**Programming Refresher** 

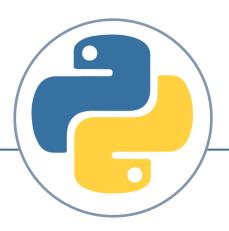


# **Course Introduction**



**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.

# Powerful data structures:

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

#### **Python libraries:**

Python offers extensive library modules and package support.

# **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.

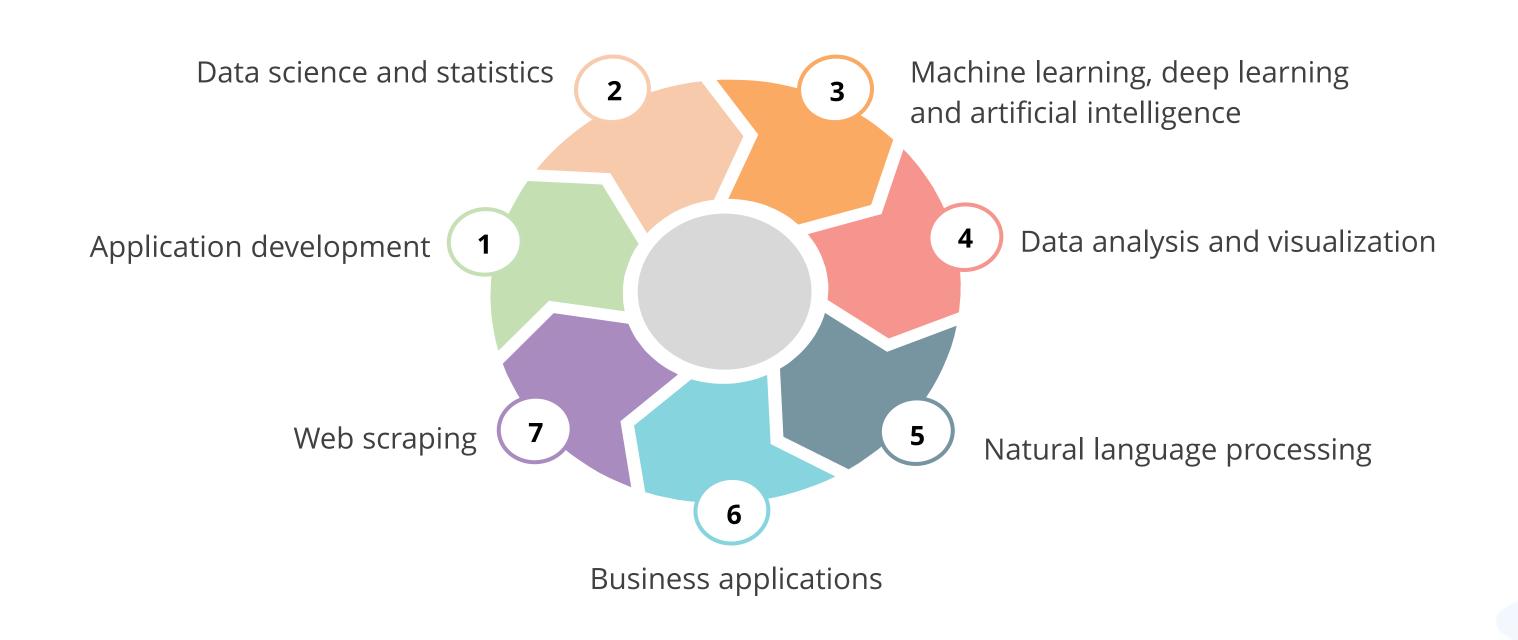
#### **Dynamically typed:**

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**

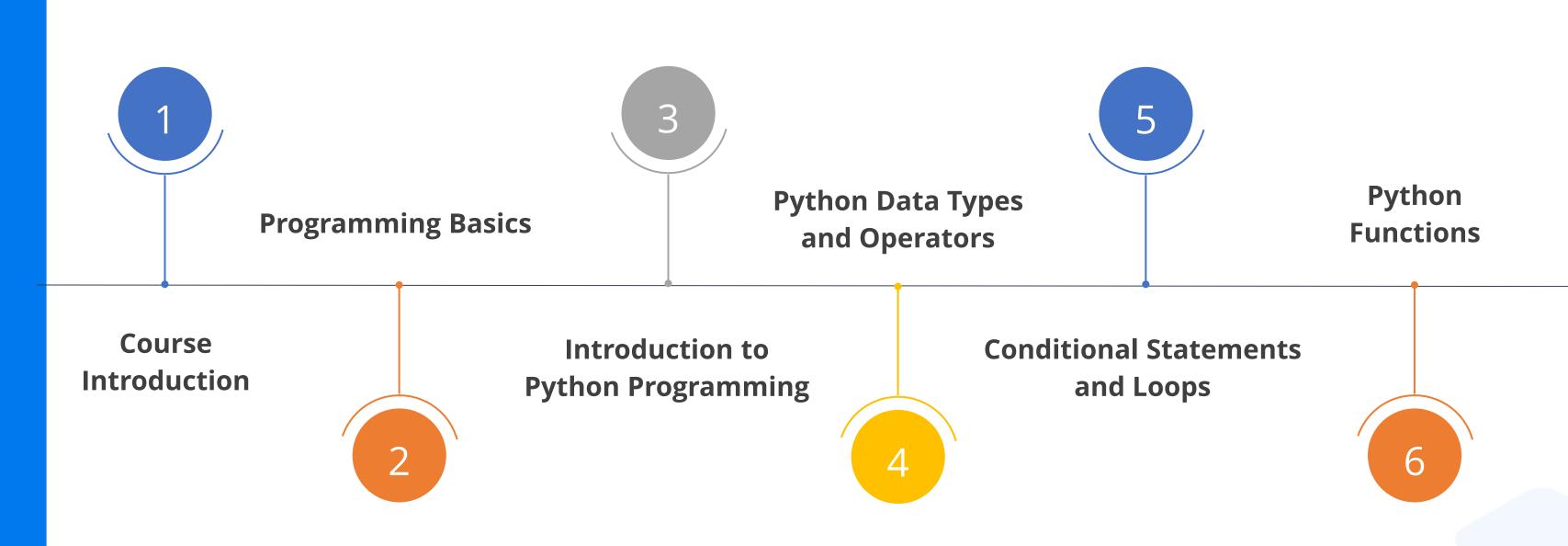
In recent years, the demand for Python has rapidly increased. This trend is expected to continue due to several key factors, such as:



- 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**



# **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**

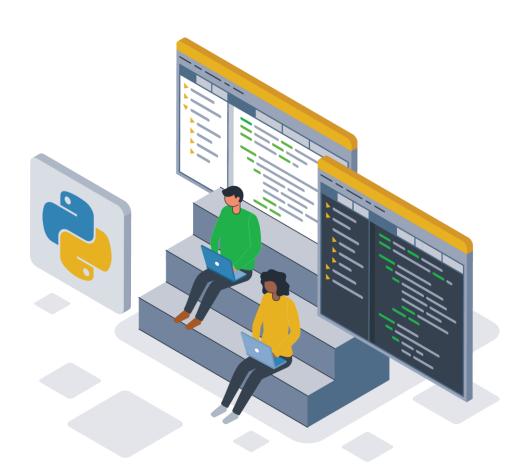
This lesson discusses the following concepts:



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

# **Python Data Types and Operators**

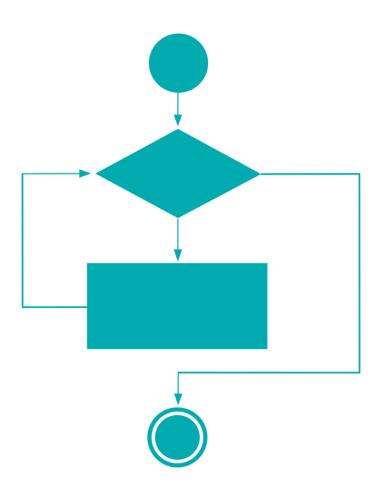
This lesson covers the following topics:



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

# **Conditional Statements and Loops**

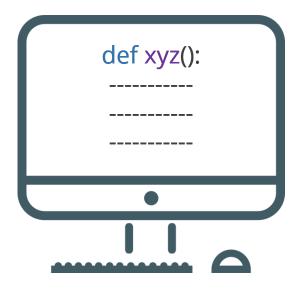
The concepts covered in this lesson includes:



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

# **Python Functions**

This lesson includes the following concepts:

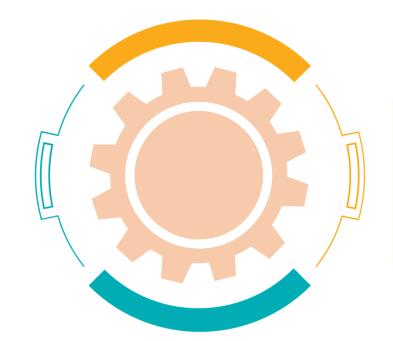


- Functions in Python
- Function arguments
- Return statements
- Scope of a variable
- Generators function
- Function types

**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!