

Sphero Research Project

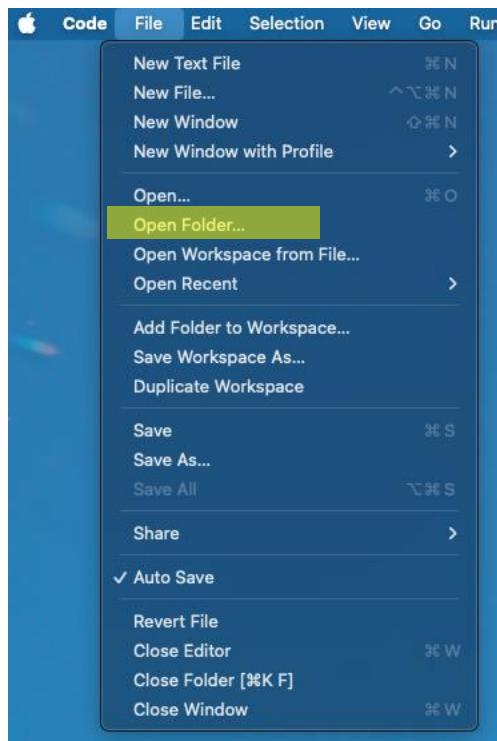
Setting Up Visual Studio Code & Sphero Code

FIRST TIME SETUP (VS CODE & GIT REPO):

1. **Download and Install** Microsoft Visual Studio Code (VS Code):

(Mac/Windows): <https://code.visualstudio.com/download>

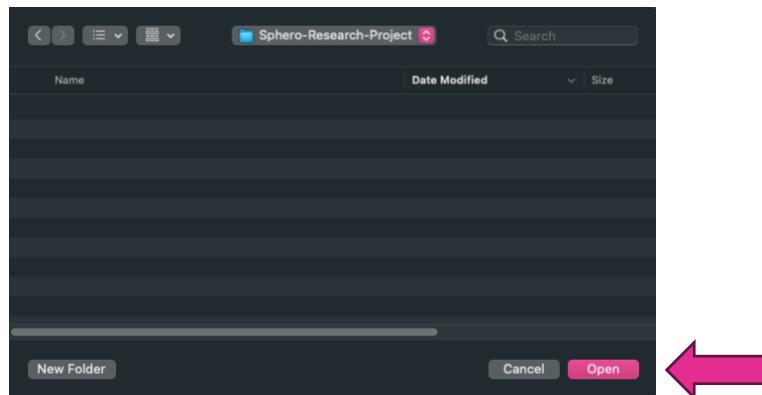
2. **Open VS Code → File → Open Folder**



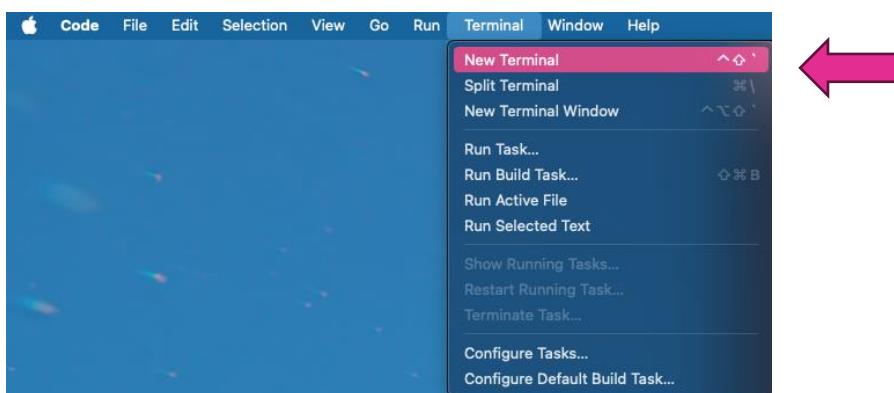
3. Create a New Folder:

- Make a new folder called “Sphero-Research-Project” wherever you would like to save the project files.

4. Click Open: to use this empty folder as your project directory.



5. Click Terminal → New Terminal

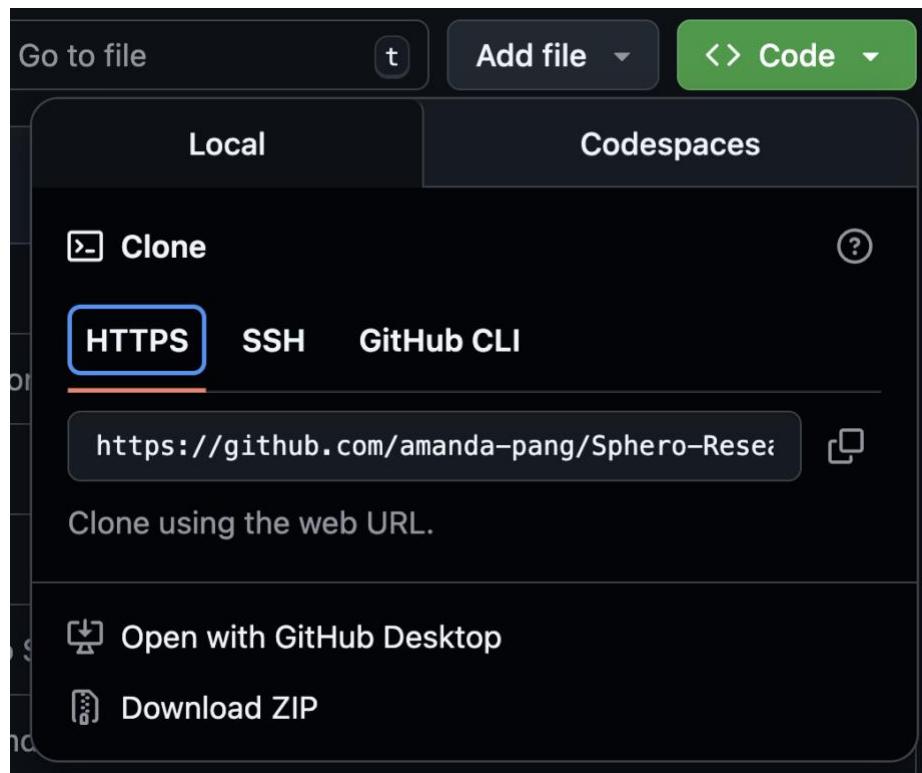


6. **Clone the Git Repository:** get a local copy of all necessary files at this link:

<https://github.com/amanda-pang/Sphero-Research-Participants>

- **METHOD 1:**

- Clone the git repo by clicking on the “code” button and copying the link shown in the screenshot below



- Copy and paste this into your new terminal:
 - **git clone [THE LINK YOU COPIED]**
 - **git clone https://github.com/amanda-pang/Sphero-Research-Participants.git**

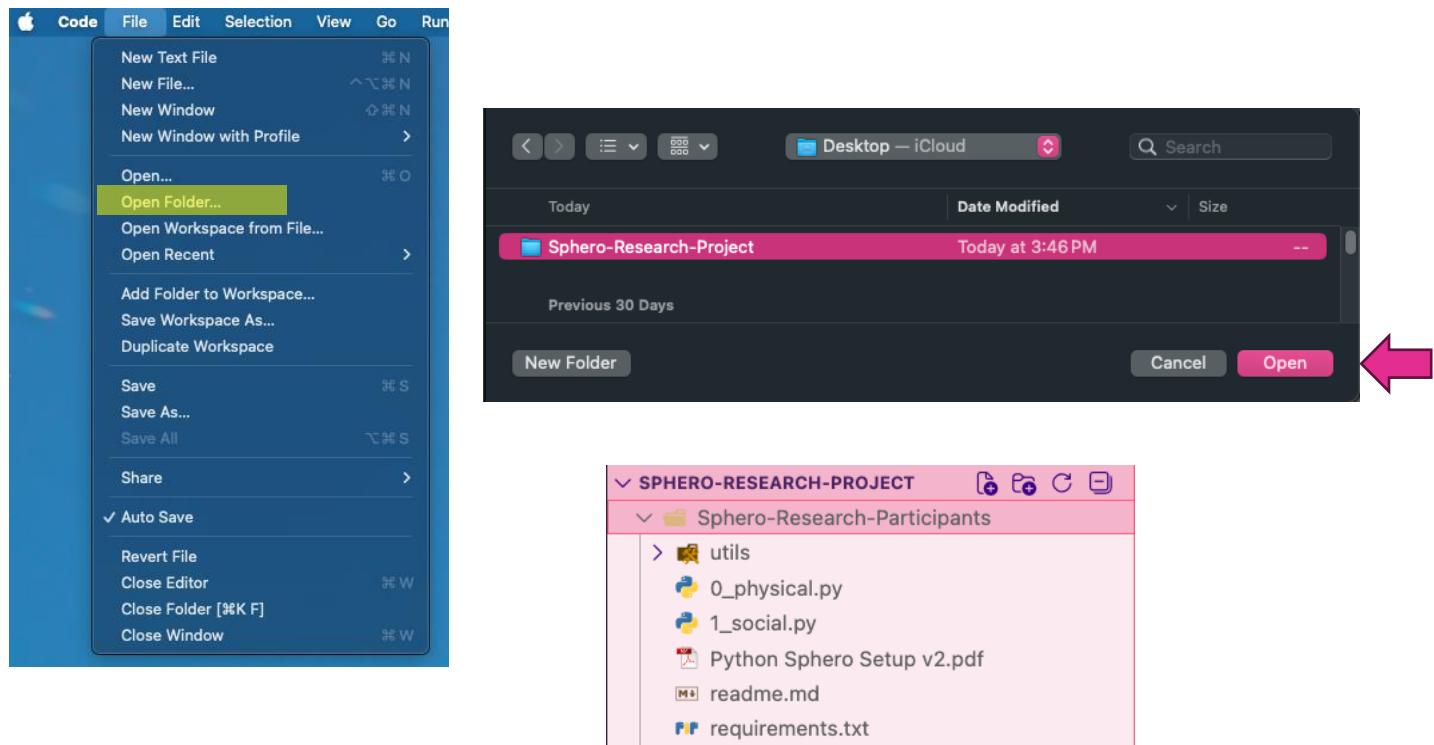
- **METHOD 2:**

- Download github desktop
 - Select “Open with GitHub Desktop” after clicking on Code

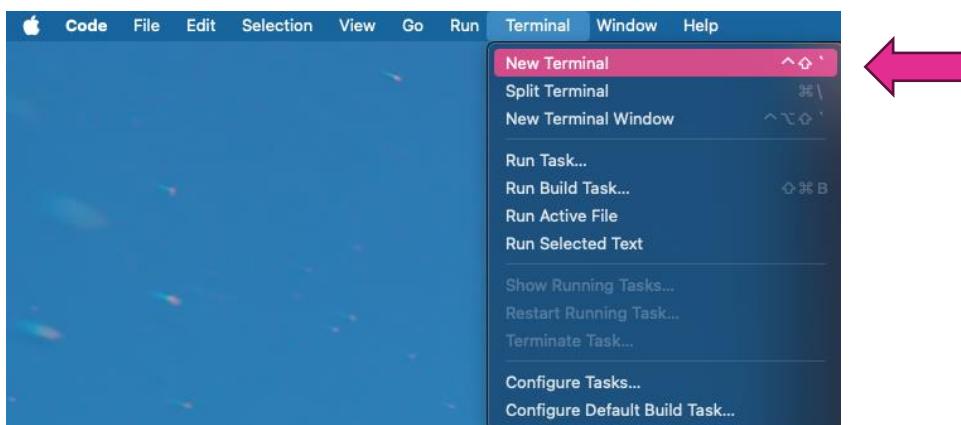
RUNNING YOUR SPHERO (FIRST TIME)

1. Open VS Code → File → Open Folder → Sphero-Research-Project

- Open the folder where you've saved all the project files

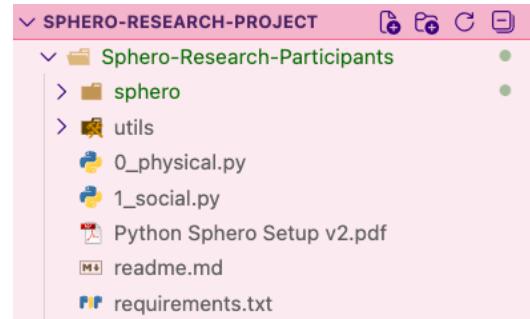


2. Click Terminal → New Terminal



3. Install your virtual environment: Move into the Sphero-Research-Participants directory and execute the following commands one by one in your terminal:

- o **cd Sphero-Research-Participants**
 - (if you are not already in the Sphero-Research-Participants directory)
- o **Python -m venv sphero**
- o **source sphero/bin/activate**
- o **pip install -r requirements.txt**
 - (or if this doesn't work, try pip3 install -r requirements.txt)



```
(base) amanda_mac@Amandas-MacBook-Pro Sphero-Research-Participants % source sphero/bin/activate
(sphero) (base) amanda_mac@Amandas-MacBook-Pro Sphero-Research-Participants %
(sphero) (base) amanda_mac@Mac Sphero-Research-Participants % pip install -r requirements.txt
```

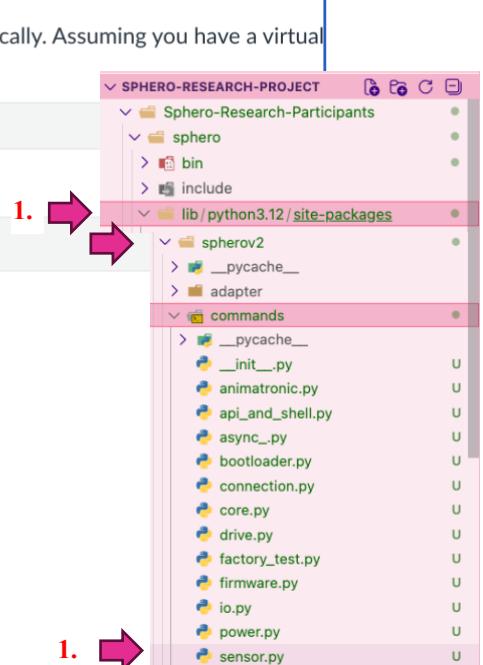
4. Make one change to the sphero2 library following instructions in the screenshot below:

The sphero2 library on PyPI has a bug where collision events produce an error before the on_collision callback is reached.

You can make a manual change to the `sensor.py` file in the library to get collisions working locally. Assuming you have a virtual environment running and the library is already installed, open this file:

1. `\venv\lib\site-packages\sphero2\commands\sensor.py``
2. Go to line 116 and change the last letter in the string from 'L' to 'h'.

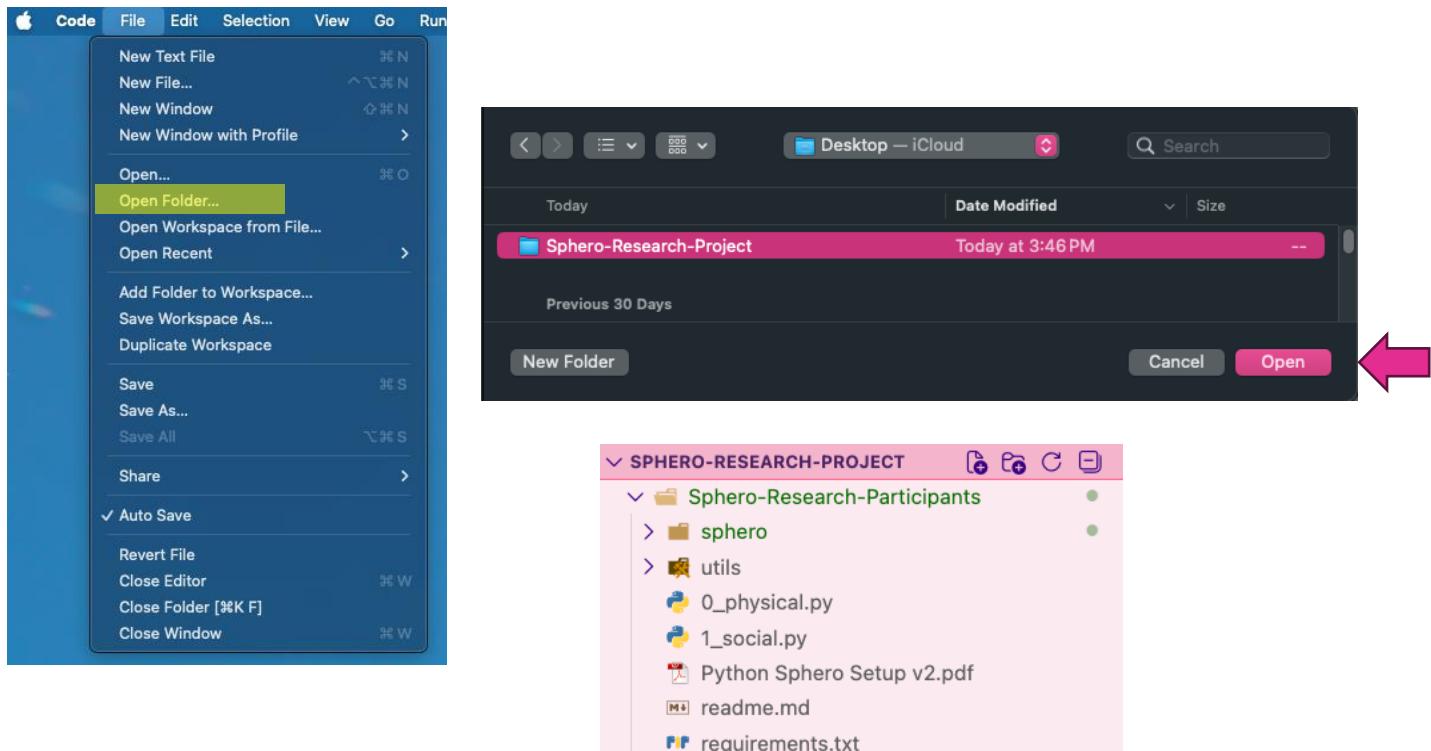
```
115 2. ...def __collision_detected_notify_helper(listener, packet):
116     ...    unpacked = struct.unpack('>3hB3hBh', packet.data)
115 2. ...def __collision_detected_notify_helper(listener, packet):
116     ...    unpacked = struct.unpack('>3hB3hBh', packet.data)
```



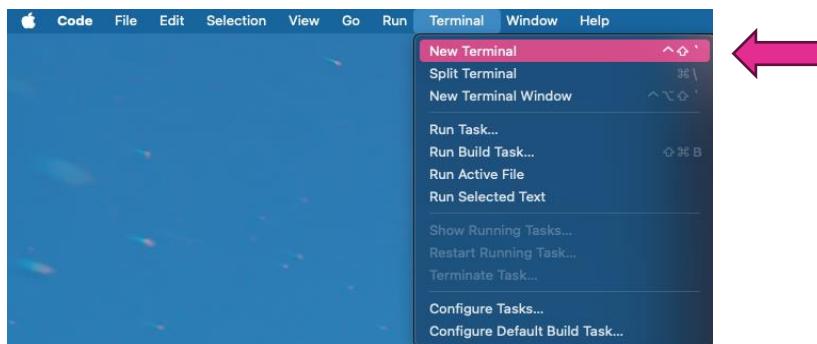
RUNNING YOUR SPHERO (EVERY TIME)

1. Open VS Code → File → Open Folder → Sphero-Research-Project

- Open the folder where you've saved all the project files



2. Click Terminal → New Terminal



3. Activate your Virtual Environment: type these commands one by one into your terminal

- cd Sphero-Research-Participants
- source sphero/bin/activate

4. Running Physical / Social: Sphero Research Conditions

4a. If you are currently in the “Physical” arm, type this command in the terminal:

- python 0_physical.py

```
(sphero) (base) amanda_mac@Mac Sphero-Research-Participants % python 0_physical.py
```

4b. If you are currently in the “Social” arm, type this command in the terminal:

```
python 1_social.py
```

```
(sphero) (base) amanda_mac@Mac Sphero-Research-Participants % python 1_social.py
```

5. That's it! Just leave your Sphero buddy nearby while you work, and leave VS Code open with the program running in the background.

- Use our website to track the start and end of your study session, and log when you complete a stretch.

5. Every day when you try to rerun the code, you'll need to activate your virtual environment first, then execute the file.

A. Paste this command into your terminal to activate virtual environment:

- source sphero/bin/activate
- python “your_arm.py”

More instructions on the next page →

Disconnect & End

1. When you are **done** with your studying/working session:

- **Disconnect** your Sphero and **quit** the program by typing this into your terminal:

- **Ctrl z**

```
❸ (sphero) (base) amanda_mac@Mac Sphero-Research-Participants % python 0_physical.py
^Z
zsh: suspended  python 0_physical.py
```

- **deactivate**

- optional: to exit the virtual environment

2. Navigate to our website, and click “**End Study Session**”.

- If you forget to log any events (start/end time, or a stretch break), you may manually enter this information on the “*Manual Entry*” tab.

Thank you for participating in our study!!