

**Python for Marketers with Python Experience**

**Course Number:** PYTH-230  
**Duration:** 3 days

**Overview**

This Python for Marketers with Python Experience training course teaches experienced Python coders how to gather, manipulate, and analyze data using the Python programming language. Participants learn how to gather marketing data, clean it, and create compelling data visualizations. In addition, participants learn how to run A/B tests on groups of data, segment customer data, and much more.

If your team does not yet know Python, we have a [5-day Python for Marketers class](file:////training/python-for-marketing) that includes a 2-day Python programming primer.

**Prerequisites**

All students must have Python programming experience.

**Materials**

All Python for Marketers training students receive comprehensive courseware.

**Software Needed on Each Student PC**

* Any Windows, Linux, or macOS operating system
* Anaconda Python 3.6 or later
* Additional Python libraries, including seaborn, selenium, and BeautifulSoup
* Spyder IDE and Jupyter notebook (Comes with Anaconda)

**Objectives**

* Gather data by scraping websites and querying web APIs
* Effectively clean, aggregate, and manipulate data
* Create compelling data visualizations
* Apply statistical techniques for running A/B tests on groups of data
* Use popular techniques to segment customer data
* Perform regression analysis to identify factors that have an impact on topics of interest
* Acquire skills for performing basic analysis on text data

**Outline**

* Introduction
* Scraping data from websites
  + Connecting to websites using requests package
  + Parsing static HTML/CSS pages using BeautifulSoup package
  + Scraping dynamic website content using Selenium
  + Advanced: Building a web spider using scrapy
* Using Web APIs
  + Collecting data from a publicly available web API
* Numerical Python with NumPy
  + ND arrays
  + NumPy operations
  + Broadcasting
  + Structured arrays
  + Vectorization
* Data Manipulation using Pandas
  + Series vs Dataframe
  + Datatypes in Pandas
  + Importing data: CSV/Excel/JSON/HTML
  + Dataframe indexing
  + Selecting subsets of dataframe
  + Creating and deleting variables
  + Identifying duplicate data
* Advanced Pandas Methods
  + Uni and multivariate statistical summaries
  + Handling missing data
  + Aggregating data
  + Pivot tables
  + Merging dataframes
  + Pandas string methods
* Data Visualization using Matplotlib and Seaborn
  + Creating histograms
  + Creating bar plots
  + Creating box plots
  + Creating scatter plots
  + Group-by plotting
  + Plot formatting
* A/B Testing for group differences
  + p-values
  + T-test
  + Chi-squared test
* Regression Analysis
  + Linear Regression
  + Logistic Regression
* Customer segmentation
  + K-means clustering algorithm
  + Hierarchical clustering algorithm
  + RFM Analysis
* Text Analysis
  + Tokenizing text
  + Stopwords
  + Cleaning and processing text
  + Creating word clouds
  + Named Entity Recognition
  + Sentiment analysis
* Conclusion