

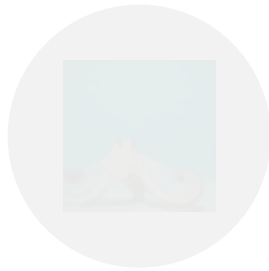
# DATASCI 151: Introduction to Statistical Computing II

Dr. Peter Sentz

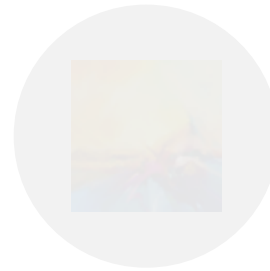
# Agenda



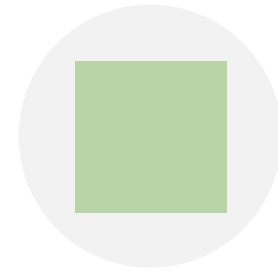
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# About me

- My name is Peter Sentz
  - Calling me "Peter" is fine
  - If you're too scared to do that, "Prof. Sentz" or "Dr. Sentz" works as well.
- Academic Background
  - Studied Mathematics (minoring in Economics) at University of Wisconsin-Milwaukee
  - Master's degree in Applied Mathematics at University of Washington
  - PhD in Computer Science at University of Illinois Urbana-Champaign
  - Postdoc in Applied Mathematics at Brown University.
  - This is my second semester at Emory University
- Pictured: my (now 6.5 month old) daughter
- My research background is in the numerical solution of differential equations and scientific machine learning.

# Teaching Assistants

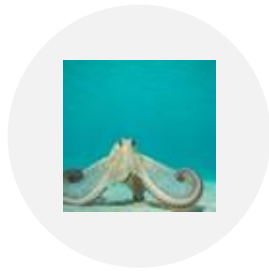
- Anika Chandra
- Ishaan Jain
- Vicky Wang
- Angie Siaca Sanchez

They will be answering questions during some lectures and holding office hours (see Canvas for office hours information).

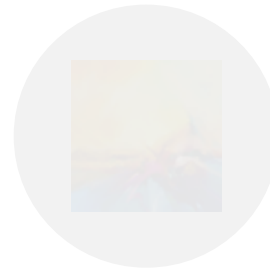
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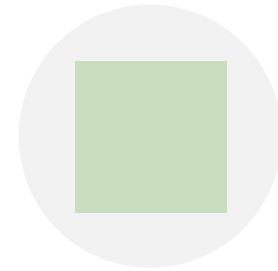
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# Learning Objectives

- Learn how to code effectively in Python
- Learn about key programming principles
- Learn how to manipulate and visualize data

**For more details and class schedule, review syllabus on course Canvas page!**

# Grades

- **Assignments (x 10): 50%**
- **Quizzes (x5): 30%**
- **Final Project: 20 %**
  - Will provide details mid-semester
  - Due at the end of the semester (April 27)
  - Groups of 3-4 students
- **Midsemester Survey: + 0.5% (Extra)**
- **Final Course Evaluations: + 0.5% (Extra)**

# Late submissions

- Late assignments will automatically be graded for half-credit
- To account for unforeseen circumstances, we will drop the worst assignment and the worst quiz
- Watch out for the assignments to install software. You will need these to be able to use the lectures notes.

# Coding ability is not innate

- Coding ability can be developed.
- Academic skills and abilities are acquired through hard work, **mistakes**, and perseverance.
- My only goal here is that you learn the material. Please ask me questions!

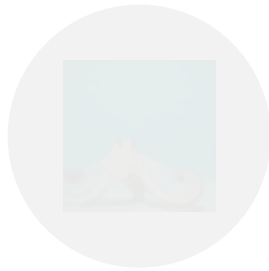


Questions about the logistics

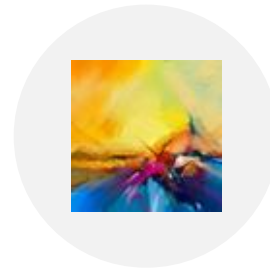
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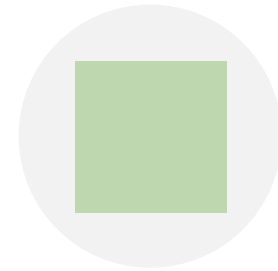
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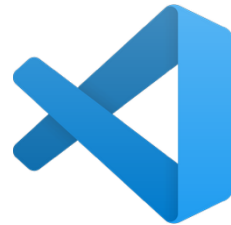
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# Two components:



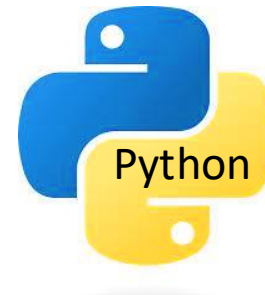
ANACONDA

Virtual Environment



VS Code  
Integrated  
Development  
Environment (IDE)

+



(in background)

**Programming language** we use to  
write the instructions

The “front-end” software that  
you open every time you code  
something in Python

A “back-end” software that  
you install once and hardly  
open again.

# We open script files in VSCode



## Script\* File

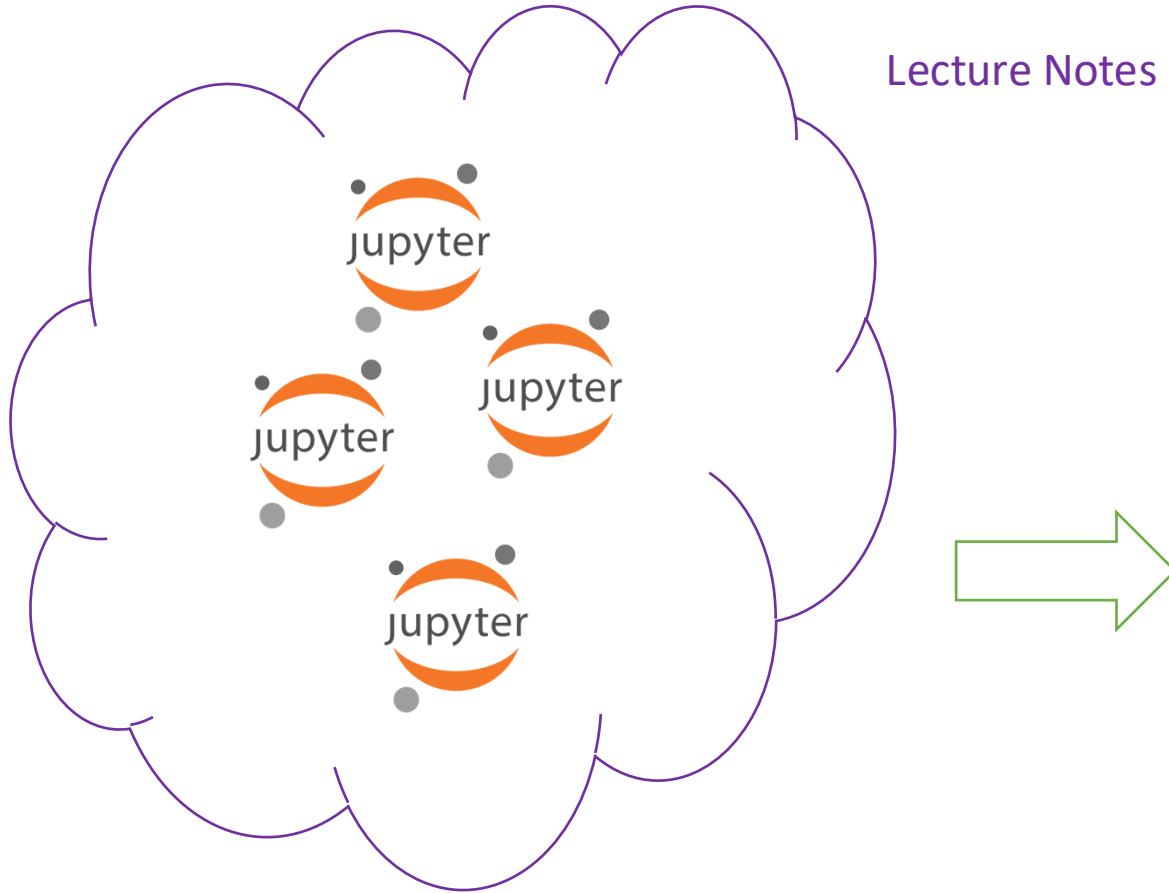
- File with code in the Python **programming language**.
- Instructions for the program to follow



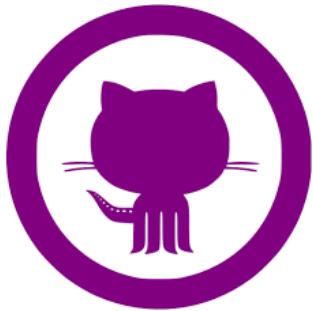
## VS Code Integrated Development Environment (IDE)

Environment where the user  
writes the scripts

\* Not really script files. Jupyter Notebook files



VS Code



Github:  
A file management system in  
the cloud (with desktop app)

- Has version control
- Great for collaborative programming

Lecture notes are publicly available at my GitHub website (link posted on Canvas):

<https://github.com/sentz2/datasci151spring2026>



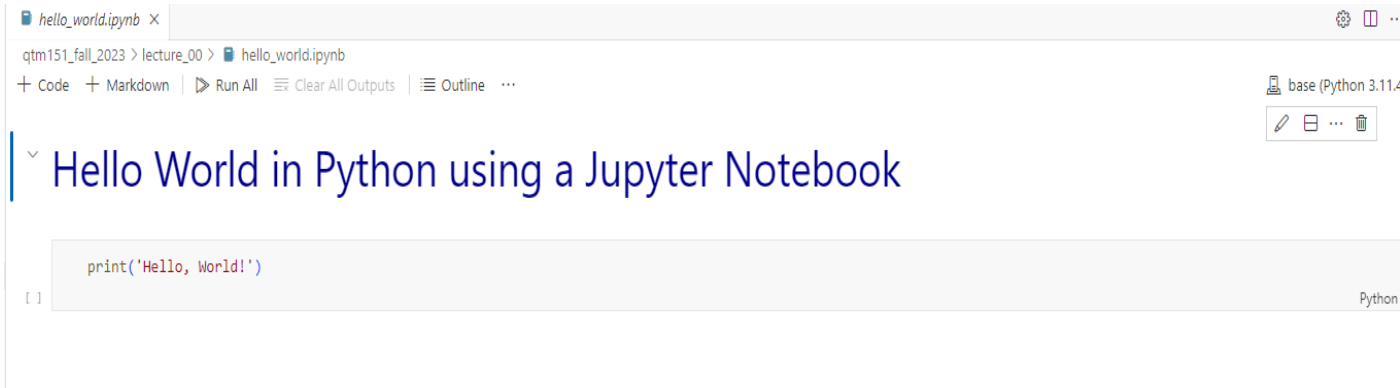
A screenshot of a GitHub repository page for 'qtm151\_fall\_2023'. The repository is public and has 15 commits, 0 stars, and 1 fork. The main branch is 'main'. The repository contains a README.md file and a folder named 'computing\_setup'. The README.md file is titled 'QTM 151: Introduction to Statistical Computing II' and describes the course as an introduction to Python programming and SQL for students without prior programming experience. The 'Basic Setup' section is visible at the bottom of the README.

You can view the lectures in the browser

A screenshot of a Jupyter Notebook file viewer. The file is named 'hello world file' and was updated by 'jjestra'. The viewer shows the 'Preview' tab, which displays the title 'Hello World in Python using a Jupyter Notebook' in blue. Below the title, there is a code cell with the text 'In [ ]: print('Hello, World!')'.



A Jupyter Notebook (“.ipynb”) is a file with code (python) and annotations (markdown)



- All the lecture notes are written as Jupyter notebooks
- It is encouraged that you bring your laptop to class
- Lecture notes are designed to be follow-along. There will be “try it yourself” exercises.



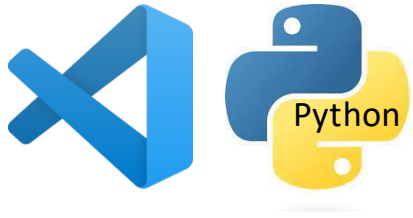
VS Code

See **Assignment 1**

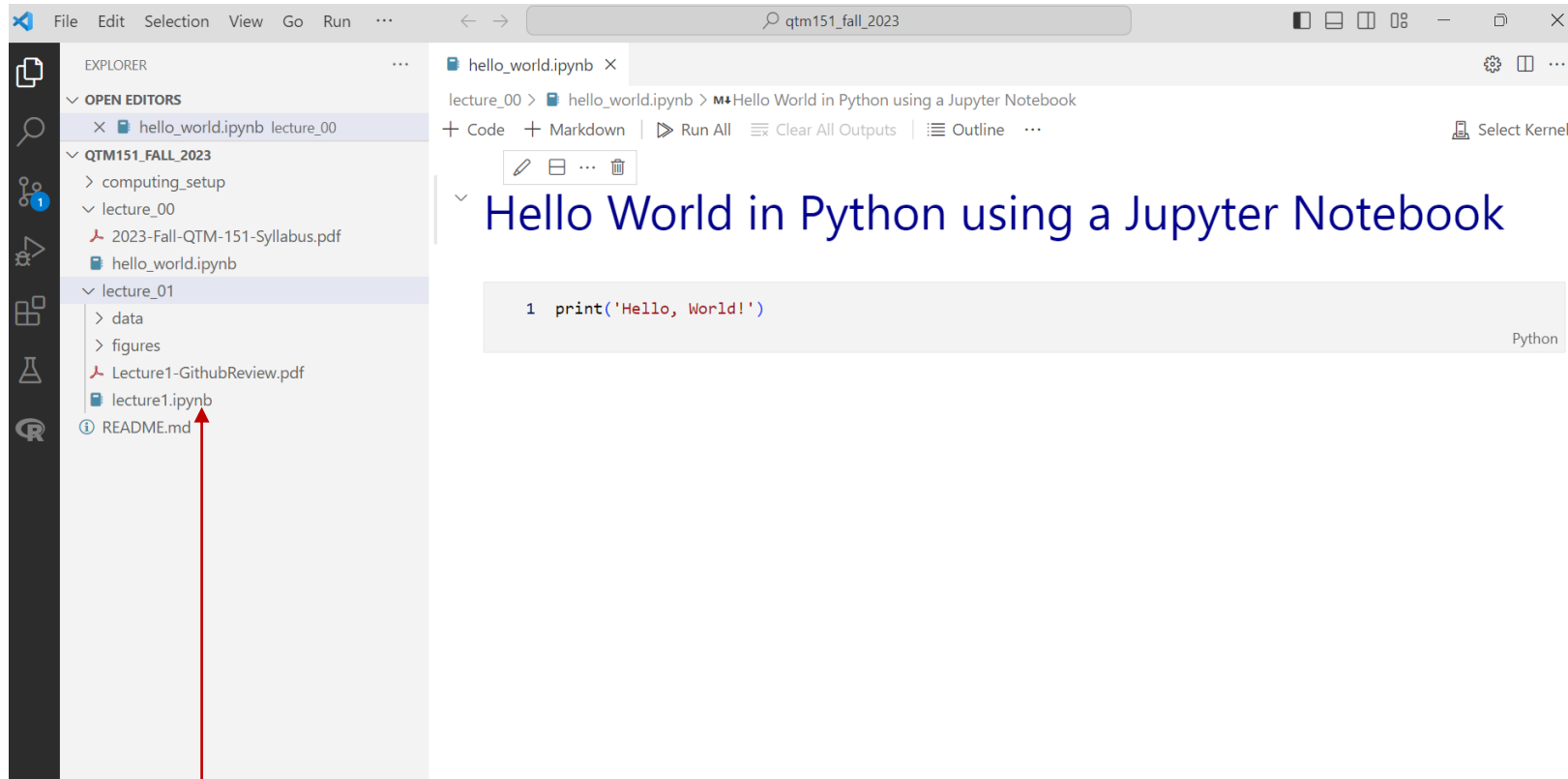
Basics of a Jupyter notebook

- Need to have all the tools installed
- Install **soon** that we can help you with any issues!





# We will do all our coding in Visual Studio Code



Lecture notes

“.ipynb”: Interactive Python Notebook

Github Desktop will allow you to **automatically download the lectures notes** from my account (and update them).

- It will also show you
- the date of any update
  - what the changes are

Update the lecture notes before class!

Current Repository  
qtm151spring2025

Current Branch  
main

Fetch origin  
Last fetched 24 minutes ago

Changes 20

History

No Branches to Compare

Upload first few lecture notes  
Alejandro Sanchez-Becerra • 26 minutes ago

Update README.md  
Alejandro Sanchez-Becerra • 42 minutes ago

Initial commit  
Alejandro Sanchez-Becerra • 42 minutes ago

Update README.md

Alejandro Sanchez-Becerra 74f51d4 +11 -1

1 changed file

README.md

README.md	
1	- # qtm1
2	+ # QTM
3	+ This c
4	+ nts wi
5	+ studen
6	+
7	+ Go to
8	+
9	+ - Inst
10	+ - Inst
11	+ - Gith

Questions about computing environment?

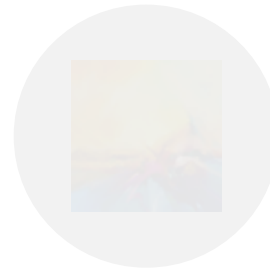
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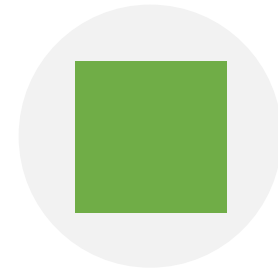
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# Let's get started!

Go to “Modules” in Canvas and open the documents under “Installation” and follow instructions.

- I will stick around to help if you want to try installing everything today
- If you don't complete the installation, we will return to this next class