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# PYTHON FOR WEB DEVELOPERS AND DATA SCIENCE

## Overview

Python for Web Developers and Data Science course enables you to become a professional Python programmer. Any aspiring programmer can learn Python from the basics and go on to master web development & game development in Python. Gain hands on experience creating movie app, web scraping,

## Duration

5 days / 9.00 am – 5.00pm / 40 hours
Weekdays Training: Monday – Friday
Weekend Training: Saturdays and Sundays (for 3 consecutive weeks)

## Pre-requisities

This course requires participants to meet the following prerequisites:

• A computer - Windows, Mac, and Linux are all supported. Setup and installation instructions are included for each platform.
• Your enthusiasm to learn this go-to programming language. It's a valuable lifetime skill which you can't un-learn!
• Everything else needed to start programming in Python is already included in the course.

## At Course Completion

This course introduces the student to the Python language. On completion of this class the student should feel comfortable with writing Python programs. The course provides insight to the features of Python that make it an excellent choice for projects of virtually any size.

## Course Content

### Chapter 1: Getting Started

1.1. What is Python
1.2. Installing Python
1.3. Python Interpreter
1.4. Code Editors
1.5. Your First Python Program

1.6. Python Extension
1.7. Linting Python Code
1.8. Formatting Python Code
1.9. Running Python Code
1.10. Python Implementations
1.11. How Python Code Is Executed
1.12. Quiz

**Chapter 2: Primitive Types**

2.1. Variables

2.2. Variable Names

2.3. Strings

2.4. Escape Sequences

2.5. Formatted Strings

2.6. String Methods

2.7. Numbers

2.8. Working with Numbers

2.9. Type Conversion

3.0. Quiz

**Chapter 3: Control Flow**

3.1. Comparison Operators

3.2. Conditional Statements

3.3. Ternary Operator

3.4. Logical Operators

3.5. Short-circuit Evaluation

3.6. Chaining Comparison Operators

3.7. Quiz

3.8. For Loops

3.9. For..Else

3.10. Nested Loops

3.11. Iterables

3.12. While Loops

3.13. Infinite Loops

3.14. Exercise

**Chapter 4: Functions**

4.1. Defining Functions

4.2. Arguments

4.3. Type of Functions

4.4. Keyword Arguments

4.5. Default Arguments

4.6. xxargs

4.7. Scope

4.8. Debugging

4.9. VSCode Coding Tricks

4.10. Exercise

4.11. Solution

4.12. A Quick Note

**Chapter 5: Data Structures**

5.1. Lists

5.2. Accessing Items

5.3. List Unpacking

5.4. Looping over Lists

5.5. Adding or Removing Items

5.6. Finding Items

5.7. Sorting Lists

5.8. Lambda Functions

5.9. Map Function

5.10. Filter Function

5.11. List Comprehensions

5.12. Zip function

5.13. Stacks

5.14. Queues

5.15. Tuples

5.16. Swapping Variables

5.17. Arrays

5.18. Sets

5.19. Dictionaries

5.20. Dictionary Comprehensions

5.21. Generator Expressions

5.22. Unpacking Operator

5.23. Exercise

**Chapter 6: Exceptions**

6.1. Exceptions

6.2. Handling Exceptions

6.3. Handling Different Exceptions

6.4. Cleaning Up

6.5. The With Statement

6.6. Raising Exceptions

6.7. Cost of Raising Exceptions

**Chapter 7: Classes**

7.1. Classes

7.2. Creating Classes

7.3. Constructors

7.4. Class vs Instance Attributes

7.5. Class vs Instance Methods

7.6. Magic Methods

7.7. Comparing Objects

7.8. Performing Arithmetic Operations

7.9. Making Custom Containers

7.10. Private Members

7.11. Properties

7.12. Inheritance

7.13. The Object Class

7.14. Method Overriding

7.15. Multi-level Inheritance

7.16. Multiple Inheritance

7.17. A Good Example of Inheritance

7.18. Abstract Base Classes

7.19. Polymorphism

7.20. Duck Typing

7.21. Extending Built-In Types

7.22. Data Classes

**Chapter 8: Modules**

8.1. Creating Modules

8.2. Compiled Python Files

8.3. Module Search Path

8.4. Packages

8.5. Sub-packages

8.6. Intra-package References

8.7. The dir Function

8.8. Executing Modules as Scripts

**Chapter 9: Python Standard Library**

9.1. Python Standard Library

9.2. Working with Paths

9.3. Working with Directories

9.4. Working with Files

9.5. Working with Zip Files

9.6. Working with CSV Files

9.7. Working with JSON Files

9.8. Working with a SQLite Database

9.9. Working with Timestamps

9.10. Working with DateTimes

9.11. Working with Time Deltas

9.12. Generating Random Values

9.13. Opening the Browser

9.14. Sending Emails

9.15. Templates

9.16. Command-line Arguments

9.17. Running External Programs

**Chapter 10: Python Package Index**

10.1. Pypl

10.2. PIp

10.3. Virtual Environments

10.4. PIpenv

10.5. Virtual Environments inVSCode

10.6. PIpfile

10.7. Managing Dependencies

10.8. Publishing Packages

10.9. Docstrings

10.10. Pydoc

**Chapter 11: Popular Python Packages**

11.1. Introduction

11.2. What are APIs

11.3. Yelp API

11.4. Searching for Businesses

11.5. Hiding API Keys

11.6. Sending Text Messages

11.7. Web Scraping

11.8. Browser Automation

11.9. Working with PDFs

11.10. Working with Excel Spreadsheets

11.11. Command Query Separation Principle

11.12. NumPy

**Chapter 12: Building Web Applications with Django**

12.1. Introduction

12.2. Your First Django Project

12.3. Your First App

12.4. Views

12.5. Models

12.6. Migrations

12.7. Changing the Models

12.8. Admin

12.9. Customizing the Admin

12.10. Database Abstraction API

12.11. Templates

12.12. Adding Bootstrap

12.13. Customizing the Layout

12.14. Sharing a Template Across Multiple Apps

12.15. Url parameters

12.16. Getting a Single Object

12.17. Raising 404 Errors

12.18. Referencing Urls

12.19. Creating APIs

12.20. Adding the Homepage

12.21. Getting Ready to Deploy

12.22. Deployment

**Chapter 13: Machine Learning with Python**

13.1. What is Machine Learning

13.2. Machine Learning in Action

13.3. Libraries and Tools

13.4. Importing a Data Set

13.5. Jupyter Shortcuts

13.6. A Real Machine Learning Problem

13.7. Preparing the Data

13.8. Learning and Predicting

13.9. Calculating the Accuracy

13.10. Persisting Models

13.11. Visualizing a Decision Tree