Programming Refresher

Course Introduction

Introduction to Python

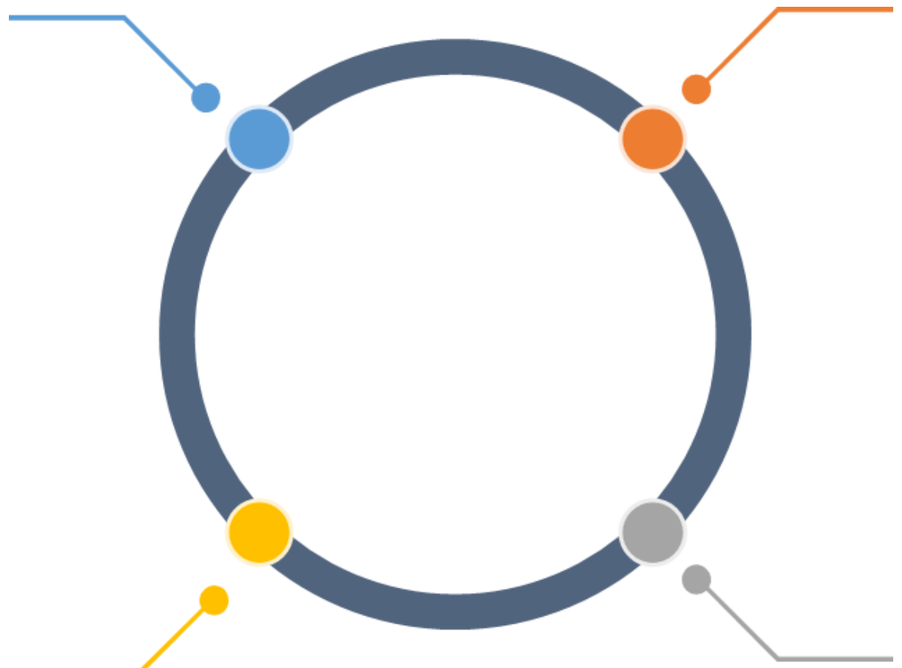
What Is Python?

- 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.



High-level language:

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

Python libraries:

Python offers extensive library modules and package support.

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.

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

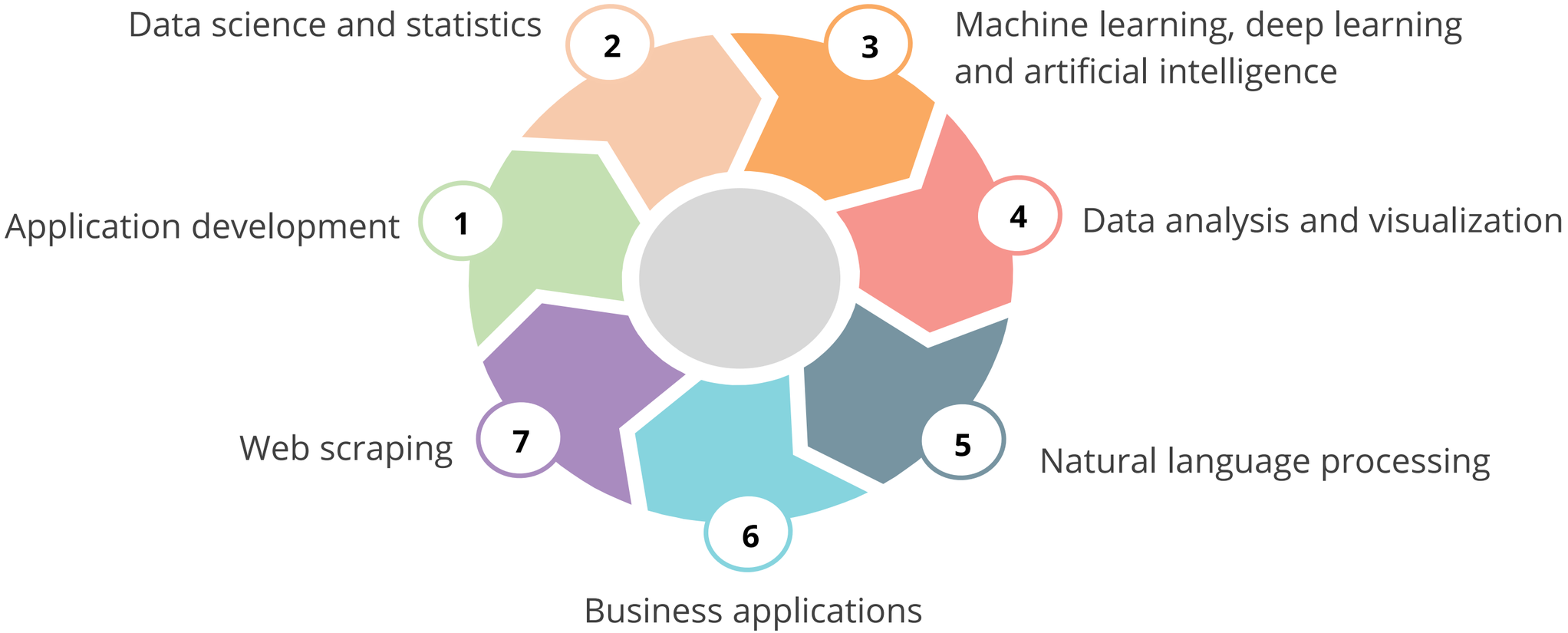
Dynamically typed:

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

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

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Python Data Types and Operators

Course Outline

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OOPs Concepts with Python

8

Threading

Programming Basics

This lesson outlines the following concepts:

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

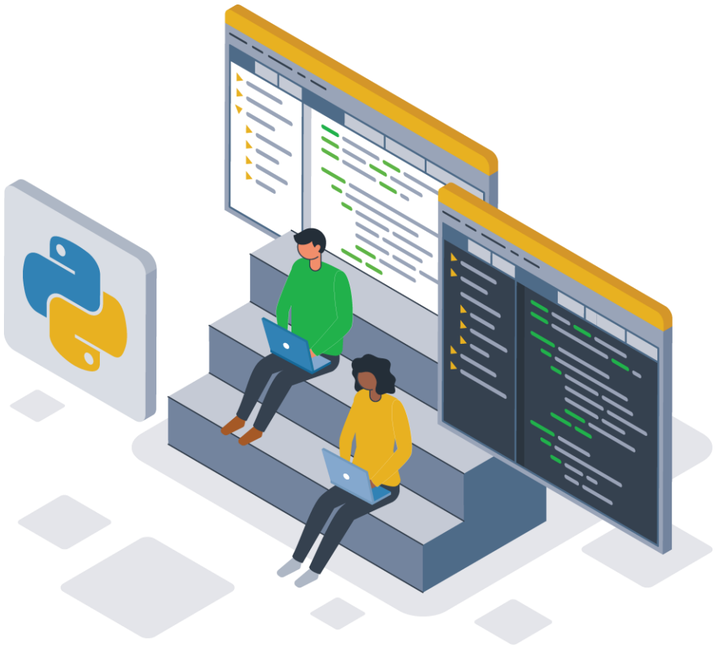
Introduction to Python Programming

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

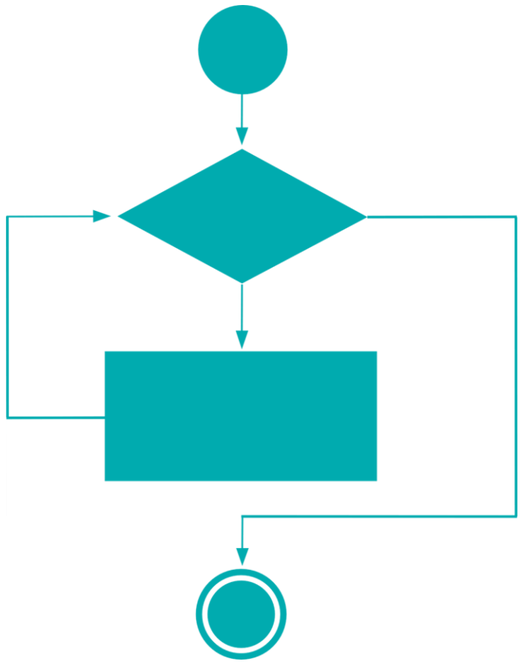
This lesson covers the following topics:



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

Conditional and Loop Constructs

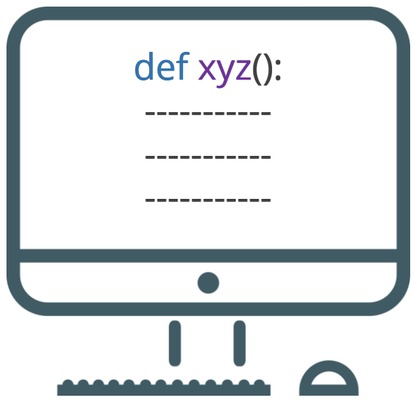
The concepts covered in this lesson includes:



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

Python Functions

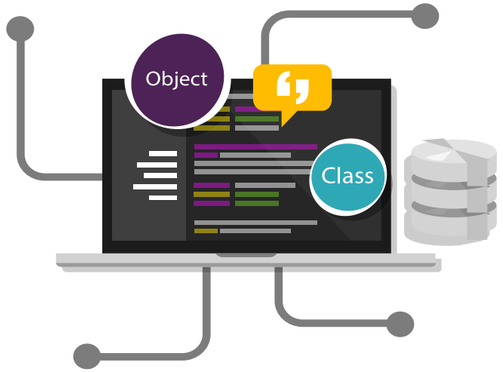
This lesson includes the following concepts:



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

OOP Concepts with Python

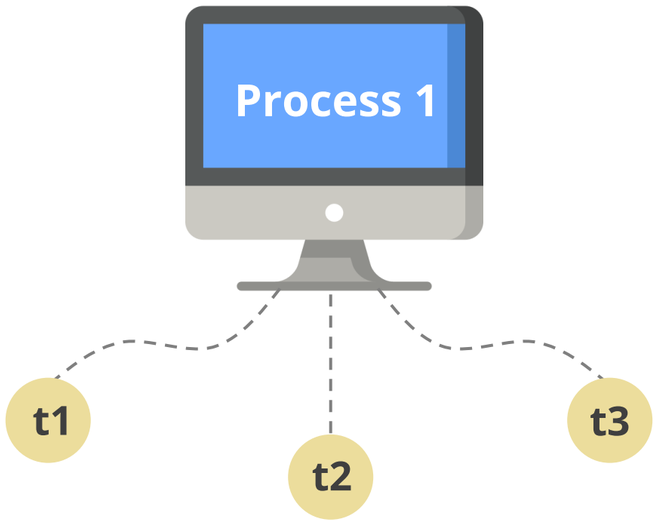
The concepts discussed in this lesson includes:



- What is OOP?
- Objects and classes
- Access modifiers
- Encapsulation
- Inheritance
- Polymorphism
- Abstraction

Threading

This lesson discusses the following concepts:

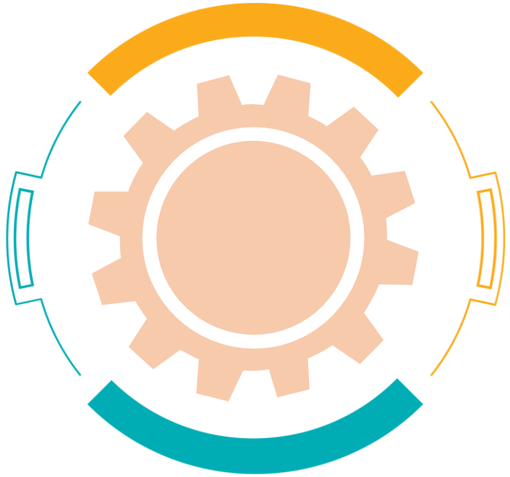


- Threading
- Multi-threading
- Advantages of multi-threading
- Disadvantages of multi-threading
- Synchronizing threads

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!