

Tools We Will be Accessing

Ensuring you have the right tool for each

Objectives

- Navigate to and within IllumiDesk
- Use Anaconda, Jupyter and VS Code for data science
- Understand the relationship between Anaconda, Jupyter, Git and Python

Tools of the Trade

- Python
- Anaconda
- Jupyter
- Visual Studio Code (VSC)
- Git
- Github



What is *Python*?

- A **coding language** used extensively by data science

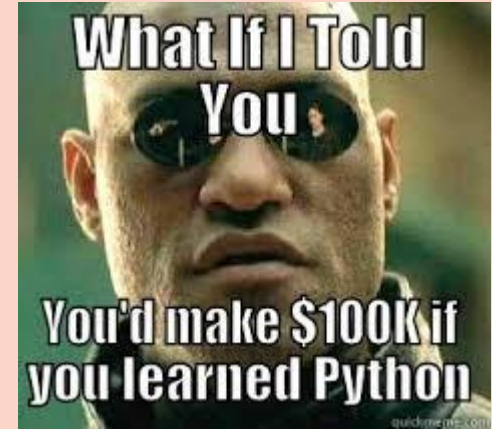


Python

“Python, named after the British comedy group Monty Python, is an interpreted, interactive, object-oriented programming language. Its flexibility allows it to do many things, both big and small.

Python can be used to write simple programs, but it also possesses the full power required to create complex, large-scale enterprise solutions.” - [Derrick Kearney](#)

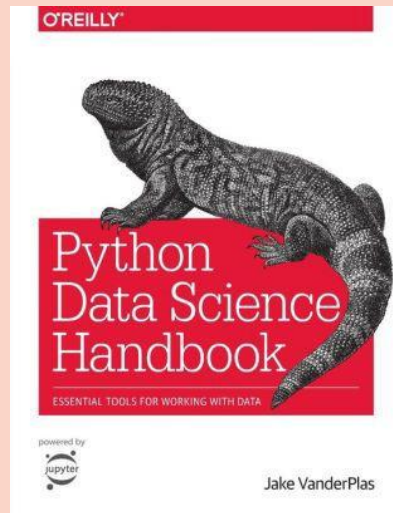
Python is an Object Oriented Programming language, [however, unlike Java...](#)



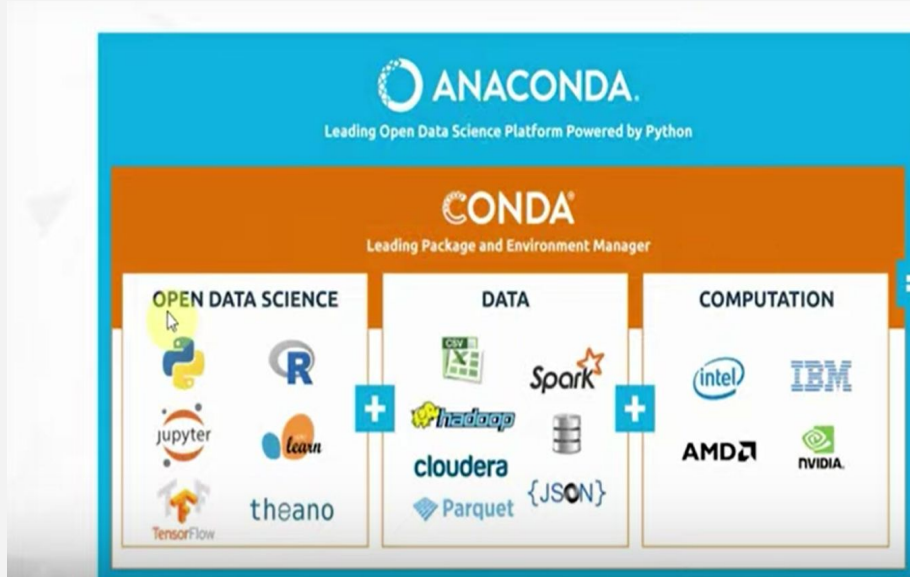
Python for Data Science

“The usefulness of Python for data science stems primarily from the large and active ecosystem of third-party packages:

- [NumPy](#) for manipulation of homogeneous array-based data;
- [Pandas](#) for manipulation of heterogeneous and labeled data;
- [SciPy](#) for common scientific computing tasks;
- [Matplotlib](#) for publication-quality visualizations;
- [Jupyter](#) for interactive execution and sharing of code;
- [Scikit-Learn](#) for machine learning, and many more tools...”
- [Jake VanderPlas](#)



What is Anaconda



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“The open-source Anaconda Distribution

- *Package Management System*
- Easiest way to perform Python/R data science on Linux, Windows, and Mac OS X.
- Over 15 million users worldwide
- Industry standard for...enabling data scientists to:
 - *Quickly download 1,500+ Python/R data science packages*
 - *Manage libraries, dependencies, and environments with Conda*”

— Anaconda Distribution-Package List





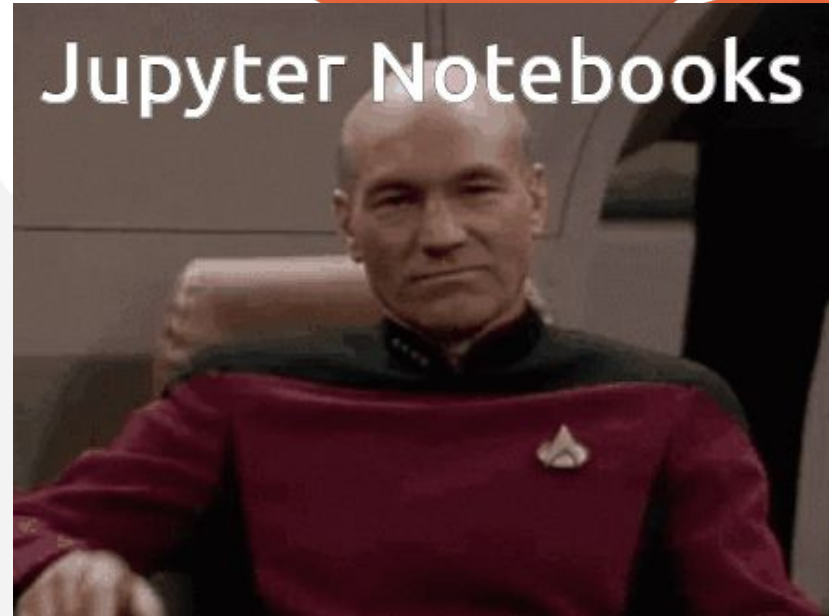
- Conda quickly installs, runs and updates packages and their dependencies.
- Conda easily creates, saves, loads and switches between environments on your local computer.
- You'll create conda environments to share, collaborate on, and reproduce projects with specific versions of particular packages.

Source: [Conda Documentation](#) + [Managing Environments Documentation](#) + [conda cheat sheet](#)

What is Jupyter?



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Jupyter

- [Jupyter Notebook](#) is an open-source **web application** that allows you to create and share documents that contain **live code**, equations, **visualizations** and narrative text.
 - Uses include: data cleaning and transformation, numerical simulation, statistical modeling, data visualization, machine learning, and much more.
- JupyterLab is a next-generation web-based user interface



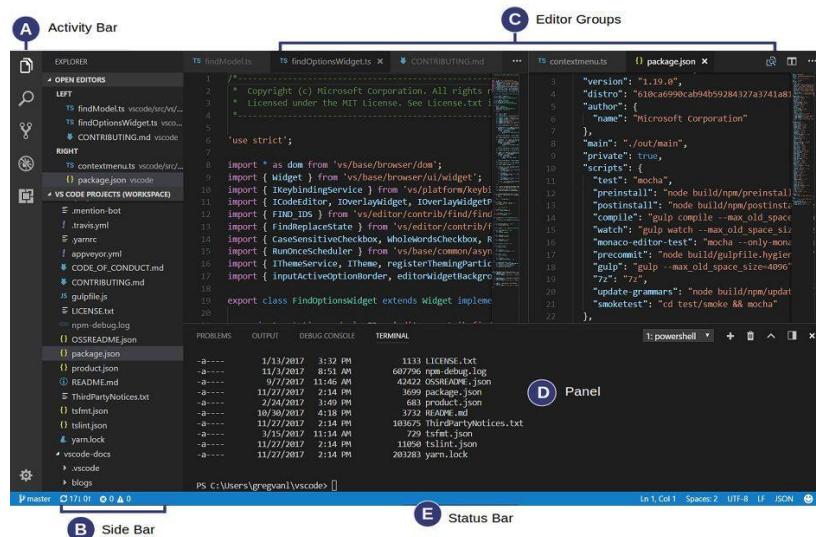
What is Visual Studio Code



Visual Studio (VS) Code



- Visual Studio Code is an open-source **text editor** created by Microsoft
- Navigate directory structure, make/remove files, and direct access to the Terminal/Command Line
- Allows you to write text files (.py, README.md, etc.) and recently, [VS Code allows you to edit Jupyter Notebooks directly](#)
- Easy to switch between conda environments



Choose the tools that work for You



What is Git?



What is Git?

- Git is a version control system.
- It's a way of keeping track of all the changes made across your project.
- Think of it like “track changes” in Word - but with the ability to track changes across multiple documents.



git



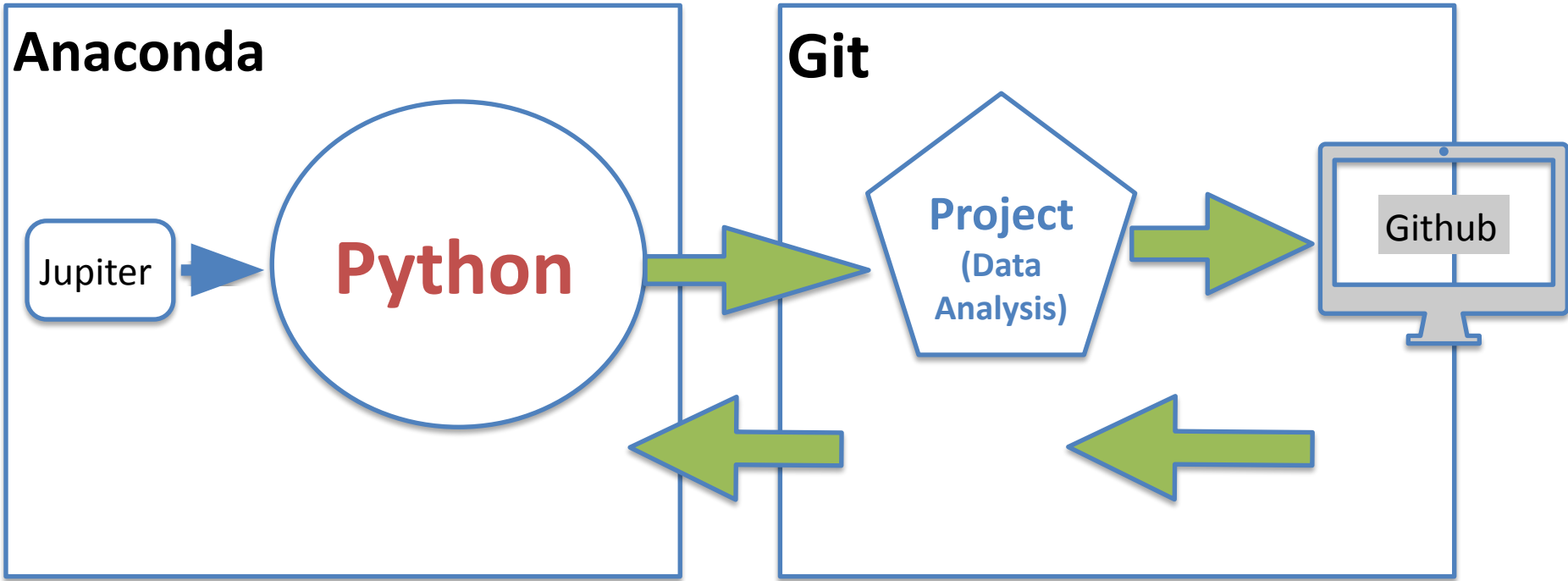
What is Github?



GitHub

- GitHub is a free **software platform** that hosts over 40 million developers **code**
- You'll primarily use GitHub to **collaborate** with others, **document** your projects, and build your **portfolio** to showcase your **abilities** as a data scientist
- You can also use GitHub for any of the following tasks:
 - Code hosting
 - Code review
 - Project management
 - Team management
 - Documentation





Work Flow

CANVAS



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Email

Password

☐ Stay signed in[Forgot Password?](#)[Flatiron School Support](#) [Privacy Policy](#) [Acceptable Use Policy](#)[Facebook](#) [Twitter](#)

CANVAS

The screenshot displays the Canvas LMS interface for the course 'Cambridge FI Summer 2022'. On the left, a dark sidebar contains navigation icons for Account, Dashboard, Courses, Calendar, Inbox, History, and Help. A pink box highlights the top portion of this sidebar, including the Canvas logo and the first four icons. The main content area is titled 'Cambridge FI Summer 2022 > Modules'. Below the title, there are buttons for 'Collapse All' and 'Export Course Content'. The course content is organized into sections: 'General Resources' (containing 'Class GitHub Page' and 'Office Hours Link') and 'Week 1: Getting Started with Data Science' (containing 'Getting Started with Data Science - Introduction', 'Problems Data Science Can Solve', 'The Data Science Process', and 'Setting up a Professional Data Science Environment - Introduction'). A pink box highlights the 'Week 1' section and its items. On the right, there are buttons for 'View Course Stream', 'View Course Calendar', and 'View Course Notifications', followed by a 'To Do' list with two items: 'Data Science Tools' and 'Git and Github', each with a close button.

Cambridge FI Summer 2022 > Modules

Home
Grades
Modules
IllumiDesk Consumer

Collapse All Export Course Content

View Course Stream
View Course Calendar
View Course Notifications

To Do

- Data Science Tools x
Cambridge FI Summer 2022
Apr 19 at 11am
- Git and Github x
Cambridge FI Summer 2022
Apr 26 at 11am

General Resources

- Class GitHub Page
- Office Hours Link

Week 1: Getting Started with Data Science Complete All Items







- Getting Started with Data Science - Introduction
Mark done
- Problems Data Science Can Solve
Mark done
- The Data Science Process
Mark done
- Setting up a Professional Data Science Environment - Introduction
Mark done



CANVAS



Page or Lecture

▼ Week 1: Getting Started with Data Science		Complete All Items
	Getting Started with Data Science - Introduction Mark done	<input type="radio"/>
	Problems Data Science Can Solve	<input type="radio"/>
	Mark done	<input type="radio"/>
	Setting up a Professional Data Science Environment - MacOS Installation Mark done	<input type="radio"/>
	Setting up a Professional Data Science Environment - Windows Installation Mark done	<input type="radio"/>
	Setting up a Professional Data Science Environment - Configuring Git and Anaconda Mark done	<input type="radio"/>



Assignment or Exercise

	Running Jupyter Notebooks Locally Mark done	<input type="radio"/>
	Running Jupyter Notebooks Locally - Lab 0 pts Mark done	<input type="radio"/>
	Bash and Git - Introduction Mark done	<input type="radio"/>

Two ways to access



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DS-P1 > Modules

Account
Dashboard
Courses
Calendar
Inbox
Flatiron School Support

Home
Assignments
Discussions
Grades
People
Pages
Files
Syllabus
Quizzes
Modules
Conferences
Collaborations
illumiDesk

1

2

Topic 1: Getting Started with Data Science

- Getting Started with Data Science - Introduction
- Problems Data Science Can Solve
- The Data Science Process
- Setting up a Professional Data Science Environment - Installation
- Setting up a Professional Data Science Environment - Setup
- The Structure of This Course
- Your First Jupyter Notebook!** 0 pts
- Running Jupyter Notebooks Locally
- Running Jupyter Notebooks Locally - Lab** 0 pts

View Course Stream
View Course Calendar
View Course Notifications

To Do
Nothing for now

CANVAS

IllumiDesk link

Home

Assignments

Discussions

Grades

People

Pages

Files

Syllabus

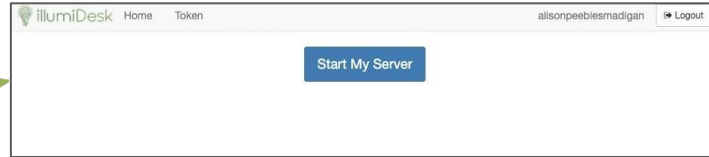
Quizzes

Modules

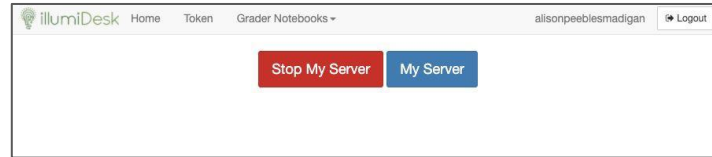
Conferences

Collaborations

IllumiDesk



First time you access IllumiDesk in a Canvas session, the you will need to start your server at the Control Panel



After starting the server the Control Panel has multiple options



Either blue button will direct you to your Jupyter environment



The Control Panel button navigates back to the Control Panel, also known as "Home"

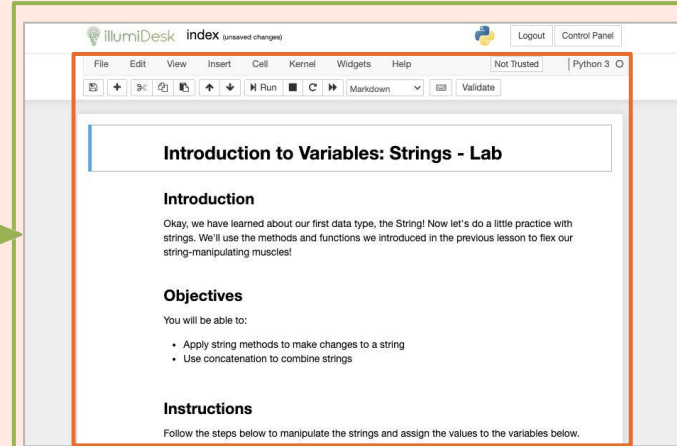
IllumiDesk Through Assignment links



Introduction to Variables: Strings

This tool needs to be loaded in a new browser window

Load Introduction to Variables: Strings in a new window



Jupyter Notebook





Advantages dfumiDesk

Ease of use

No environment issues

Fully integrated into Canvas

Basically Jupyter Notebook

Every lesson with code is stored on GitHub

Introduction to Variables: Strings



This tool needs to be loaded in a new browser window

Load Introduction to Variables: Strings in a new window

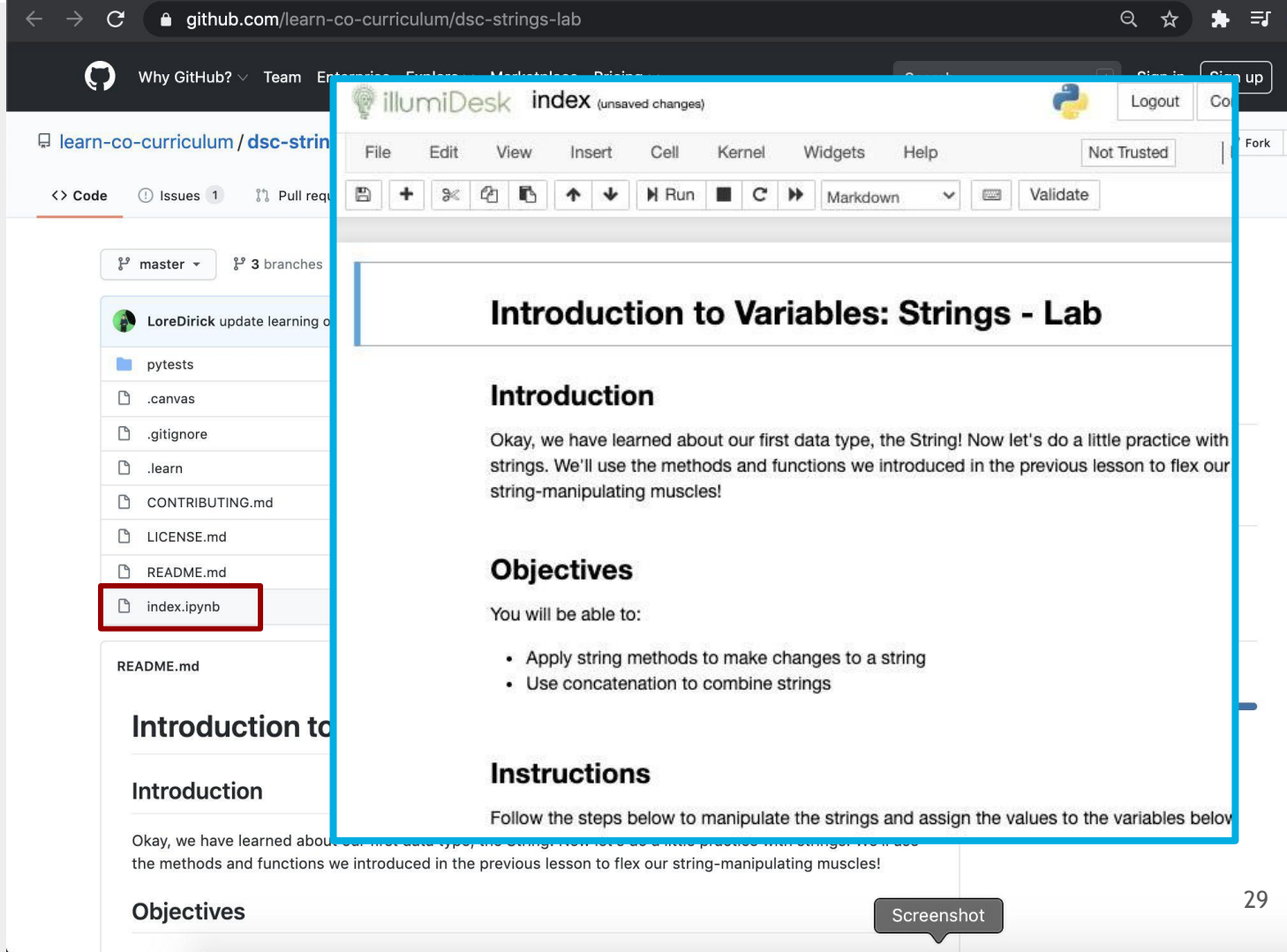
The GitHub logo in Canvas will navigate to the lesson's GitHub repository

You fork and clone the source material from GitHub to your own machine.

(instructions to come)



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The image is a composite screenshot. The background is a GitHub repository page for 'learn-co-curriculum/dsc-strings-lab'. The file list on the left shows 'index.ipynb' highlighted with a red box. Overlaid on the right is a Jupyter Notebook interface titled 'index (unsaved changes)'. The notebook content includes a title 'Introduction to Variables: Strings - Lab', an 'Introduction' section, 'Objectives' (listing string manipulation tasks), and an 'Instructions' section. A 'Screenshot' button is at the bottom right of the notebook window.

github.com/learn-co-curriculum/dsc-strings-lab

Why GitHub? Team Enterprise Explains Marketplace Pricing

learn-co-curriculum / dsc-strings-lab

<> Code 1 Issues Pull requests

master 3 branches

LoreDirck update learning o

- pytests
- .canvas
- .gitignore
- .learn
- CONTRIBUTING.md
- LICENSE.md
- README.md
- index.ipynb

README.md

Introduction to Variables: Strings - Lab

Introduction

Okay, we have learned about our first data type, the String! Now let's do a little practice with strings. We'll use the methods and functions we introduced in the previous lesson to flex our string-manipulating muscles!

Objectives

You will be able to:

- Apply string methods to make changes to a string
- Use concatenation to combine strings

Instructions

Follow the steps below to manipulate the strings and assign the values to the variables below

Screenshot

Lab solutions are on the “solution” branch of each repository.

(we will teach you what that means soon)



github.com/learn-co-curriculum/dsc-strings-lab

Apps Flatiron School Intr... Gmail YouTube Maps Log In to Canvas Login | ADP Workfo...

Search or jump to... Pull requests Issues Marketplace Explore

learn-co-curriculum / dsc-strings-lab

Watch 27 Star 0 Fork 22

<> Code Issues 1 Pull requests Actions Projects Wiki Security Insights Settings

master 3 branches 0 tags

Go to file Add file Code

Switch branches/tags

Find or create a branch...

Branches Tags

✓ master default

curriculum

solution

View all branches

LICENSE.md

README.md

index.ipynb

Added tests 2 years ago

update learning objectives 27 days ago

added framework for lab -- still needs content and tests 2 years ago

updating readme 2 years ago

added framework for lab -- still needs content and tests 2 years ago

added framework for lab -- still needs content and tests 2 years ago

update learning objectives 27 days ago

update learning objectives 27 days ago

README.md

About

No description, website, or topics provided.

Readme

View license

Releases

No releases published

Create a new release

Packages

No packages published

Publish your first package

Contributors 6

Course Structure

- Lectures
- Lessons
- Exercises/Assignments
- Labs
- Quizzes

Cambridge FI Summer 2022

Legend: Modules Lessons Assignments Labs - Graded Quizzes Other

- **Week 1: Getting Started with Data Science**

- Problems Data Science Can Solve
- The Data Science Process
- Setting up a Professional Data Science Environment - Introduction
- Setting up a Professional Data Science Environment - MacOS Installation
- Setting up a Professional Data Science Environment - Windows Installation
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- The Structure of This Course
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- Running Jupyter Notebooks Locally
- Running Jupyter Notebooks Locally - Lab
- Bash and Git - Introduction
- The Bash Shell
- Getting Started with Data Science - Recap

