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PYTHON FOR WEB APPS & DATA

SYLLABUS

PYTHON FOR WEB APPS & DATA COURSE
syllabus

HAVE A QUESTION? ASK!
Read up on all the ways you can
[get help](#).

CONFUSION IS GOOD :)
Seriously, it's scientific fact.
[Read all about it!](#)

REMEMBER, YOU ARE NOT ALONE!
Join your Skillcrush classmates in the [student community](#)!

GET THE SUPPORT YOU NEED
Find out all the ways you can get help [here](#)!

BEFORE YOU BEGIN

START YOUR ORIENTATION:

[Welcome to Skillcrush!](#)

GENERAL OBJECTIVES

1 Apply computational thinking to write Python apps that respond to user input.

2 Build powerful, meticulously organized web apps that dynamically render data.

3 Create stunning data visualizations from datasets.

CLASS GOALS

1 CREATE A PERSONAL ASSISTANT APP TO RECALL IMPORTANT INFORMATION.

2 BUILD A DYNAMIC WEB APP TO STORE AND DISPLAY VIRTUAL TRADING CARDS.

3 APPLY STATISTICAL ANALYSIS TECHNIQUES TO SUMMARIZE & DISPLAY DATA.

4 BUILD A WEB SCRAPER TO GATHER, ANALYZE, AND DISPLAY COMPELLING DATA.

SKILLCRUSH 110: GETTING STARTED WITH PYTHON

In this class, you'll learn the Python coding basics all developers need to write organized, efficient code. You'll start by solving some real-world problems using computational thinking. You'll also get to know the wonderful world of modules and libraries as you write your first Python apps, which are shortcuts to help you write code efficiently. Finally, you'll learn how to automate the process of editing and retrieving data from files to save time and reduce human error. And all the while, you'll build a variety of efficient, interactive Python apps that will wow your friends, family, and future employers!

	INTRODUCTION TO PYTHON
SKILL LESSONS 1-4	- Introducing Python - Building Variables & Data Types - Using Control Structures - Fun with Functions

	PYTHON DATA STRUCTURES
SKILL LESSONS 5-8	- Saving Time with Modules - Lists in Python - Let's Get Loopy - Dictionaries

	TOOLS FOR LEVELING UP WITH PYTHON
SKILL LESSONS 9-12	- Classes & Objects - File Types in Python - Doing More with Modules - Finding Additional Python Tools & Support

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SKILLCRUSH 210: USING PYTHON TO BUILD WEB APPS

Python is a popular programming language for web development because it's versatile and easy to write! Throughout this class, you'll learn about a dynamic Python framework for writing interactive web apps that can be used for a variety of purposes, from collecting and storing data to building web frameworks and handling user input. You'll use the popular Python framework Flask to make short order of repetitive tasks, like filling in the product information on an app that sells clothing, then dig into databases, which store and retrieve loads of data in an organized manner. You'll also learn how to handle user input from a form and store that information in a SQL database. Finally, you'll level up your skills with the REST API, which lets you build even fancier web apps.

	INTRODUCTION TO PYTHON FOR WEB DEVELOPMENT
SKILL LESSONS 1-4	• Intro to Python for Web Development • Connecting the Front & Back End with Python • Getting Started with Flask • Python & the Front End

	BUILDING & INTERACTING WITH DATABASES
SKILL LESSONS 5-8	• Get Up and Running with Routing • Templating with Jinja • Databases with SQL • Interacting with Your SQL Database

	THE REST API & FINALIZING YOUR CLASS PROJECT
SKILL LESSONS 9-11	• The REST API • Finish Your Project with REST Endpoints • Sharing Your Web App & Next Steps with Web Dev

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SKILLCRUSH 310: PREPARING AND DISPLAYING DATA WITH PYTHON

Different types of data are everywhere—from historical population data to political opinion surveys—and Python is the perfect tool for gathering, analyzing, and displaying those data. To find data to work with, you'll use existing datasets that are publicly available, plus you'll harness the power of web scraping to automatically collect information from websites. Fancy, we know! You'll analyze data with the Pandas and NumPy libraries to identify patterns, organize data, and make educated guesses about future events! You'll also create attractive and memorable graphs and charts using data visualization tools like Matplotlib and Seaborn. And best of all, visualizations are the fastest way to discover trends in data to gain valuable insights.

	INTRODUCTION TO DATA ANALYSIS & VISUALIZATIONS
SKILL LESSONS 1-4	- Using Python for Data Analysis - Vivid Visualizations with Matplotlib - Modifying Data with NumPy - Aggregating Data with NumPy

	GETTING FANCY WITH LIBRARIES
SKILL LESSONS 5-8	- Probability - The Pandas Library - Fancy Visualizations with Seaborn - Intro to Web Scraping

	CREATING PROFESSIONAL DATA VISUALIZATIONS
SKILL LESSONS 9-12	- Data Collection with Beautiful Soup - Preparing Your Data - Creating Professional Visualizations - Presenting Your Work & Building Your Data Skills

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