

P ____ Date / Time _____

Introduction (0-10m)

Thank you for coming.

Here in the Design Lab, we are interested in **how people work with data**. We are particularly interested in how they use notebooks, like Jupyter Notebook, to track and share their work. Today we will have you **continue a data analysis that someone else has started in a Jupyter Notebook**. Your job will be to answer a few specific questions they did not have time to get to, primarily using code already in the notebook.

Before you start we need you to consent to participating. This **consent form is fairly general**, so much of it won't apply to you today. These two paragraphs in particular are relevant for today's study. They say that we will have you **work on a computer** here in the lab for about 1 hour and that we will **screen record** your work to help us better understand how you use tools like Jupyter. Go ahead and **review the consent form**, let us know if you have any questions, and sign it when you are ready to continue.

[Give participants a minute to read and sign the form]

Great! **Here is your Gift Card.**

One final question:

1. Do you normally use a **Mac or a PC**?

Mac

PC

Main Task (10-40m)

For the next 30 minutes we will have you **continue an analysis** that someone else started in a Jupyter Notebook. Your task will be to continue their analysis, answering three specific questions they left at the end of the notebook that they did not have time to get to.

If it helps, you can imagine that you have just joined a new lab and one of the researchers there is asking you to help with one of their projects. You will need to write some code to answer their questions, but for the most part you should be able to reuse code already in the notebook, though you are free to look at examples and documentation online.

[Show Jupyter]

I believe you are familiar with Jupyter? It allows you to run blocks of code and see the output inline.

[For those in Janus condition, show an example notebook]

The version of Jupyter you will be using today has a few additional tools that you may find helpful. It lets you hide cells, or portions of cells and to rename those blocks of hidden cells

[Do you have any questions about how these features work?]

Great! For the next 30 minutes we will let you work quietly. Try to **answer as many of the questions** at the end of the notebook as you can. If you finish early, come let us know. We will be in the room next door. You can listen to music if you would like, but please stay focused on the task.

Also, **feel free to talk aloud** about what you are doing, or if something is odd. For example you could say, "Hmm, I wonder why they used that kind of graph", or "I didn't expect that to happen when I clicked there". That will help us understand how you are using Jupyter.

[Any questions before you begin?]

Great! One last thing. I would like to **turn on screen recording** so we can see how you are using the software. Thanks

[Turn on Quicktime or Camtasia]

Happy analyzing! I will be back in 30 minutes.

Exit Interview (40-50m)

1. How **easy was it to understand** what the other person had done?

Not at all Easy 1 2 3 4 5 6 7 Very Easy

Why?

2. How **easy was it to navigate** the notebook?

Not at all Easy 1 2 3 4 5 6 7 Very Easy

Why?

3. **What aspects of the notebook** made it easy or difficult to work with?
(i.e., *easy-to-read code, headers, collapsed cells*)

4. What **other thoughts** did you have about using Jupyter today?

5. **How many of the tasks** were you able to complete?

0 1 2 3

Questionnaire

Great! While I get the computer ready for the next person, please take a few minutes to **answer the following questions** so we get a better sense of how easy the notebook was to understand. Don't worry if you do not know some of the answers.

[Open questionnaire online. Give them a couple minutes to complete]

Fantastic. This has been really helpful, thank you for your time. **What questions do you have** before we wrap up?

Post-Study

1. Stop and save the screen recording
2. Save and close the participant's notebook
3. Make sure Janus is set to the correct configuration
4. Open up the notebook for the next participant
5. Restart Kernel and Run so notebook is ready to use