

Programming Refresher



Course Introduction





Introduction to Python

What Is Python?



- Python is an interpreted, object-oriented, and high-level programming language.
- It was developed by Guido Van Rossum and released in 1991.
- Python is one of the most popular and fastest-growing programming languages.

Benefits of Python

Open source:

Python is freely accessible for anyone to use for any purpose.

Python libraries:

Python offers extensive library modules and package support.

High-level language:

Python code is understandable due to its simpler and shorter syntax.

Powerful data structures:

Python's sophisticated data structures organize data in an easily accessible manner based on use cases.



Benefits of Python

Object-oriented programming:

This helps with a structured way of programming in Python.

Dynamically typed:

Python does not require an explicit data type declaration, as it assumes the data type when data is assigned.



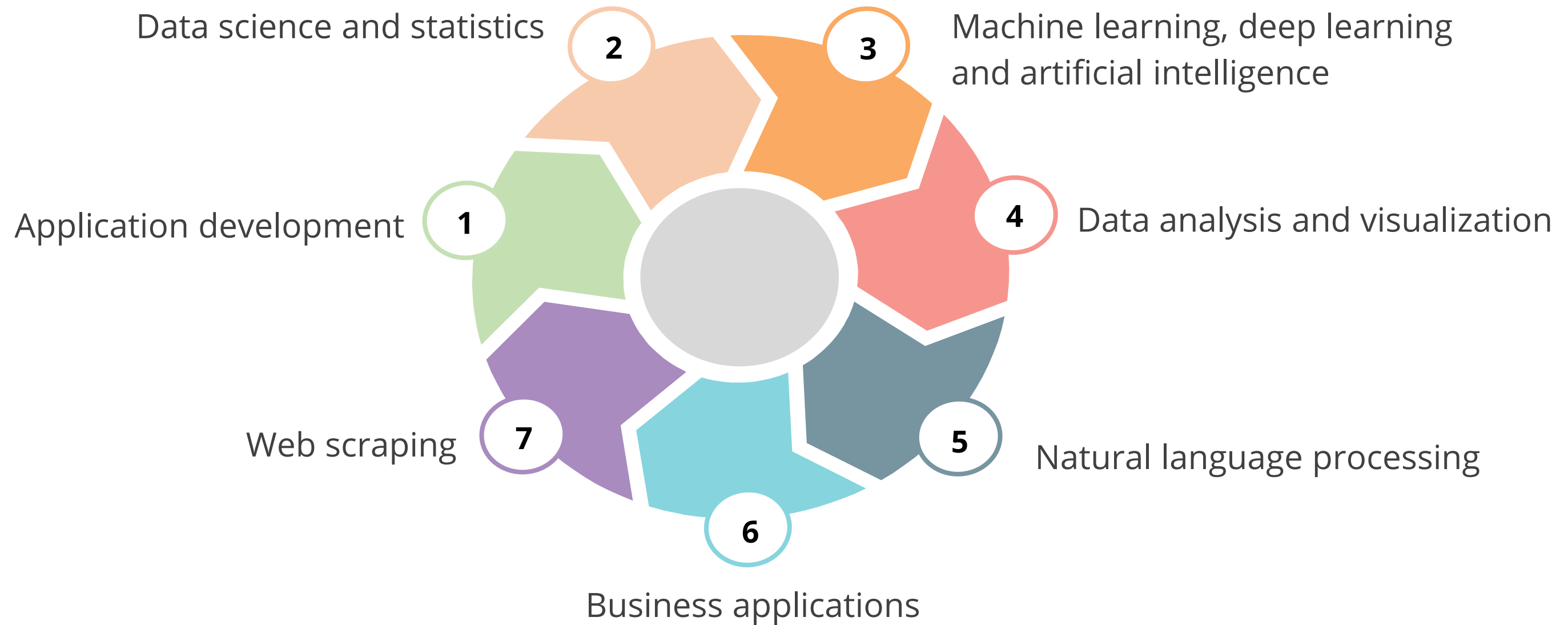
Interpreted language:

Python is an interpreted language; therefore, the compilation process is bypassed, which boosts efficiency.

Flexibility:

Python's versatility enables users to create any type of application.

Application Domains of Python



Demand for Python

In recent years, the demand for Python has rapidly increased. This trend is expected to continue due to several key factors, such as:

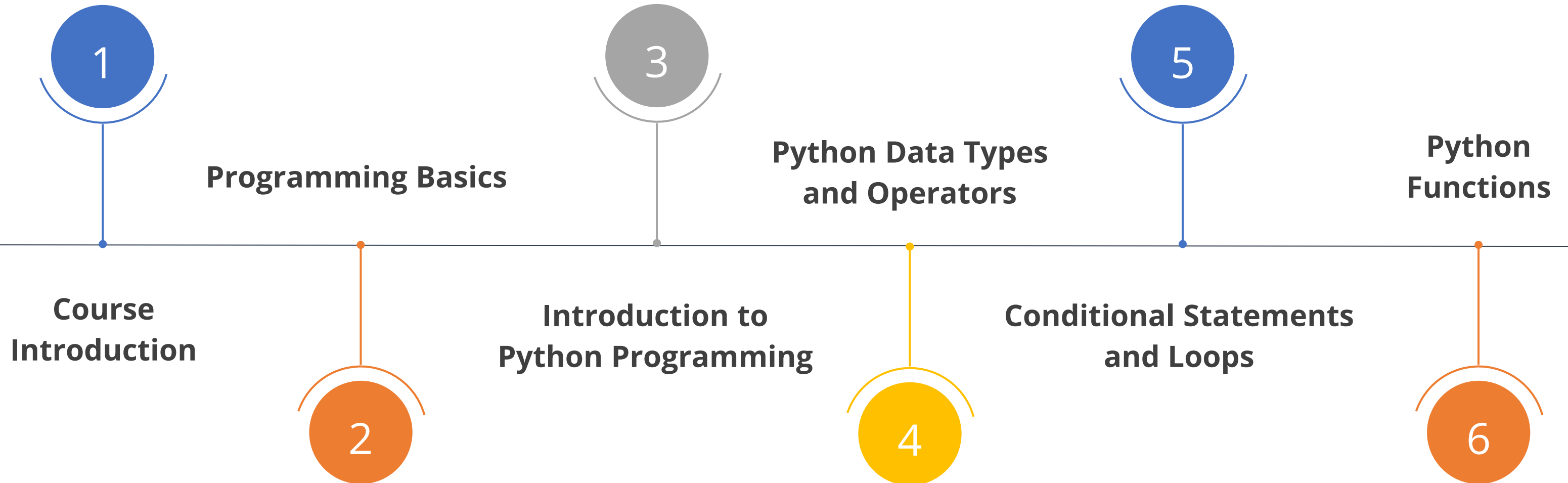


- Versatility and a wide range of applications
- Ease of learning
- Strong community support
- Adoption in data-centric fields
- Growing career opportunities



Learning Path

Course Outline



Programming Basics

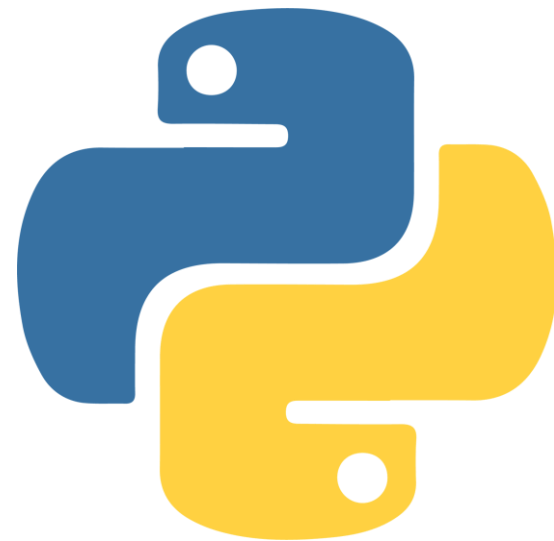
This lesson outlines the following concepts:



- Provides an overview of software
- Lists the different programming models
- Explains the structure of programming

Introduction to Python Programming

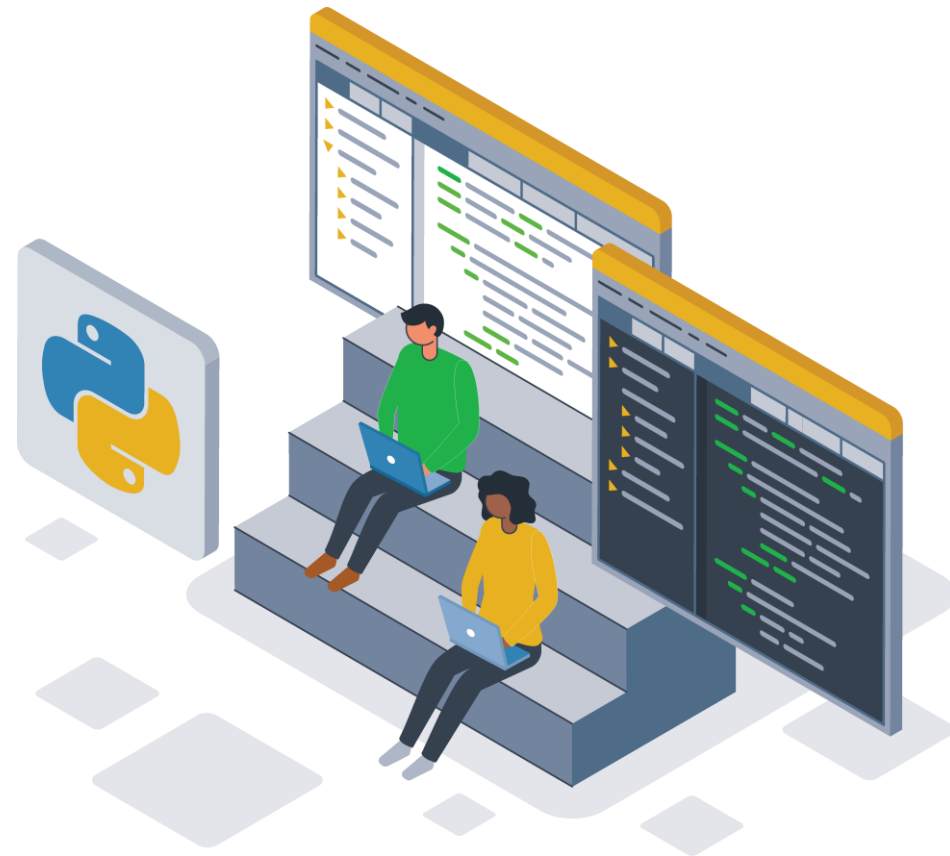
This lesson discusses the following concepts:



- Definition of Python, history of Python, and advantages of Python
- Installing Python
- Python IDE
- Writing the first Python program

Python Data Types and Operators

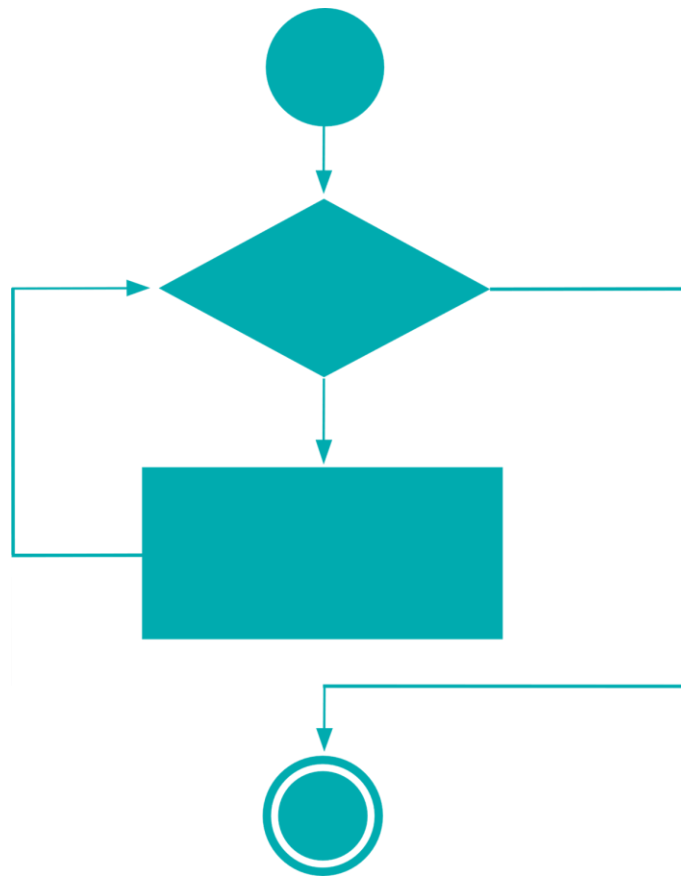
This lesson covers the following topics:



- Data types and data assignment
- Python operators
- Strings in Python
- File handling in Python

Conditional Statements and Loops

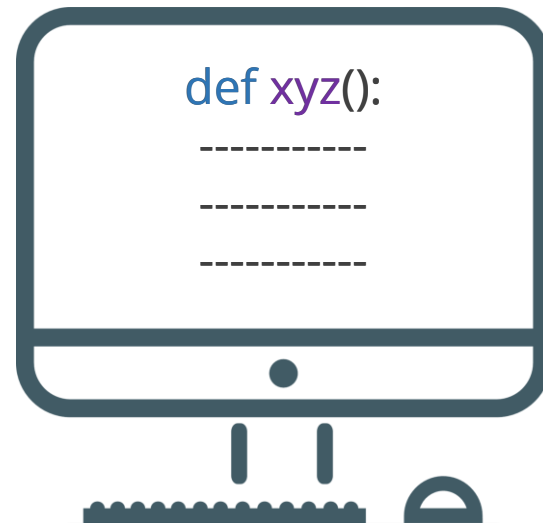
The concepts covered in this lesson includes:



- Decision control structures in Python
- Types of loops
- Loop control statements, such as break and continue

Python Functions

This lesson includes the following concepts:



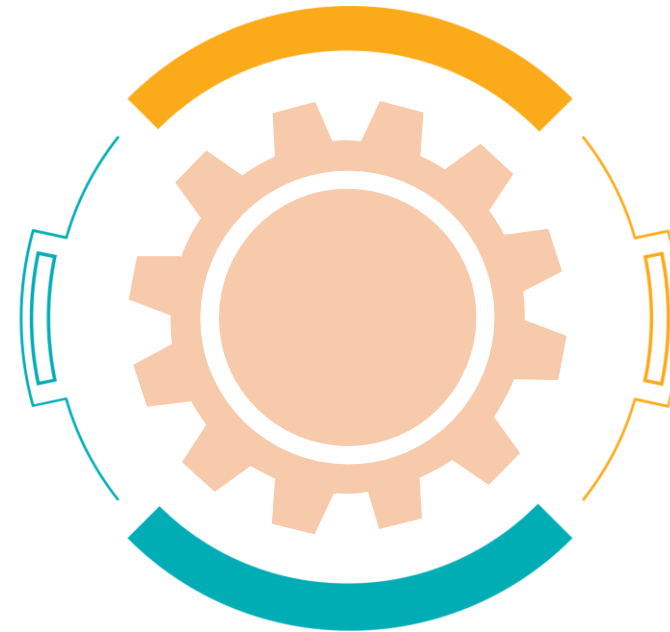
- Functions in Python
- Function arguments
- Return statements
- Scope of a variable
- Generators function
- Function types



Course Components

Course Components

E-books: Downloadable PDF files of all lessons to use as quick reference guides



Assisted practices: To help you develop skills and make you an asset to any organization



Let's get started!