



# Python Data Structures

ANI\_106d | On-Demand | Automation and Insights | ⚙️

Course Duration: 1 hour

This self-paced on-demand course is a light-hearted introduction to Python data structures. Students will delve a little deeper into data structures and become familiar with ways to organize and access data collections in Python.

## Intended Audience

Those with some programming experience who are interested in implementing advanced data structures in Python.

## Objectives

After completing this course, the learner will be able to:

- Use the dictionary structure to organize information into key value pairs
- Explain the significance of an immutable data type
- Explain the differences between tuples and lists
- Pack and unpack tuples to hold value pairs
- Demonstrate uses for ordered and unordered collections
- Define and perform set operations

## Course Prerequisites

No Prerequisites

## Outline

1. Lists Overview
    - 1.1 Creating a List
  2. Tuples
    - 2.1 Tuples Packing
    - 2.2 Tuples Unpacking
    - 2.3 Nested Tuples
    - 2.4 Working with TuplesExercise: Code Challenge
  3. Dictionaries
    - 3.1 Looping through Keys, Values, Key-Value Pairs
  4. Set Operations
    - 4.1 Union, Intersection, Difference
    - 4.2 Symmetric Difference
    - 4.3 Set Operations Summary
    - 4.4 Working with Set Operations
    - 4.5 Organizing with Set Operations
  5. Data Structures Overview
  6. Common Characteristics
    - 6.1 Indexed
    - 6.2 Mutable
    - 6.3 Duplicates allowed
    - 6.4 Heterogenous
- Final Assessment

