

分野別演習
2023/07/07

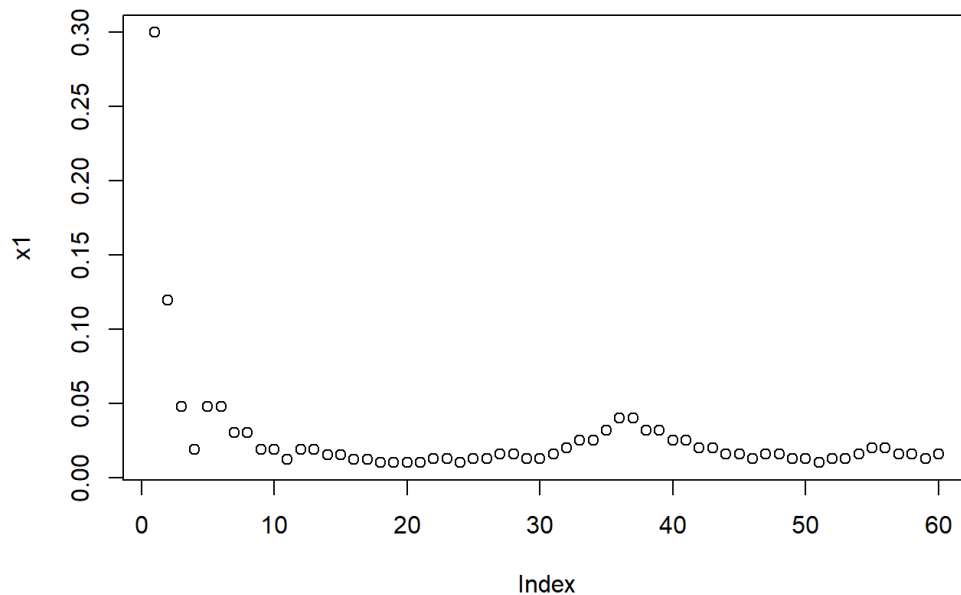
The image features a large Python logo on the left, composed of two interlocking snakes, one blue and one olive green. To the right of the Python logo is a large blue circle containing a white capital letter 'R', representing the R programming language logo.

R

peripheral_staircase.psyexp

Orientation discrimination in peripheral vision

- Staircasing on stimulus contrast for estimating threshold
- 1-up 2-down staircase converges to 71% accuracy
- $P(\text{correct})^2 = P(\text{incorrect}) = 0.5$, $P(\text{correct}) = 0.71$
- Threshold can be estimated with small numbers of trials



trials Properties

Name

trials

loopType

staircase

Is trials

☒

nReps

\$

60

start value

\$

0.3

max value

\$

0.5

min value

\$

0.01

step sizes

\$

[0.4,0.4,0.2,0.2,0.1]

step type

log

N up

\$

1

N down

\$

2

N reversals

\$

8

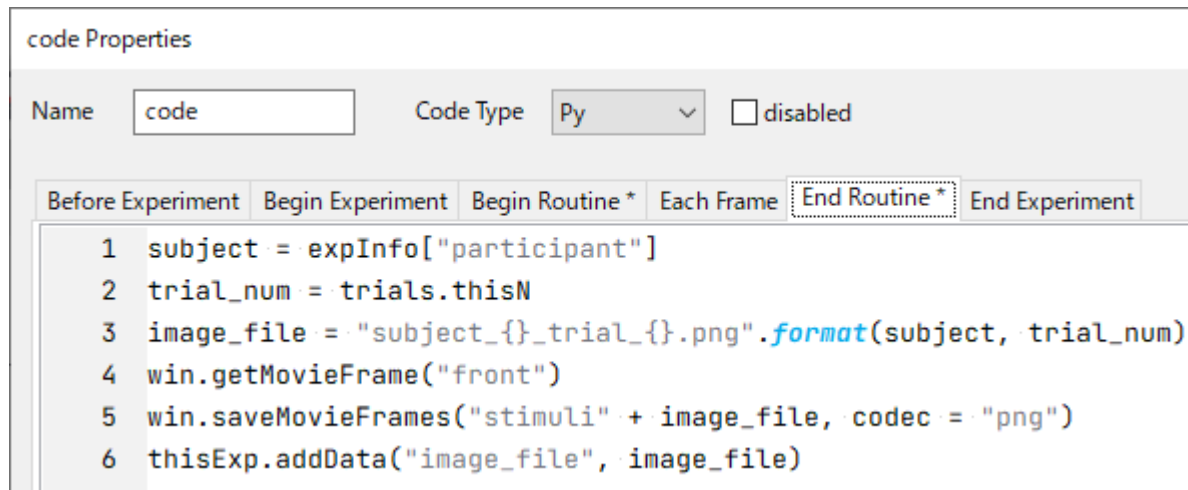
Help

OK

Cancel

stimulus_generator.psyexp

- This experiment saves the screen in each trial as png
- Set grating contrast at the threshold value estimated by staircasing
- Save upward and downward images as “s1.png” and “s2.png”
- These images will be used in online experiment (since PsychoPy does not offer grating component for online use)



```
code Properties

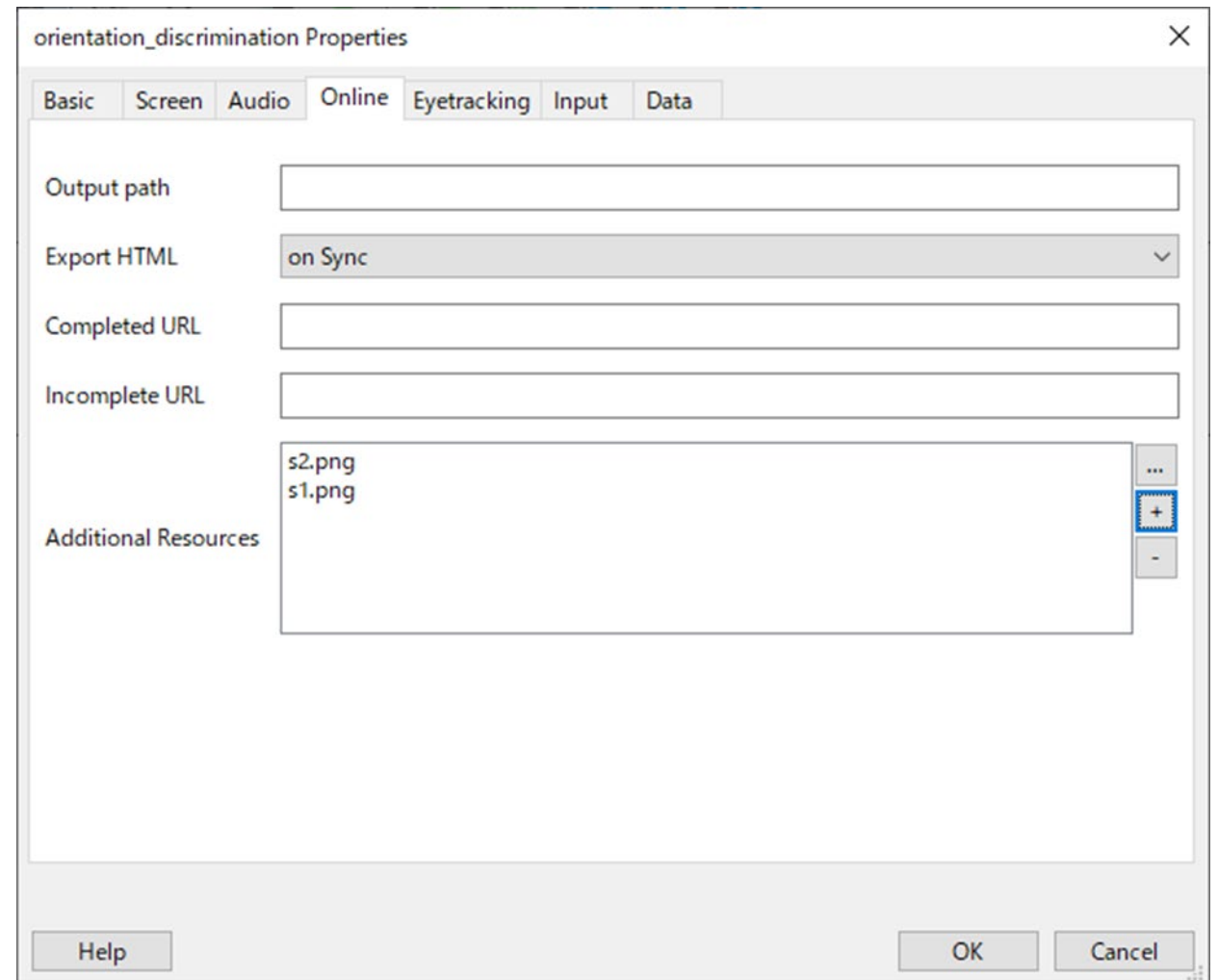
Name: code Code Type: Py ☐ disabled

Before Experiment Begin Experiment Begin Routine * Each Frame End Routine * End Experiment

1 subject = expInfo["participant"]
2 trial_num = trials.thisN
3 image_file = "subject_{}_trial_{}.png".format(subject, trial_num)
4 win.getMovieFrame("front")
5 win.saveMovieFrames("stimuli" + image_file, codec = "png")
6 thisExp.addData("image_file", image_file)
```

Preparation for online experiment (v2022.1.4)

- Open peripheral_discrimination.psyexp
- Click Setting > Online
- Make Output path empty
- Specify Additional Resources (image files, csv for experimental parameters, etc.)



The screenshot shows the 'orientation_discrimination Properties' dialog box with the 'Online' tab selected. The dialog has several tabs: Basic, Screen, Audio, Online, Eyetracking, Input, and Data. The 'Online' tab contains the following fields and controls:

- Output path:** An empty text input field.
- Export HTML:** A dropdown menu currently set to 'on Sync'.
- Completed URL:** An empty text input field.
- Incomplete URL:** An empty text input field.
- Additional Resources:** A list box containing 's2.png' and 's1.png'. To the right of the list box are three buttons: an ellipsis button, a plus button (highlighted with a blue border), and a minus button.

At the bottom of the dialog are three buttons: 'Help', 'OK', and 'Cancel'.

Preparation for online experiment (v2022.1.4)

- Open Code components
- Change Code Type to Auto->JS
- Check if everything is translated correctly

code Properties ×

Name Code Type ☐ disabled

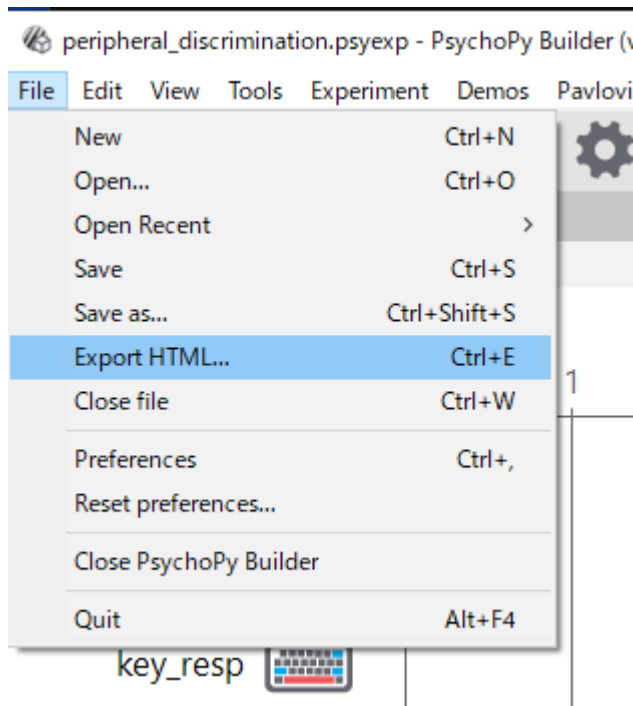
Before Experiment Begin Experiment * Begin Routine * Each Frame End Routine * End Experiment

```
1 if condition[trials.thisN - 1] % 2 == 0:
2     stim = "s1.png"
3     correctAns = 'up'
4 else:
5     stim = "s2.png"
6     correctAns = 'down'
```

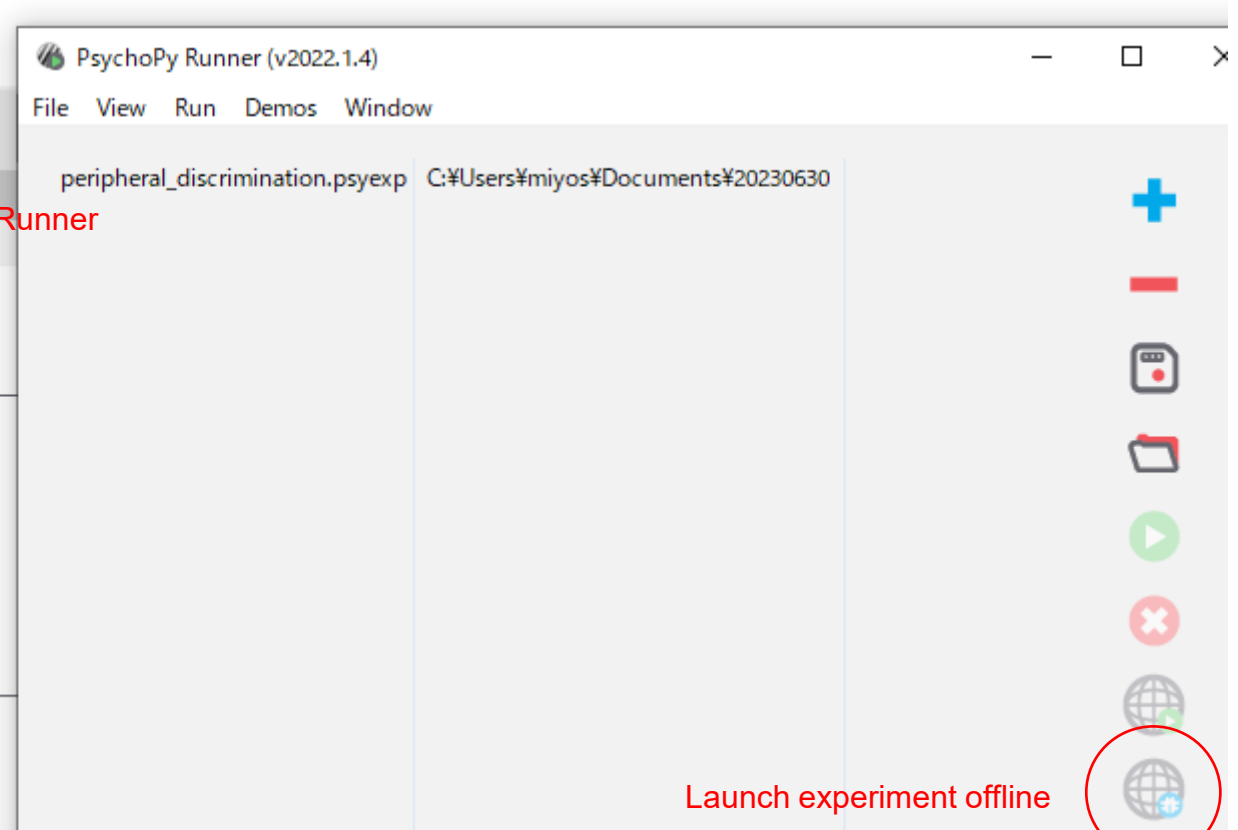
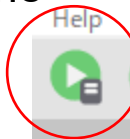
```
1 if (((condition[(trials.thisN - 1)] % 2) == 0)) {
2     stim = "s1.png";
3     correctAns = "up";
4 } else {
5     stim = "s2.png";
6     correctAns = "down";
7 }
8
```

Preparation for online experiment (v2022.1.4)

- Click File > Export HTML
- The experiment will be translated into html & JavaScript
- Save created js file as it is
- Then launch translated experiment offline



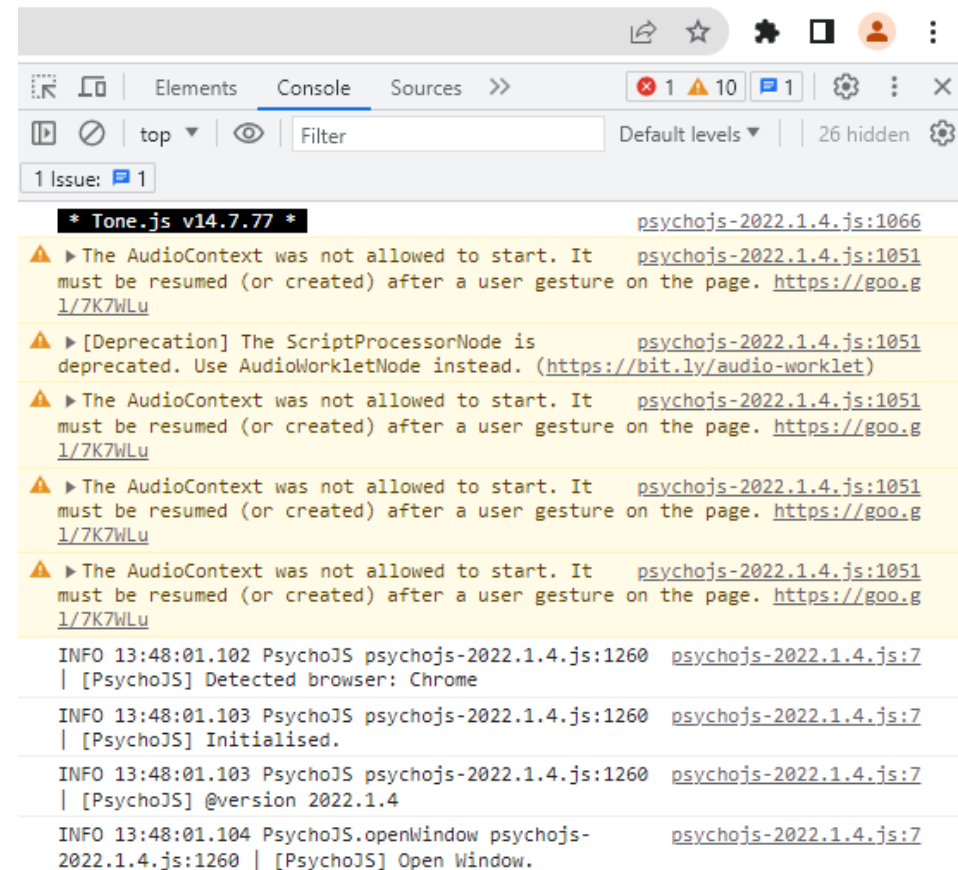
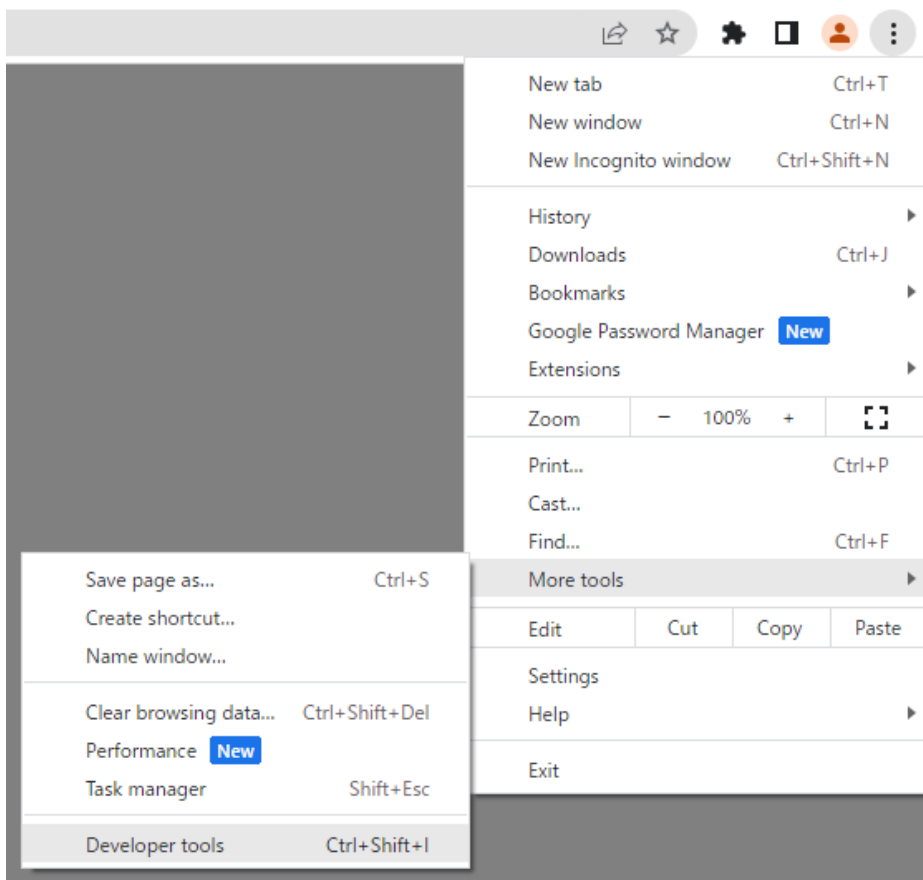
Add the experiment to Runner



Launch experiment offline

Local debugging

- You can use Developer tools on Google Chrome for troubleshooting



Local debugging

- Some functions cannot be translated into html/JavaScript (e.g., several functions of numpy)
- You need to directly modify your JavaScript for those occasions (check followings)

Official documents

<https://www.psychopy.org/online/>

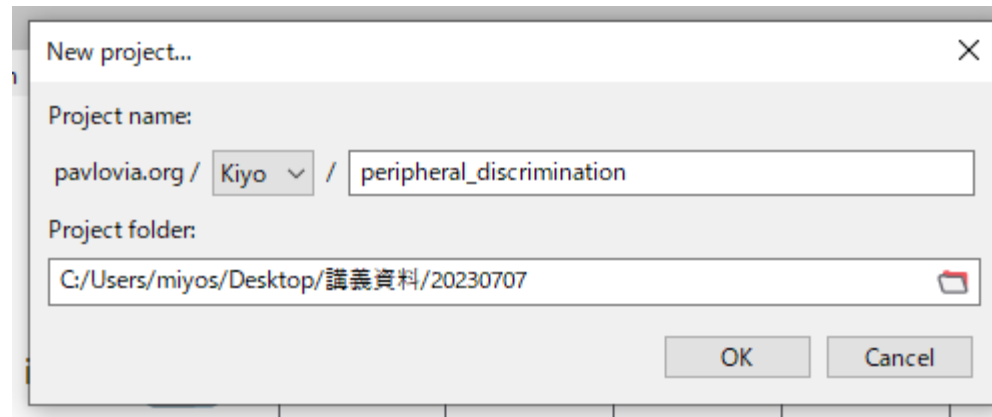
<https://workshops.psychopy.org/3hrs/online.html>

PsychoPy version 2020.1.3-2020.2.10, Python to JavaScript Crib Sheet

<https://docs.google.com/document/d/183xmWdgSbnJZHMgf3yWpieV9Bx8y7fOCm3QKkMOOXFQ/edit#heading=h.fbo8f8y1ynwk>

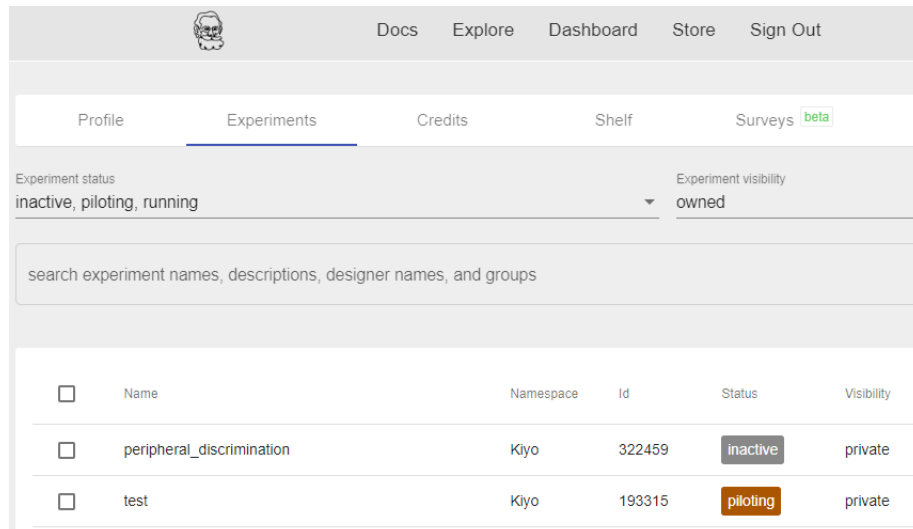
Register experiment to Pavlovio

- [Pavlovio](#): official experiment server for PsychoPy
- Register your email on Pavlovio
- On PsychoPy Builder, click Pavlovio.org > User > Log in to Pavlovio
- Then, click Pavlovio.org > Sync > Create a project
- Name the project and specify the folder location that includes your materials



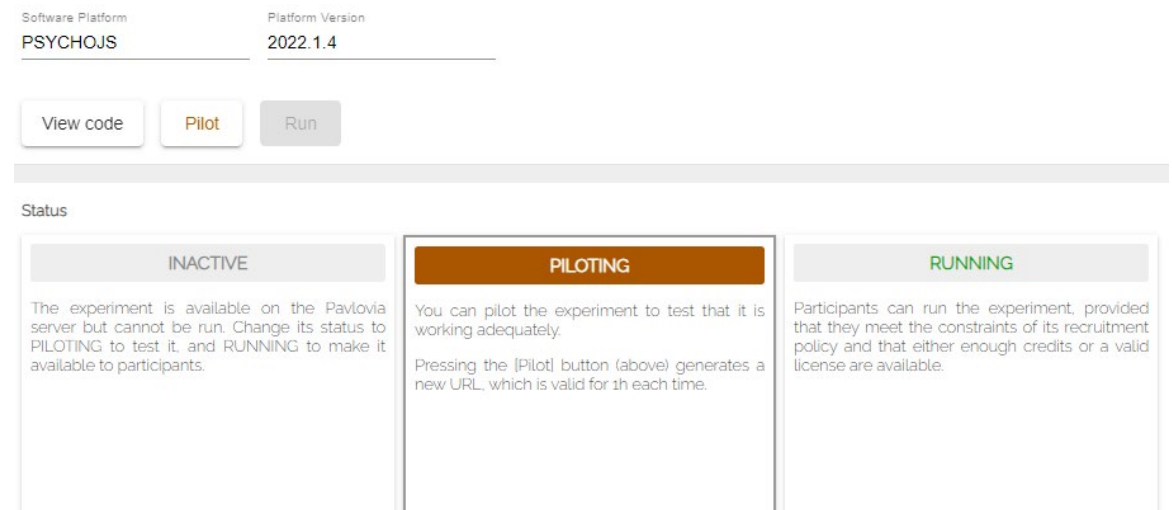
Launch your experiment on Pavlovia

- Open Dashboard on Pavlovia, where you can find your project
- Change the status into PILOTING, and click Pilot
- Your experiment will be launched online with a temporal URL valid for an hour
- In this way of use, data csv will only be stored into participants' local computer
- You need to purchase Credit to conduct large-scale online experiments
- You can also distribute your experiment on crowd-sourcing platforms (Prolific, MTurk, Yahoo, etc.)



The screenshot shows the Pavlovia Dashboard interface. At the top, there is a navigation bar with a profile icon, 'Docs', 'Explore', 'Dashboard', 'Store', and 'Sign Out'. Below this, a secondary navigation bar includes 'Profile', 'Experiments' (which is underlined), 'Credits', 'Shelf', and 'Surveys beta'. The main content area shows 'Experiment status' as 'inactive, piloting, running' and 'Experiment visibility' as 'owned'. A search bar is present with the placeholder text 'search experiment names, descriptions, designer names, and groups'. Below the search bar is a table with columns: Name, Namespace, Id, Status, and Visibility.

	Name	Namespace	Id	Status	Visibility
<input type="checkbox"/>	peripheral_discrimination	Kiyo	322459	inactive	private
<input type="checkbox"/>	test	Kiyo	193315	piloting	private



The screenshot shows the Pavlovia Experiment Status page. At the top, it displays 'Software Platform' as 'PSYCHOJS' and 'Platform Version' as '2022.1.4'. Below this, there are three buttons: 'View code', 'Pilot' (highlighted in orange), and 'Run'. The main section is titled 'Status' and contains three panels: 'INACTIVE', 'PILOTING' (highlighted in orange), and 'RUNNING'.

INACTIVE

The experiment is available on the Pavlovia server but cannot be run. Change its status to PILOTING to test it, and RUNNING to make it available to participants.

PILOTING

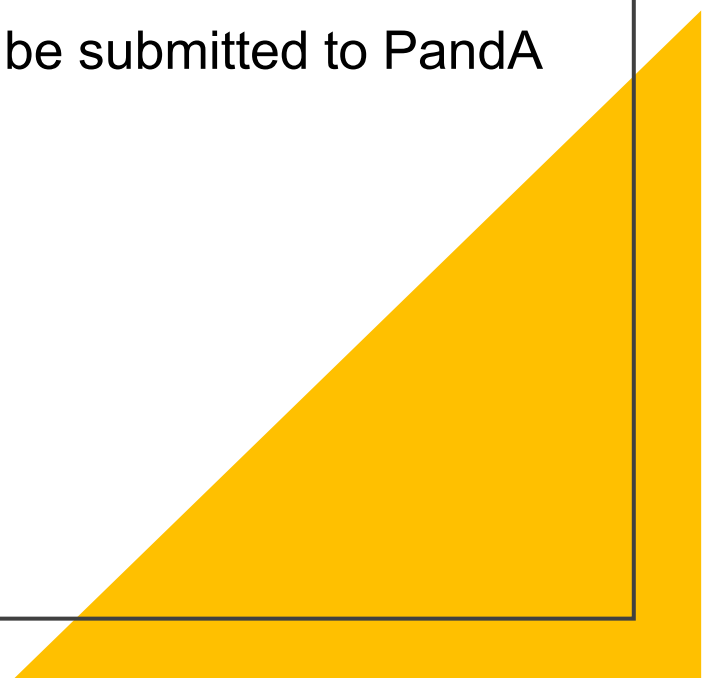
You can pilot the experiment to test that it is working adequately.

Pressing the [Pilot] button (above) generates a new URL, which is valid for 1h each time.

RUNNING

Participants can run the experiment, provided that they meet the constraints of its recruitment policy and that either enough credits or a valid license are available.

Homework

- Design your own experiment on PsychoPy and launch it on Pavlovia
 - Send an experiment URL to the other students and collect data from at least 2 participants
 - Conduct statistical analyses on your data and interpret the resulting patterns
 - Summarize your findings into a few-page document, which should be submitted to PandA with related materials (e.g., py/html/JavaScript codes)
- 
- A large yellow triangle is positioned in the bottom right corner of the slide, pointing towards the top right.