**Installation and Use of TardigradeTraker**

For Mac or Linux (Unix based):

*Downloads:*

1. Install Anaconda (will install Python 3)
2. Download and install Visual Studio Code
3. Download the Tardigrade Tracker Software from GitHub and save it to your desktop.
   1. The file should contain the following.
      1. TardigradeTracker.YAML
      2. TardigradeTraker.py
      3. TrajectoryTracker.py
   2. Download Test Videos [here](https://drive.google.com/drive/folders/1HrRn6jHbMnu1ERJOPAouhAAELKpub8LO?usp=sharing) and place them in the same directory as the code.
4. Create a clean virtual environment for TardigradeTraker using the following code in terminal.

$$ conda env create -f TardigradeTracker.yaml

1. Check environment creation using the following line.

$$ conda env list

1. Open Visual Studio Code and open the TardigradeTracker.py file
2. Click the Play button in the top right corner
3. The code will take a few minutes to run, then a finder window will open.
4. Finde
5. Click the video to select a box surrounding the tardigrade (draw the box big enough so the tardigrade never leaves the box throughout the video)
6. Next ascertain that the tardigrade is circled throughout the video duration by the algorithm
   1. You can adjust contrast, brightness, and threshold to get the best fit
7. Hit Run
8. This will generate two new files in the TardigradeTraker folder a video showing the circled tardigrade and a CSV file containing extracted measurements.

For Windows

1. Install Anaconda (will install Python 3 and lots of other fun stuff)
2. Download TardigradeTraker.py and save it to your desktop.
3. Open command line
   1. Click the Windows Start Button. In the search box type Anaconda Prompt
4. In the command line copy the following code (if any of these do not work, google or ChatGPT the error you get)

pip install --upgrade pip.

pip install numpy

pip install easygui

pip install opencv-python

1. Copy the following into the command line and hit enter.

python3 ~/Desktop/TardigradeTraker.py

1. To test out the software click on the video found in the TardigradeTraker file using the window that opened when you ran the program.
2. Click the video to select a box surrounding the tardigrade (draw the box big enough so the tardigrade never leaves the box throughout the video)
3. Next, ascertain that the tardigrade is circled throughout the video duration by the algorithm.
   1. You can adjust contrast, brightness, and threshold to get the best fit.
4. Hit Run
5. This will generate two new files in the TardigradeTraker folder a video showing the circled tardigrade and a CSV file containing extracted measurements.