

The Essential AI Workbench (Python + Github Copilot X + Visual Studio Code)



Overview

Our 2-day AI Workbench (Python / Copilot X / VS Code) course is designed for non-programmers who want to dive into AI development. You'll learn how to implement and debug AI code using generative AI systems like ChatGPT and Github Copilot X, and the widely-used AI support language Python.

We'll guide you through setting up your integrated developer's environment with Visual Studio Code and Copilot X, and show you how to identify what the programs are doing and how to fix them if there is a problem. Best of all, you don't need to be a programmer - you can simply cut and paste code or accept suggestions from the AI.

By taking this course, you'll be able to customize AI solutions and follow along with examples at OpenAI, Huggingface, or thousands of YouTube videos. Imagine the possibilities - from building your own chatbot to analyzing data for your business, AI is a game-changer. Enroll now and take the first step toward becoming an AI developer!

Prerequisites

Familiarity with basic computer concepts such as file management. No prior Python or programming experience is required.

Course Outline

VISUAL STUDIO CODE INTRODUCTION

Getting Started with Visual Studio Code

- Setup
- Extensions
- Customization

Basic Tips and Tricks

- Command line
- Status Bar
- Customization
- Extensions
- Files and folders
- Editing hacks
- IntelliSense
- Snippets
- Git integration
- Debugging

User Interface

- Basic Layout
- Side-by-side editing
- Minimap
- Breadcrumbs
- Explorer
- Open Editors
- Views
- Command Palette
- Configuring the editor
- Tabs
- Preview mode
- Editor Groups
- Grid editor layout
- Working without Tabs
- Window management

GITHUB COPILOT X INTRODUCTION

Introduction to GitHub Copilot X

- Signing up for GitHub Copilot for your personal account
- Signing up for GitHub Copilot for your organization account
- Installing the GitHub Copilot extension for Visual Studio Code
- Getting your first suggestion

About GitHub Copilot and Visual Studio Code

- Installing Visual Studio Code Extension
- Seeing your First Suggestion
- Seeing Alternative Suggestions
- Seeing multiple suggestions in a new tab
- Generating Code suggestions from Comments
- Using a Framework
- Enabling/Disabling GitHub Copilot

Configuring GitHub Copilot

- Github Settings
- In Your Environment
- Organizational Settings

Workshop: Using GitHub Copilot with your Python Projects

PYTHON INTRODUCTION

Learn Python basics, including the following elements:

- Boolean types
- Strings
- Mathematical operations
- Lists and loops
- Dictionaries
- Functions
- Error checking
- Get familiar with Jupyter notebooks

Get started with Python in Visual Studio Code

- Get started with learning Python by installing and configuring the tools you'll need to build real applications.
- Validate your Python version and installation
- Install Python
- Install Visual Studio Code
- Install the Python extension
- Create your first Python application

Write your first Python programs

- In this module, you'll learn a variety of topics, like input and output to the console, variables and data types, and type conversion.
- Work with output
- Exercise - Work with output
- Collect input

Create and manage projects in Python

- To manage projects, you need a virtual environment, packages that will help you develop faster, and a strategy for maintaining packages.
- Introduction
- Work with packages
- Exercise - Create a package
- Work with project files

Use Boolean logic in Python

- Explore how to use Boolean logic in Python to craft complex expressions that apply conditional logic.

Write 'if' statements

What are 'else' and 'elif' statements?

Exercise - Write 'if' statements

What are 'and' and 'or' operators?

Exercise - Use 'and' and 'or' operators

Use strings in Python

Use one of the most common types in Python to represent text. From simple formatting to representing variables, using operating strings is a critical skill for Python developers.

String basics in Python

String methods in Python

Exercise - Transform text by using string methods

String format in Python

Use mathematical operations in Python

Almost every application a developer creates involves some level of math. This module will explore the core functionality of Python and arithmetic operators. You will also explore how to perform more manipulations of data and numbers.

What are operators in Python?

Exercise - Use arithmetic operators

Work with numbers in Python

Introduction to lists in Python

You'll often work with multiple values in a program. In Python, you can group data together by using lists.

In this module, you'll learn how to use lists and what the most common tasks with lists are.

Introducing lists

Exercise - Create and use Python lists

Work with numbers in lists

Manipulate list data

Use 'while' and 'for' loops in Python

With Python, you can use while loops to run the same task multiple times and for loops to loop once over list data. In this module, you'll learn about the two loop types and when to apply each.

About 'while' loops

Exercise - Create a 'while' loop

Use 'for' loops with lists

Manage data with Python dictionaries

Python dictionaries allow you to model complex data. This module explores common scenarios where you could use dictionaries.

Introducing Python dictionaries

Exercise - Create Python dictionaries

Dynamic programming with dictionaries

Exercise - Dynamic programming with dictionaries

Python functions

The next step after using procedural code is to write modular software by using functions. Functions, from simple ones to multiple-argument ones, are useful in making code reusable.

Basics of Python functions

Use function arguments

Use keyword arguments

Use variable arguments

Python error handling

Handle exceptions and create useful error messages. Improve your skills by using exceptions for code flow control.

Use tracebacks to find errors

Handle exceptions

Exercise - Handle exceptions

Raise exceptions

Exercise - Work with exceptions

Get started with Jupyter notebooks for Python

Use Jupyter notebooks to run Python. Build a spaceship manual that has interactive, runnable Markdown and code elements.

Set up your environment

Create and run your notebook

Use advanced commands

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