DSI Certificate Program – Python

August 27th, 2024

UNIVERSITY OF TORONTO

DATA SCIENCES INSTITUTE

Land Acknowledgement

“I (we) wish to acknowledge this land on which the University of Toronto operates. For thousands of years it has been the traditional land of the Huron-Wendat, the Seneca, and the Mississaugas of the Credit. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land.”

GitHub Repository

https://github.com/UofT-DSI/python

Teaching Team

- **Instructor:**
  - **Kaylie Lau (she/her): kaylie.lau@mail.utoronto.ca**
- **Learning Support Staff:**
  - **Emma Teng (She/Her): e.teng@mail.utoronto.ca**
  - **Pedram Aliniaye Asli (He/Him): pedram.aliniayeasli@gmail.com**
  - **Sidra Bushra (She/Her): contact.sidra.bushra@gmail.com**

Design

- Mandatory Live Learning Sessions:
  - Attendance will be taken
  - Tuesday – Thursday: 6:00 PM - 8:30 PM EDT
- Optional Question Periods:
  - Tuesday – Thursday: 5:30 PM - 6:00 PM EDT and 8:30 PM - 9:00 PM
- Optional Work Periods:
  - Friday: 1:00 PM – 4:00 PM EDT
  - Saturday: 9:00 AM – 12:00 PM EDT

Overview

1. Identify the differences between data types
2. Identify and resolve errors
3. Write a block of code as a reusable function
4. Write blocks of code using variables and conditionals
5. Use a loop to go over elements of an array
6. Describe the benefits of Object Oriented programming
7. Use the `numPy` library to perform mathematical operations on arrays and datasets
8. Use the `pandas` library to analyze a dataset, and manipulate numerical and tabular data.

Schedule

	August 26	August 27	August 28	August 29	August 30	August 31
Week 1	• Communicating with Impact	**Live Learning Session 1** • 01_data_types.ipynb • 02_comments_and_errors.ipynb	**Live Learning Session 2** • 03_functions.ipynb • 04_strings.ipynb • 05_converting_types.ipynb • 06_inputs.ipynb	**Live Learning Session 3** • 07_control_flow.ipynb	**Work Period 1**	**Work Period 2**
	September 2	**September 3**	**September 4**	**September 5**	**September 5**	**September 6**
Week 2		**Live Learning Session 4** • 08_reading_and_writing_files.ipynb • 09_object_oriented_programming.ipynb • 10_numpy.ipynb	**Live Learning Session 5** • 11_pandas.ipynb	**Case Study- Tristan Walsh from Munich Re**	**Work Period 3**	**Work Period 4**

Testing, Visualization, and APIs are not covered in this course but you are encouraged to explore the slides at your own pace.

Assignments

There are two assignments that **are graded:**

1. Assignment #1: Anagram Checker
    - Due Sunday September 1 at 11:59 PM
2. Assignment #2: Efficacy Analysis of a Hypothetical Arthritis Drug
    - Due Sunday September 8 at 11:59 PM

Submission guidelines: https://github.com/UofT-DSI/onboarding/blob/main/onboarding_documents/submissions.md

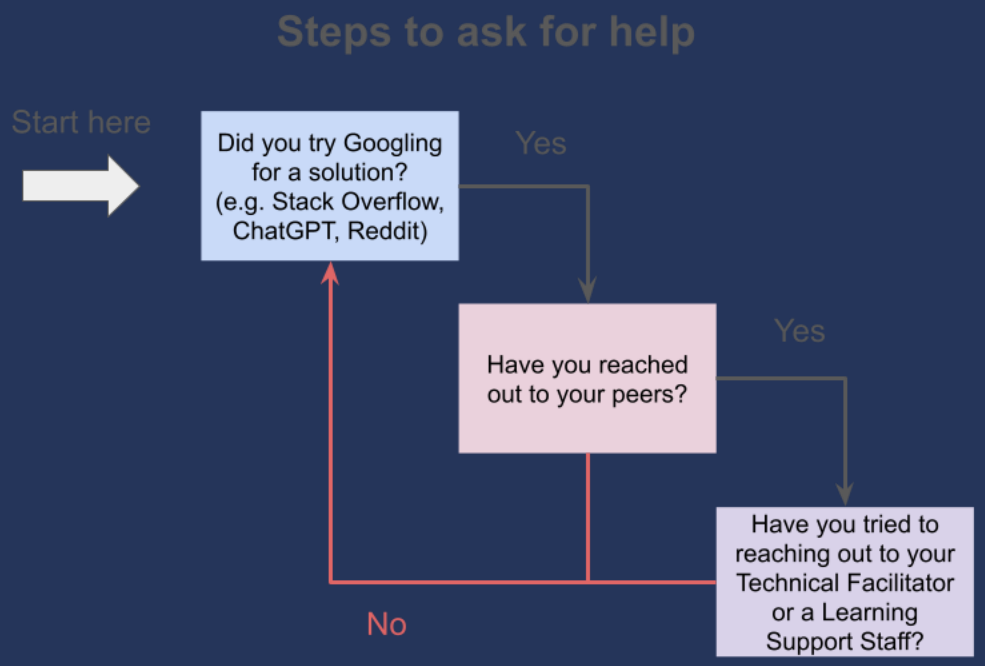
Homework

There is homework for each topic that is **not graded**

Solutions are included in these notebooks

Asking Questions

Questions can be submitted to the _#cohort-4-help_ channel on Slack



Requirements

- Not expected to have any coding experience
- Are encouraged to ask questions and collaborate with others
- Must have a computer and an internet connection
- Must not use generative AI to complete assignments, should be used as a supportive tool only
- Must have completed the instructions mentioned in the onboarding repo
- Are encouraged to have your camera on and also keep microphones muted unless you need to speak.