

This walkthrough documents every single step (that I can remember) that I took in order to take my completed local PsychoPy experiment (SandwichStudy.psyexp), into an online study hosted on Pavlovia.org. I am hoping to write this in a very generalized way so that it applies to any PsychoPy study made using the builder, but my experience has only involved building the one study I have hosted online (which is documented [here!](#)).

Also included at the end are some common mistakes, FAQs, or other issues that I have encountered in giving back and helping people out on the PsychoPy discourse.

With that said, if there is some issue you are running into that is not covered in this walkthrough, the PsychoPy discourse, found here: <https://discourse.psychopy.org/>, is a great resource.

Please feel free to leave any comments about anything that is unclear, or any other tips you might have, and I will try to incorporate them into this guide as frequently as possible.

My ideas and opinions here are just my own, and only reflect my approach to using PsychoPy, and of course, all credit for the amazing PsychoPy software goes to:

Peirce, J. W., Gray, J. R., Simpson, S., MacAskill, M. R., Höchenberger, R., Sogo, H., Kastman, E., Lindeløv, J. (2019). PsychoPy2: experiments in behavior made easy. Behavior Research Methods. 10.3758/s13428-018-01193-y

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So you have a PsychoPy study to put online...

Preliminary Steps:

Honestly, a better general overview of getting started with online studies can be found here: <https://www.psychopy.org/online/index.html>, but I know jumping between lots of different guides isn't very fun so I will try to cover the main points here.

Pavlov.org vs Personal Experiment Hosting:

One of the first things you need to decide is how you will be hosting your online experiment. The easiest way is to just host it through <https://pavlov.org/>. This allows for easy syncing directly from your PsychoPy experiment, and the experiment is hosted directly on their servers, which is also where the data is stored. The downside to this is that pavlov.org charges a small fee (about 20 cents) every time a subject runs (and fully completes) your study (see <https://pavlov.org/docs/store/pricing>). This fee is in addition to any payment you use to incentivize the subject such as a reward through Sona or prolific. But this fee goes to supporting PsychoPy, and the credits used to run these subjects can be easily bought with excess grant money if you have it available.

The other option is to host the javascript version of your experiment on your own server, but I don't know how to do that, and there is very little support available for that option if you run into troubles, more info can be found here: <https://www.psychopy.org/online/fromBuilder.html>

The rest of this guide will be assuming that your study is hosted on Pavlov.org.

Creating a Pavlov.org account:

If you are hosting your study on pavlov.org then you first need to make an account with them: https://gitlab.pavlov.org/users/sign_in. This is completely free, and is needed to be able to upload studies to Pavlov.org.

Changes and Steps within your PsychoPy experiment:

Once you have your pavlov.org account created you can jump into making the required changes in your local PsychoPy experiment.

Converting Python code to JS code:

If your experiment does not involve any custom code components, then you can skip this step. Otherwise the main difficulty in putting PsychoPy experiments online is that you need to convert your Python code to JS code.

Amazingly, with the release of PsychoPy 2020 (of course the release right after I finished putting my experiment online...), they have introduced a feature that will automatically convert your Python code to JS code. To enable this, click on your code component, then click on code type (near the top of the component details), and select Auto --> JS. This should split the code component detail screen, and automatically translate your python code on the left to JS code on the right.

This feature seems to work really really well for most code components you would have in most experiments, but if you would prefer to manually make any changes to the JS code for whatever reason I have found <https://www.w3schools.com/js/default.asp> is a great place to start.

You have to ensure that every single code component is translated to JS, otherwise when piloting your study on Pavlovia.org you will likely run into the issue where the experiment gets stuck on initializing (For example: <https://discourse.psychopy.org/t/pavlovia-pilot-stuck-on-initialising-the-experiment/11592>)

Because the translation to JS can occasionally cause some issues, I like to try to limit the amount of code in my PsychoPy experiment to really simple things (such as defining variables) which translate really well, and otherwise seeing if there are ways I can perform the same functionality that my code is doing with the components already in the builder. This is actually surprisingly doable with some clever usage of condition files and loops, so if you can think of a way to easily avoid using a code component I would recommend doing so.

Change Experiment Settings:

Once all code is converted, you may need to make a few changes to experiment settings (the icon at the top of the builder with a small gear on it)

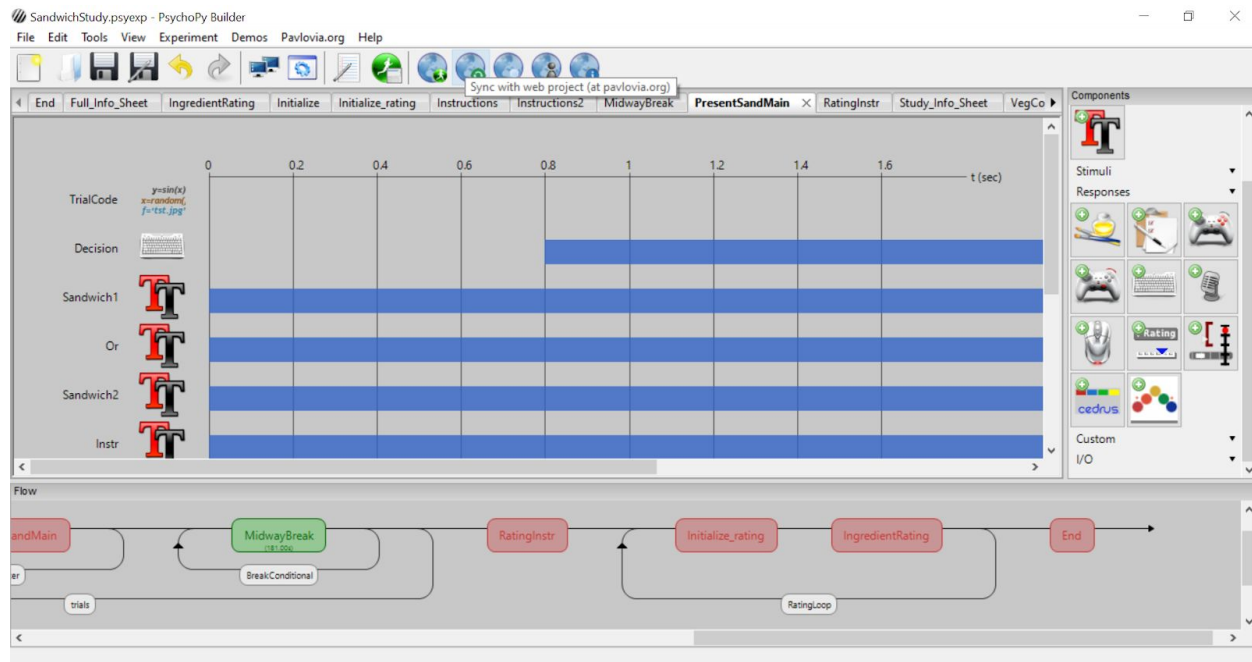
In the Data tab, I do not believe at this time that xlsx files can be saved for online studies, so you want to ensure you are only trying to save the .csv file options.

In the Online tab, there is a field labeled Output path. This is the file name that will contain everything needed when you finally export your Python experiment to a JS experiment. I recommend just leaving this as html. When you sync your study with Pavlovia.org this html folder will be created locally in the same folder where your .psyexp file is.

Syncing Experiment and Creating Pavlovia.org Project:

After completing the above steps, you should be all ready to sync your PsychoPy experiment up with Pavlovia.org. First things first you need to log into Pavlovia.org from PsychoPy. This is the icon in the upper bar with a small person figure on it, and filling in your login information

Next step is to actually sync your project to pavlovia.org. To do this hit the button hovered over in the picture below (the one with the arrows in a circle, classic sync symbol):



When you press this button for this first time on a new project a window will appear informing you that this file does not belong to any existing project. Go ahead and hit the button saying Create a Project. This will open another window where you can fill in details such as the name you want the experiment to have on pavlovia, a description of the experiment, and any tags for the experiment. See <https://www.psychopy.org/online/usingPavlovia.html> for more details.

When you sync a project for the first time it might take a few minutes to create the local JS files, and upload everything to Pavlovia. You can see if this process is completed by logging on to pavlovia.org, going to your dashboard, then experiments, and you should see your new study listed there.

Piloting, Debugging, and Enabling the Study on Pavlovia.org:

Once you have the experiment showing up on your dashboard, you can click on it and it should take you to the experiment details. Here you can do things like assigning credits for use in the experiment, head over to the gitlab repository which contains all your raw files, or download the data from the experiment.

The best way to test your experiment is to put it into Pilot mode. This will create a temporary pilot key that allows you to run the experiment without consuming credits from your personal computer. In a perfect world you would pilot your study and it works perfectly, and then you can either focus on setting up automatic credit granting (below), or go ahead and deploy your study by setting it to running, and distributing the experiment url.

More likely, some issues will occur when you are piloting your study, which will require you to go back and edit the original PsychoPy experiment. If you can figure out what might be going wrong you can just make these changes in the PsychoPy experiment, and then re-sync it to pavlovia.org (using the same button shown in the image above), and then can keep re-piloting it until it works as you need it to.

If you don't know what exactly might be going wrong, one useful way to try to figure this out is by exiting full screen of the experiment (hitting esc once), and then inspecting the page (ctrl+shift+i on

windows, or right click and select Inspect), and then jumping over to the console tab. If there was an explicit error in the experiment online, it should show up as an error message in this window. Sometimes these errors help you understand what routine or component in your PsychoPy experiment is causing the issue, other times they don't, but it's worth a shot.

If you are totally stuck on how to get things to work, that would be a great time to look up the component that is giving you trouble here: <https://www.psychopy.org/builder/index.html>

Or hop over to the PsychoPy discourse here: <https://discourse.psychopy.org/>

If you do end up posting a question on these forums, it is really helpful to inspect your experiment console for errors (see paragraph above), and post this error alongside your question.

Hopefully this section will have helped you at least get your study online and mostly working!

Automatic Credit Granting with Sona:

PsychoPy already has documentation for how you can automatically grant credit for subjects recruited through Prolific found here: <https://www.psychopy.org/online/onlineParticipants.html>

And while the documentation for SONA is not currently complete, it follows a very similar approach to that outlined using Prolific.

Pavlov.org/PsychoPy Granting Automatic Credit through SONA

As with Qualtrics automatic credit granting (discussed here:

<https://www.sona-systems.com/help/qualtrics.aspx>), in Sona you must have the unique SURVEY_CODE option enabled, where subjects are identified by a study-specific, randomized survey code.

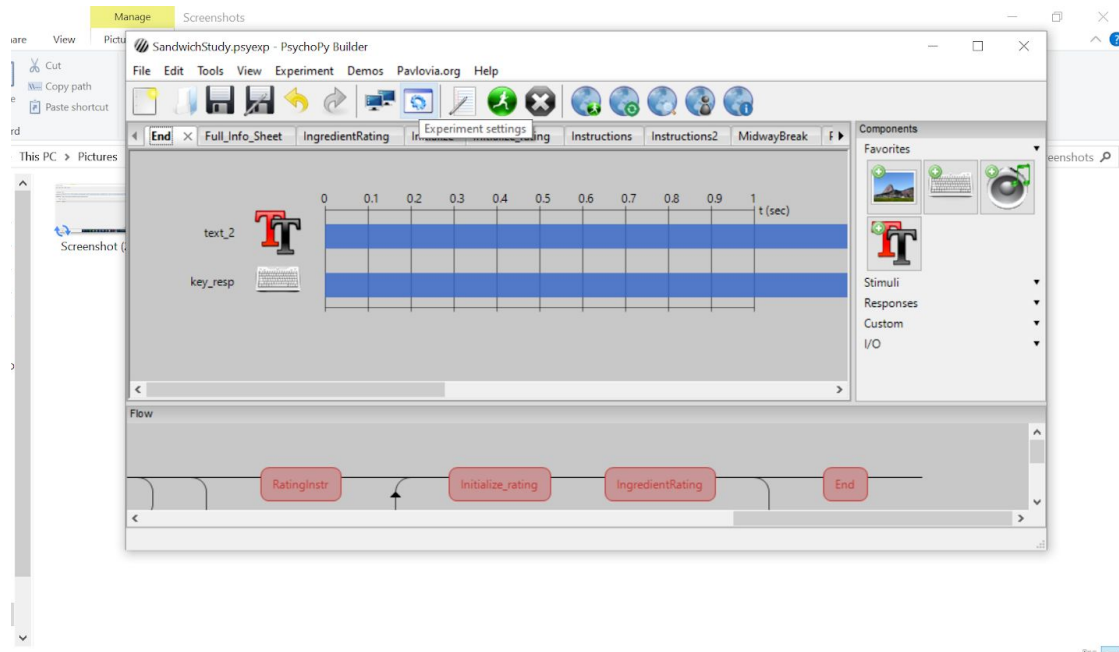
In your PsychoPy study, in the experiment info, you must have some input field that will take this Survey Code from Sona, such as 'participant', or 'id'. Then you can modify your study link in Sona to automatically fill this input field (in this example, it is participant), with the Survey Code from SONA, so if your study url is:

<https://run.pavlov.org/PavlovUser/StudyName/html>

Then in Sona you change this link to:

https://run.pavlov.org/PavlovUser/StudyName/html?participant=%SURVEY_CODE%

To get PsychoPy to automatically grant credit if the study is completed, go to your PsychoPy study, and open up experiment settings (The button with the gear on it)



Go to the Online tab, and edit the complete URL using the following template line, where experiment_id and credit_token should be filled in based on your study information in Sona.

\$"https://uci.sona-systems.com/webstudy_credit.aspx?experiment_id=EXPERIMENT_ID_HERE&credit_token=CREDIT_TOKEN_HERE&survey_code=+expInfo['participant']

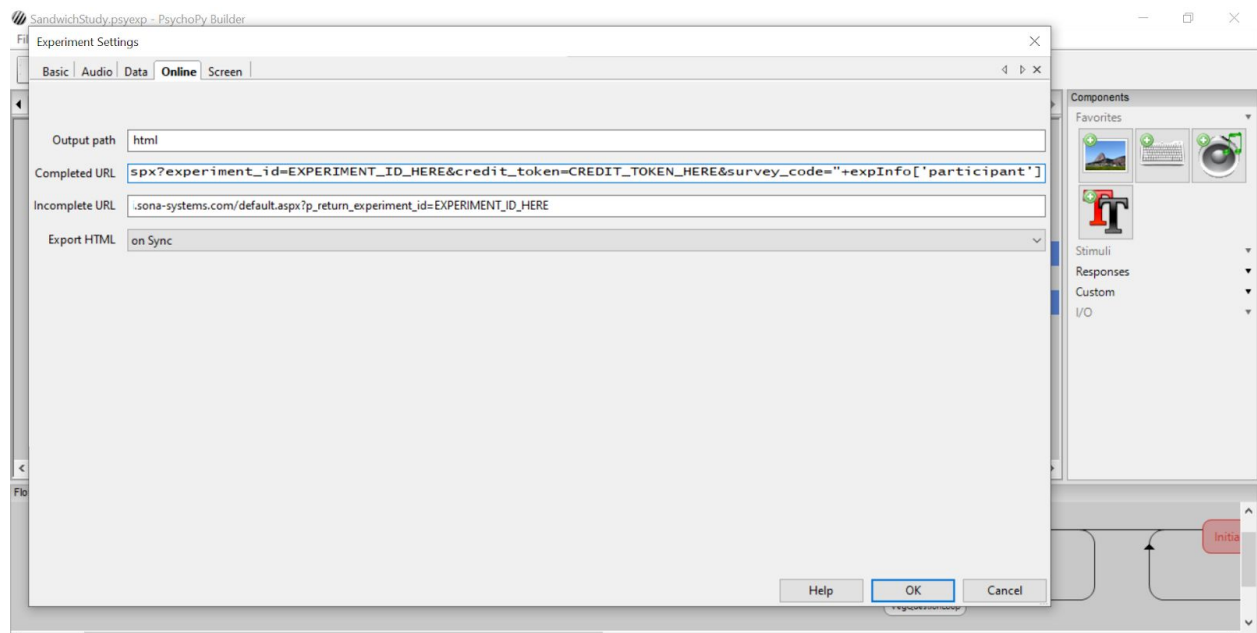
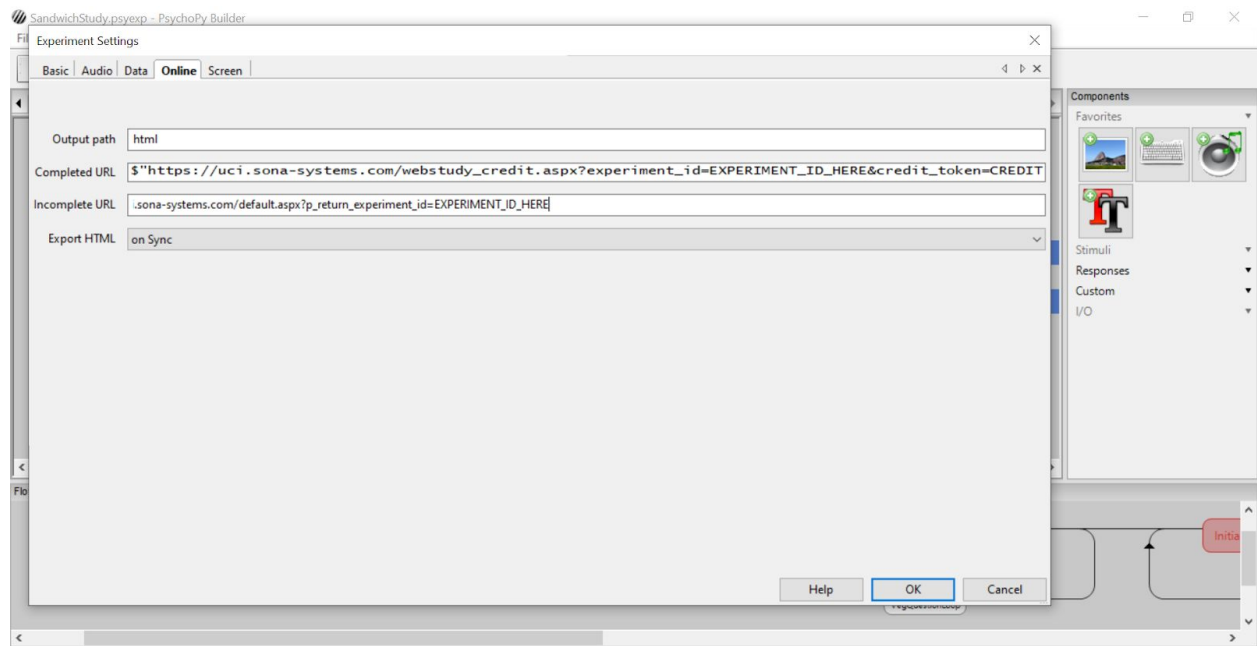
Make sure to use the \$ sign before this line, have the first part in " ", and do not include any extra spaces at the end of the first quotation mark section.

The same thing can be done for the incomplete URL without even creating a variable (so we don't need to use a \$ sign) by just including the experiment id, and not including the credit token or extra +expInfo['participant'] at the end. Since we are not combining two strings here we don't need to use any quotation marks, so long as you fill in the experiment id correctly.

For example:

https://uci.sona-systems.com/webstudy_credit.aspx?experiment_id=EXPERIMENT_ID_HERE

Example Images:



After doing this, you should be able to use the sample link with embedded id code from SONA, complete the experiment, and it should redirect you to the SONA page with the error of "**System Message:** No credit given, because you are not a participant, and therefore cannot sign up for this study."

When subjects actually complete this experiment using a valid Sona Survey Code, then it will automatically grant them credit once they complete the experiment.

Common Mistakes and FAQs:

I'll keep filling this in as I have time, but for now here are some links to the PsychoPy forum for common problems:

Experiment stuck on initializing:

<https://discourse.psychopy.org/t/pavlovia-pilot-stuck-on-initialising-the-experiment/11592/5>

Using Code in Component details:

<https://discourse.psychopy.org/t/multiple-conditional-statements-work-correctly-in-psychopy-but-not-psychojs/11575>

Error of unknown resource when starting experiment or moving to a new routine:

<https://discourse.psychopy.org/t/cannot-get-my-images-read-in-the-online-version-of-my-experiment/11580>

Creating a new Pavlovia.org Project from an existing PsychoPy project that is already linked to one Pavlovia.org project

<https://discourse.psychopy.org/t/upload-the-same-experiment-to-a-different-project-on-pavlovia/11457/7>

Variables defined in Code components not being initialized before they are used in other components in the same routine:

<https://discourse.psychopy.org/t/using-a-code-component-to-set-size-dimensions-of-image-component/11416/2>

PsychoPy unable to sync to pavlovia (for new or existing project)

<https://discourse.psychopy.org/t/cannot-sync-to-pavlovia/11172>