# PHSA Python Training

Introductory Session

Max Foxley-Marrable

Revolution Data Platforms

# A Brief Introduction to Python

Python is a high-level, general-purpose programming language created by Guido van Rossum in the late 1980s. He was inspired by the ABC language, which he had previously worked on, and wanted to create a language that was easy to read, write, and understand.

The first version, Python 0.9.0, was released in 1991, Python 2.0 was released in 2000, and Python 3.0 was released in 2008 with significant changes.

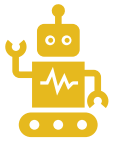
Python gained popularity in the scientific community in the mid-1990s, thanks to its ease of use and support for numerical computing libraries like NumPy and SciPy.

Today, Python is one of the most popular programming languages in the world, and is used for a wide range of applications, from web development to data analysis to machine learning.

Python's popularity is due in part to its simplicity, readability, and versatility, as well as its large and active community of developers who continue to contribute to the language and its libraries.

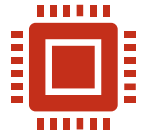
# Why Learn Python?

Access to powerful data analysis tools through Python libraries like Pandas and NumPy.



Increased productivity and efficiency through automation.

The ability to apply machine learning techniques to data through popular Python libraries like Scikit-learn and TensorFlow.



The opportunity to expand skills into web development through Python web frameworks like Flask and Django.

Access to a large and active community of Python users, which can provide resources and support for learning and professional growth.

# Python vs SQL

| | Python | SQL |
|---|---|---|
| Purpose | General-purpose programming language | Language for managing relational databases |
| Syntax | Uses keywords, functions, and data structures | Uses commands specific to working with databases |
| Data | Can manipulate data using libraries like Pandas | Uses commands like SELECT, INSERT, and UPDATE |
| Ease of use | Often considered easy to learn and use | Requires some background in database management |
| Application | Used for a wide range of tasks and applications | Used for managing and querying relational databases |

# Will Python Replace SQL?

**Absolutely not!**

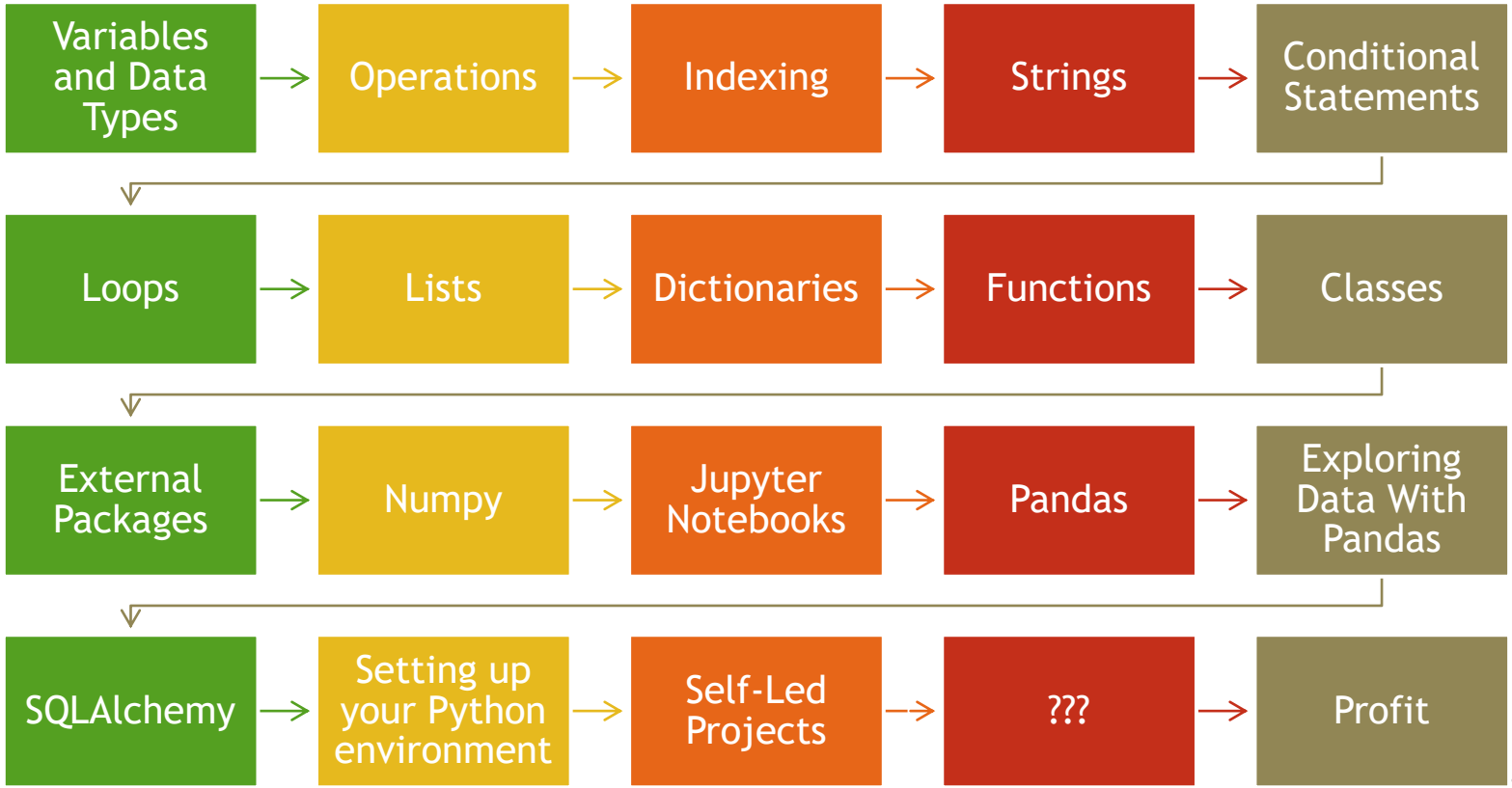
They are two different languages with different purposes.

If anything, the two languages can be utilized hand in hand!

# Potential Use Cases

| | |
|---|---|
| Data extraction and transformation. | Pandas, Numpy, Scipy, PySpark |
| Data analysis and visualization. | Matplotlib, Seaborn, Plotly |
| Database administration automation. | SQLAlchemy, Psycopg2 |
| Database migration. | Alembic (SQLAlchemy) |
| Web development with database integration. | Flask, Django |

# Proposed Course Structure



# This course is intended to be collaborative!

Your input and feedback will help shape your training.