

PLS 120: Applied Statistics in Agricultural Sciences

Interactive R Programming with Binder



Week 1 Tutorial Guide

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Important Links

Essential Course Resources

Course Website

All course materials are available at:

[Click Here to Access Course Website](#)

Interactive Binder Environment

Access Week 1 lab materials directly:

[Click Here to Launch Binder](#)

Welcome to PLS 120!

In this course, we use the **R programming language** for statistical analysis in agriculture. Instead of installing R and RStudio on your computer, we use **Binder** and **Jupyter Notebooks** to provide you with a ready-to-use environment. No software installation needed!

Why Use Binder?

Benefits of Using Binder:

- **No Installation Required** - Everything runs in your browser
- **Pre-configured Environment** - All packages already installed
- **Cross-platform** - Works on Windows, Mac, Linux
- **Always Updated** - Latest versions of R and packages
- **Easy Sharing** - Just click a link to get started

Getting Started: Step-by-Step Guide

Step 1: Launch Binder Environment

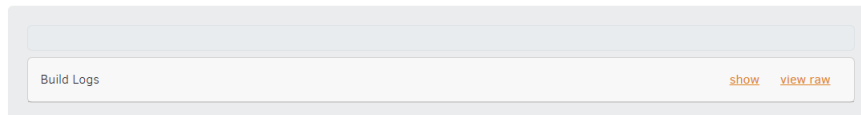
Click the **"Launch Binder"** button to start your R environment. This will take **2-5 minutes** to load.

Join us in San Diego · JupyterCon 2025 · Nov 4-5 · [SCHEDULE](#) · [REGISTER NOW](#)
Thanks to [GESIS](#) and [2i2c](#) for supporting mybinder.org! 🐦



Launching your Binder...

New to Binder? Check out the [Binder Documentation](#) for more information.



Binder is launching your environment - please wait patiently!

Step 2: Wait for Environment to Load

After clicking the link, Binder will show progress through several stages:

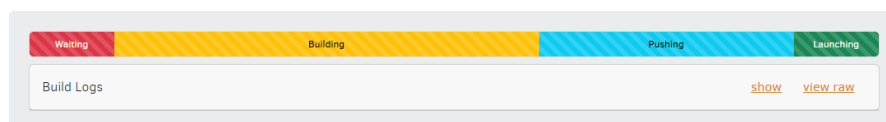
- **Waiting**
- **Building**
- **Pushing**
- **Launching**

The green progress bar shows Binder is almost ready!



Launching your Binder...

New to Binder? Check out the [Binder Documentation](#) for more information.



Green bar means your environment is ready in just a few seconds!

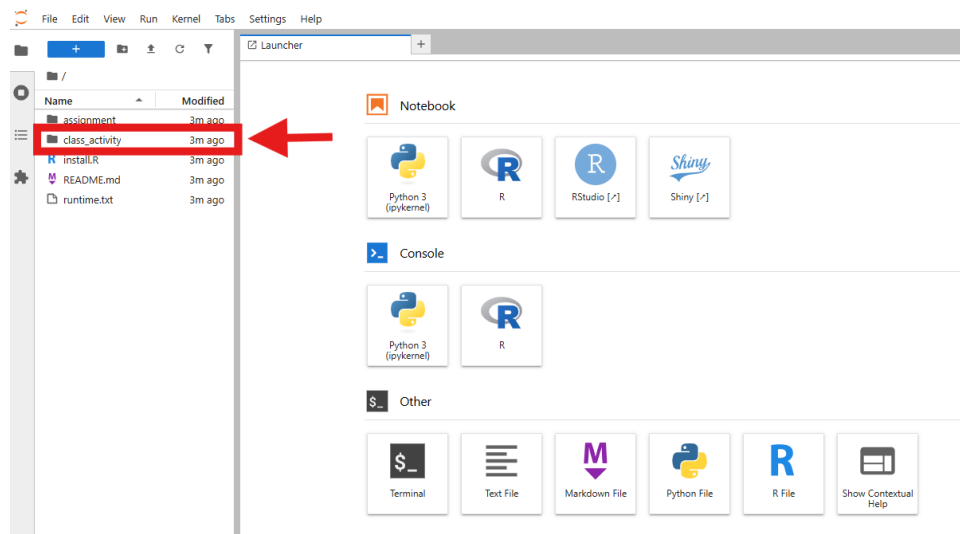
Step 3: Navigate to Class Activity

Once Binder loads, you'll see the Jupyter Notebook interface. In the **left panel**, you'll see several folders:

- **assignment/** - Your homework assignments
- **class_activity/** - Lab tutorials and exercises

- Various files (README.md, runtime.txt, etc.)

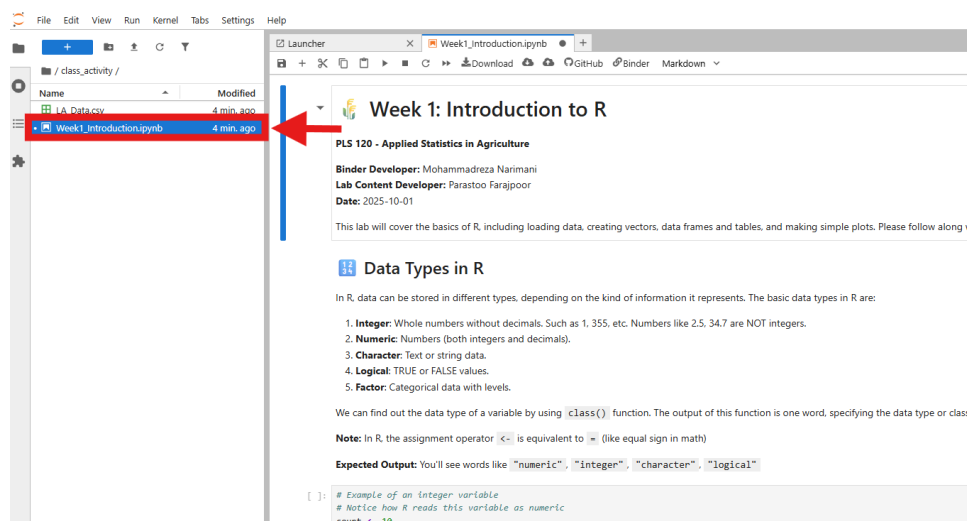
Click on the **class_activity** folder to access this week's content.



Click here to access your lab materials

Step 4: Open the Lab Notebook

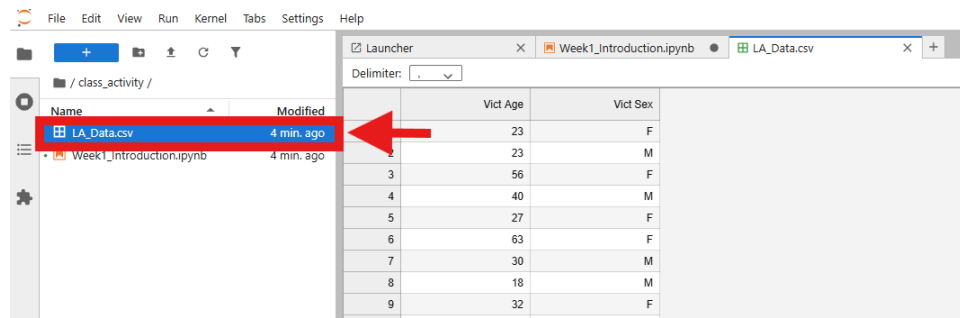
Inside the **class_activity** folder, **double-click** on **Week1_Introduction.ipynb** to open the interactive lab notebook.



Double-click here to open the lab instructions and code

Step 5: Explore the Data (Optional)

We've already uploaded the data for this lab! The file **LA_Data.csv** contains the crime statistics data. You can **double-click** on it to explore the data if you're curious.



Click here to view the raw data (optional)

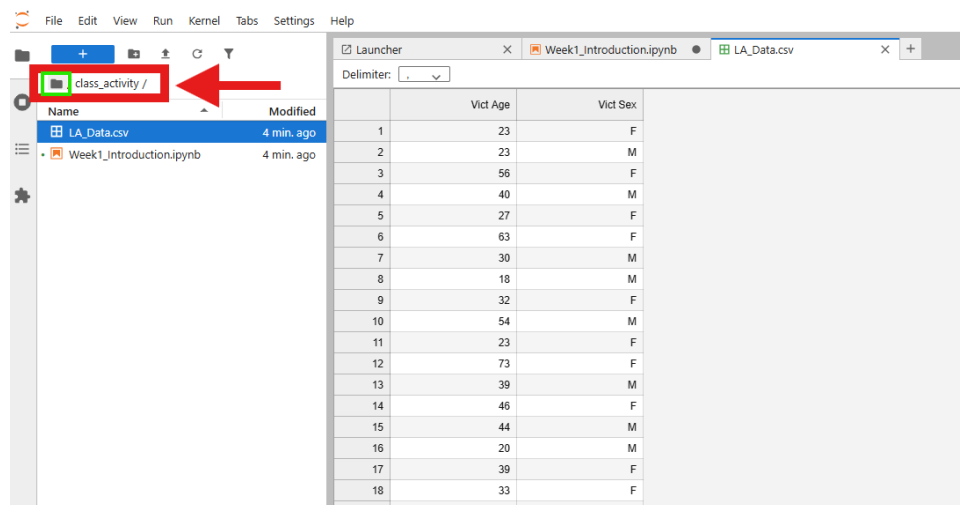
Saving Your Work

Important: Binder environments are temporary! Always save your work locally.

Download Your Notebook

When you're done working, save your progress:

1. **Go back to main folder** - Click the folder icon in the left panel



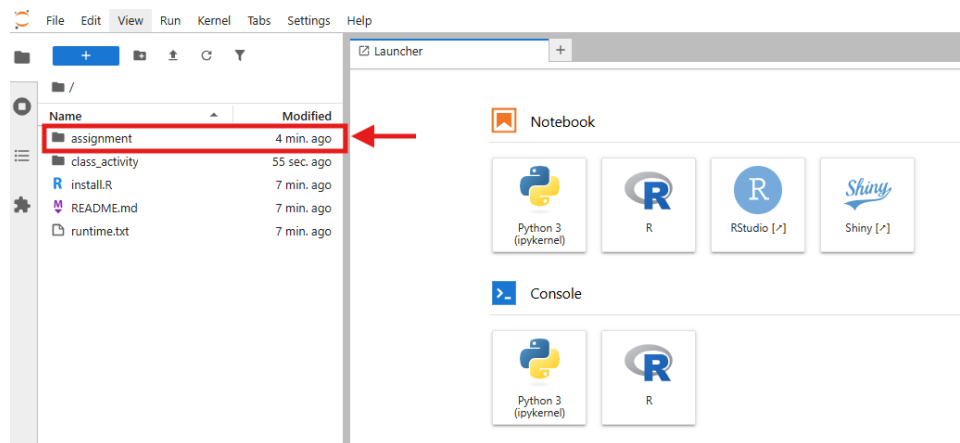
Click the folder icon to return to the main directory

2. **Download your notebook** - Right-click on your .ipynb file and select "Download"

Completing Assignments

Step 1: Access Assignment Folder

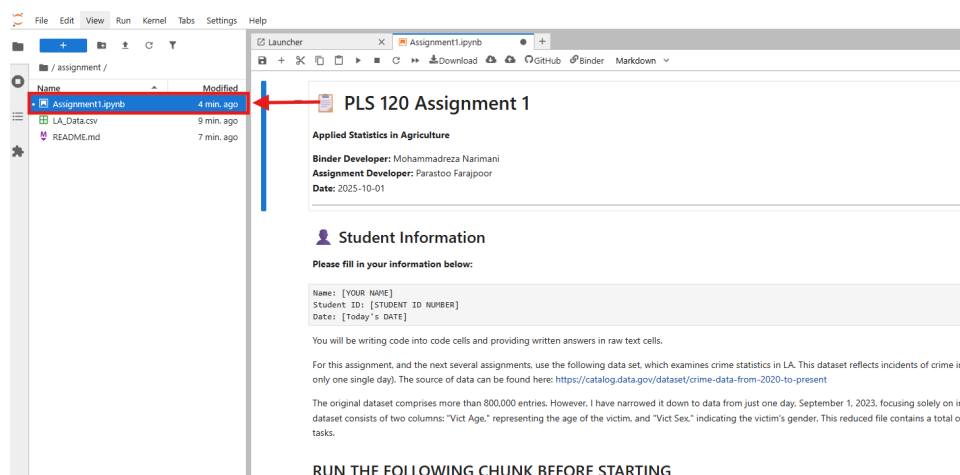
From the main directory, **click on the assignment folder** to access your homework.



Click here to access assignment materials

Step 2: Open Assignment Notebook

Double-click on Assignment1.ipynb to open your assignment.



Double-click here to open your assignment

Step 3: Complete Your Work

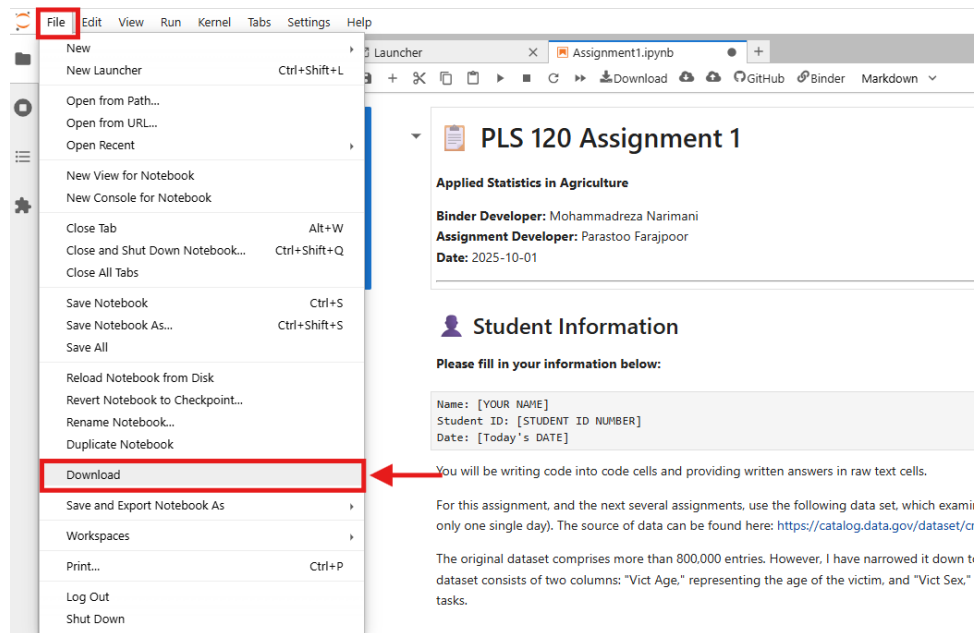
Fill in all **code boxes** and **text boxes** carefully to answer all questions. Look for:

- Question mark emojis indicating questions to answer
- Code cells with hints in comments
- Raw text cells for your written responses

Step 4: Download Your Completed Work

6.4.1 Download Code File (.ipynb)

Click **File** → **Download** to save your notebook code.

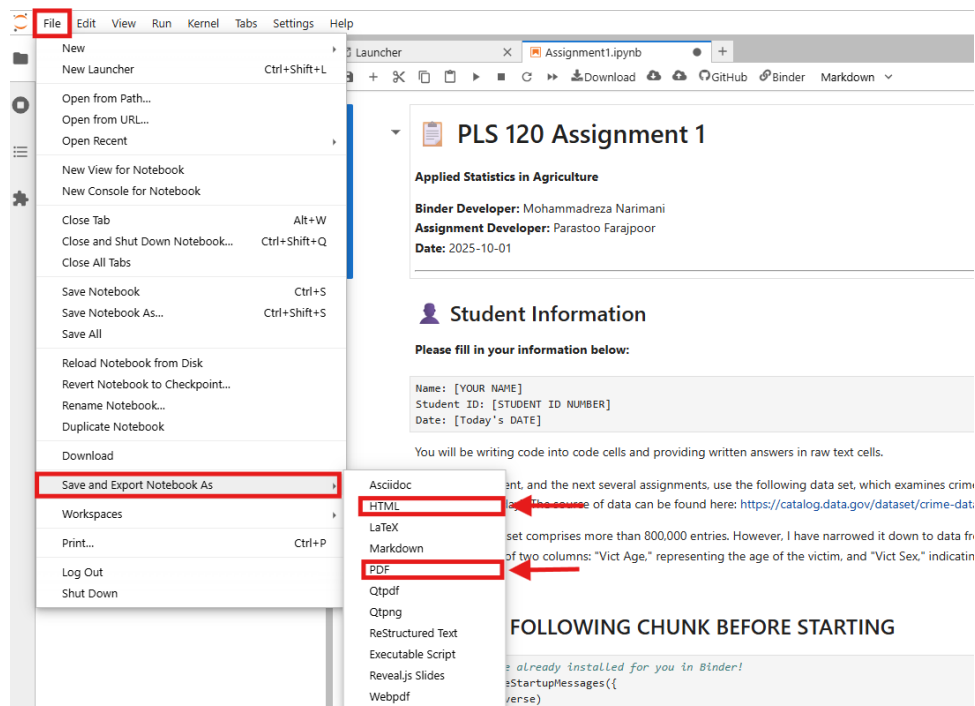


Download your .ipynb file for backup

6.4.2 Export HTML/PDF Report

For submission, you also need an HTML or PDF report:

Click **File** → **Save and Export Notebook As** → **HTML** (or PDF)



Export your completed assignment as HTML or PDF

Submission Requirements

For each assignment, submit **TWO** files to UC Davis Canvas:

1. **HTML/PDF Report** - Your formatted assignment with outputs
2. **.ipynb File** - Your notebook code as backup

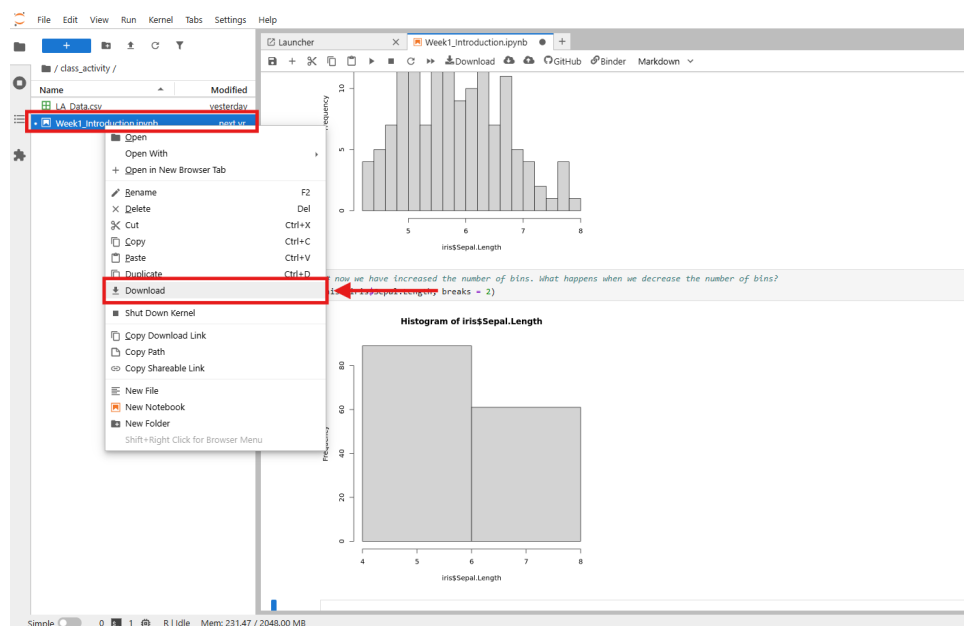
Important: Saving Your Progress

Do not close Binder if you have not saved your code or all your progress will be gone!

If you want to take a break and continue your activity or assignment later:

Save Your Work Before Closing

Right-click on your code (.ipynb) file and click "Download" to make sure you have saved your code locally.

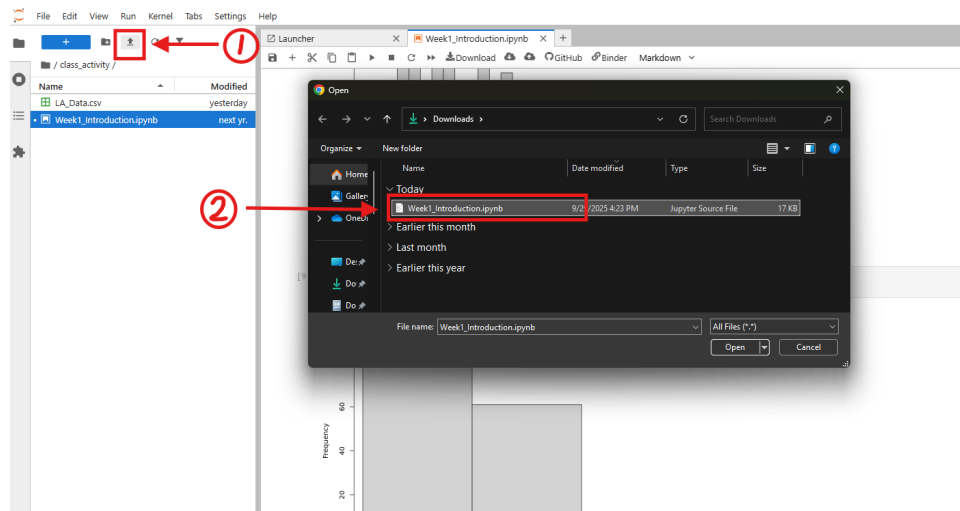


Right-click on your notebook file and download it before closing Binder

Continue Your Progress Later

When you open Binder again and want to continue your work:

1. Click the **Upload** button on the top ribbon
2. Find your saved code file locally on your computer
3. Upload your .ipynb file
4. Run your code cells again to see your previous outputs!



Use the Upload button to continue your work from where you left off

Need Help?

Contact Information

Mohammadreza Narimani

Email: mnarimani@ucdavis.edu

Department of Biological and Agricultural Engineering, UC Davis

Office Hours: Thursdays 10 AM - 12 PM (Zoom)

Technical Issues

- **Binder won't load?** Try refreshing the page or clearing browser cache
- **Lost your work?** Always download files before closing Binder
- **Code not working?** Check for typos and make sure you've run all previous cells

Learning Resources

- **R Documentation:** Use `?function_name` in code cells for help
- **Course Materials:** All tutorials are in the `class_activity` folder
- **Practice:** Try modifying the example code to learn more!

What You'll Learn

- **R Programming Basics** - Variables, vectors, data frames
- **Data Visualization** - Histograms, plots, charts
- **Statistical Analysis** - Descriptive statistics, hypothesis testing
- **Agricultural Applications** - Real-world data analysis
- **Report Writing** - Professional statistical reports

Tips for Success

Best Practices

- **Read instructions carefully** before starting each exercise
- **Run code cells in order** - later cells depend on earlier ones
- **Save frequently** - Download your work regularly
- **Experiment** - Try modifying code to see what happens
- **Ask questions** - Don't hesitate to reach out for help

Keyboard Shortcuts

- **Shift + Enter** - Run current cell and move to next
- **Ctrl + Enter** - Run current cell and stay in place
- **A** - Insert cell above
- **B** - Insert cell below
- **DD** - Delete current cell

Ready to Start?

Visit the course website or click the Binder link to launch your first R programming session!

Happy coding!