grooming overlaps with walking for example, only grooming will be counted. This will make all the behaviours mutually exclusive. Click submit.

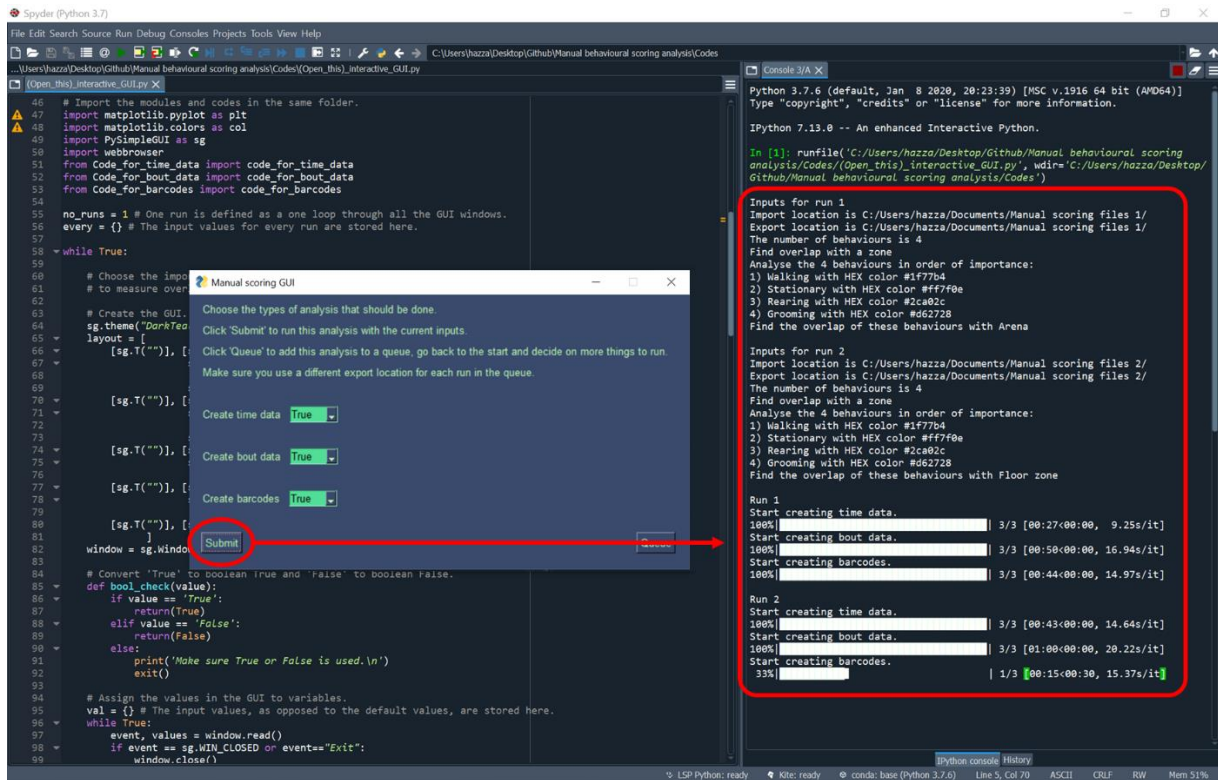


14. Choose which data you want exported. “Time data” gives the time doing each behaviour when they are all mutually exclusive to each other, “bout data” gives the bout frequencies and sum of durations and “barcodes” gives plots of the behaviours over time with a legend. Check the console to confirm the information that was put in and click “Submit”.



15. Alternatively, the “Queue” button can be pressed. This lets you go back to the start of the GUI, put in more data for analysis and run everything together. After you have queued all the data analysis you want, press “Submit”.





16. Go into the export folders for the results.

