**Summer Working Connections Virtual 2024**

**Title:** Introduction to Python

**Description:** A cyber beverage to cool down your Summer Break!

Immerse yourself in Python programming with a splash of balmy topics perfect for summer. You’ll conclude with a treasure trove of crisp code examples, slides, and interactive notebooks to stir into your own courses like ingredients in a cooling mint mojito.

**Pre-reqs:**

Some knowledge of programming concepts, e.g. variables, loops, and selection structures

Textbook: No textbook required

**Home System Requirements** :

GitHub and Google accounts (we will use Google Colab)

Optional: Python 3.x (latest version) installed on your personal system (via python.org)

**Bios**

A person with flowers on her head

Description automatically generated with medium confidence

Pamela Brauda is a faculty member in the School of Technology at Florida State College at Jacksonville, where she teaches courses in programming, networking, database, and data science. Pamela is a co-designer of the A.S. in Data Science Technology program at FSCJ, co-principal investigator for the DataTEC project (NSF Grant #1902524 “Meeting Industry Needs through a Two-Year Data Science Technician Education Program”), a faculty co-advisor for the FSCJ STARS Computing Corps, and the proud owner of an autographed copy of "R for Data Science" by Hadley Wickham. Before teaching at FSCJ, Pamela worked as a Metadata Analyst with the Florida Department of Law Enforcement, taught programming and software development at the University of North Florida, created and operated several small businesses, and taught high school mathematics. She graduated from the University of Georgia with a B.S. and from the University of North Florida with an M.S. in Computer Science.

A person smiling for the camera

Description automatically generated with medium confidence

David Singletary is a faculty member in the School of Technology at Florida State College at Jacksonville. David is the principal investigator for the DataTEC project (NSF Grant #1902524 “Meeting Industry Needs through a Two-Year Data Science Technician Education Program”), co-designer of the A.S. in Data Science Technology program at the college, and a faculty co-advisor for the FSCJ STARS Computing Corps. He teaches courses in software development, data science, and FinTech. Although David teaches R at FSCJ, he **does** **not** own an autographed copy of "R for Data Science" by Hadley Wickham and is extremely envious of Pamela Brauda's copy. In a previous life David was employed as a software engineer at Cisco and various startup companies in Silicon Valley. David graduated from the University of Central Florida with a B.S. and from the University of Colorado with an M.S. in Computer Science.

**Objectives**

1. Recall basic Python syntax and common programming terminologies such as variables, data types, and loops
2. Demonstrate an understanding of fundamental programming concepts, such as variables, data types, and control structures in Python
3. Apply fundamental programming concepts to write simple Python programs, such as calculations, data manipulations, and basic algorithms
4. Identify and apply key Python libraries and practices essential for modern data science, AI, and secure programming

**Day 1 Introductory Topics**

* GitHub, Getting to Know You Through GitHub
* Jupyter Notebooks and Google Colab
* Python History, Data Types, Variables, Input/Output, If Statements

**Day 2 Data Structures**

* Loops, Lists, Tuples, Dictionaries

**Day 3 Putting Things Together**

* Functions, Modules, Classes, and Exceptions

**Day 4 Cool and Current Topics**

* Numpy, Pandas, and Matplotlib for Data Science
* Scikit-learn for AI

**Day 5 Even More Splashy Content**

* Secure programming with Python