Python Data Representations

by Rice University

About this Course

This course will continue the introduction to Python programming that started with Python Programming Essentials. We'll learn about different data representations, including strings, lists, and tuples, that form the core of all Python programs. We will also teach you how to access files, which will allow you to store and retrieve data within your programs. These concepts and skills will help you to manipulate data and write more complex Python programs.

By the end of the course, you will be able to write Python programs that can manipulate data stored in files. This will extend your Python programming expertise, enabling you to write a wide range of scripts using Python

This course uses Python 3. While most Python programs continue to use Python 2, Python 3 is the future of the Python programming language. This course introduces basic desktop Python development environments, allowing you to run Python programs directly on your computer. This choice enables a smooth transition from online development environments.

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Basic Info	Course 2 of 4 in the Introduction to Scripting in Python Specialization
Level	Beginner
Commitment	This is a four week class with an expected workload of 5-7 hours per week.
Language	English, **Subtitles:** Arabic, French, Bengali, Ukrainian, Chinese (Simplified), Greek, Italian, Portuguese (Brazil), Vietnamese, Dutch, Korean, German, Pashto, Urdu, Russian, Thai, Indonesian, Swedish, Turkish, Azerbaijani, Spanish, Dari, Hindi, Japanese, Kazakh, Hungarian, Polish
How To Pass	Pass all graded assignments to complete the course.
User Ratings	Average User Rating 4.7

Syllabus

Module 1

Strings

This module will teach you about Python's string data type and its capabilities. Strings are used to represent text within programs.

7 videos, 2 readings

1. **Video:** Welcome!
2. **Video:** Class Structure
3. **Video:** Python Strings
4. **Video:** Indexing Strings
5. **Video:** Searching Strings
6. **Video:** Slicing Strings
7. **Reading:** Formatting Strings
8. **Video:** Answering Common Python Questions
9. **Reading:** Practice Exercises for Strings

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Graded: Strings

Module 2

Basics of Lists

This module will teach you the basics of Python's list data type. Lists are used to hold a sequence of data within programs.

7 videos, 4 readings

1. **Video:** Lists
2. **Video:** List Indexing and Slicing
3. **Reading:** Defining and Accessing Lists
4. **Video:** Splitting and Joining Strings
5. **Video:** List Searching
6. **Video:** Iteration over Lists
7. **Reading:** Iteration
8. **Reading:** Using Thonny
9. **Video:** Using Thonny's Debugger
10. **Video:** Debugging an Example Program
11. **Reading:** Practice Exercises for Lists

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Graded: Lists

Module 3

List Manipulation

This module will dive further into the use of lists. You will learn how about mutating the contents of a list and the implications of doing so.

5 videos, 3 readings

1. **Video:** List Mutation
2. **Reading:** List Processing Example
3. **Video:** Tuples
4. **Video:** Objects and References
5. **Video:** Understanding List References
6. **Reading:** Visualizing Objects and References
7. **Video:** Diagnosing List Reference Issues
8. **Reading:** Practice Exercises for List Manipulation

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Graded: List Manipulation

Module 4

File Access

This module will teach you how to access files in Python.

5 videos, 5 readings

1. **Reading:** Introduction to Files
2. **Video:** Opening and Reading Files
3. **Video:** Reading Files using Iteration
4. **Video:** Writing Files
5. **Reading:** Understanding File Systems and Paths
6. **Video:** Working with File Paths
7. **Reading:** Practice Project: Updating the CodeSkulptor Docs
8. **Video:** Project Video
9. **Reading:** Project Description: File Differences
10. **Reading:** OwlTest: Automated Feedback and Assessment
11. **App Item:** Project Submission History

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Graded: Project: File Differences

View Less

How It Works

General

What do start dates and end dates mean?

Once you enroll,
More

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