Hands-on Data Analysis with Pandas (TTPS4878)

Category: AI, Data & Analytics | **Vendor:** Trivera Tech

Duration: 24.00 hours (3 days) **19.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

Hands-On Data Analysis with Pandas®will show you how to analyze your data, get started with machine learning, and work effectively with Python libraries often used for data science, such as pandas, NumPy, matplotlib, seaborn, and scikit-learn.

About This Course

Data analysis has become a necessary skill in a variety of domains where knowing how to work with data and extract insights can generate significant value. Geared for data team members with incoming Python scripting experience, Hands-On Data Analysis with Pandas will show you how to analyze your data, get started with machine learning, and work effectively with Python libraries often used for data science, such as pandas, NumPy, matplotlib, seaborn, and scikit-learn.

Using real-world datasets, you will learn how to use the powerful pandas library to perform data wrangling to reshape, clean, and aggregate your data. Then, you will be able to conduct exploratory data analysis by calculating summary statistics and visualizing the data to find patterns. In the concluding lessons, you will explore some applications of anomaly detection, regression, clustering, and classification using scikit-learn to make predictions based on past data. Students will leave the course armed with the skills required to use pandas to ensure the veracity of their data, visualize it for effective decision-making, and reliably reproduce analyses across multiple datasets.

NOTE: Students heading into real project work right after training might consider a more robust hands-on course with deeper topics and lab coverage for similar subjects, such as the TTPS4873 JumpStart to Python for Data Science

Who Should Attend

This introductory-level course is for anyone in IT interested in on basic exposure to leveraging Python for data science and analytics.

Prerequisites & Entry Requirements

General Prerequisites:

This course is geared for Python-experienced attendees who wish to be equipped with the skills you need to use pandas to ensure the veracity of your data, visualize it for effective decision-making, and reliably reproduce analyses across multiple datasets.

Learning Outcomes

Upon successful completion of this course, participants will be able to:

This course is approximately 50% hands-on, combining expert lecture, real-world demonstrations and group discussions with machine-based practical labs and exercises. Our engaging instructors and mentors are highly experienced practitioners who bring years of current "on-the-job" experience into every classroom.

Working in a hands-on learning environment, guided by our expert team, attendees will learn to:

- Understand how data analysts and scientists gather and analyze data
- Perform data analysis and data wrangling using Python
- Combine, group, and aggregate data from multiple sources
- Create data visualizations with pandas, matplotlib, and seaborn
- Apply machine learning (ML) algorithms to identify patterns and make predictions
- Use Python data science libraries to analyze real-world datasets
- Use pandas to solve common data representation and analysis problems
- Build Python scripts, modules, and packages for reusable analysis code
- Perform efficient data analysis and manipulation tasks using pandas
- Apply pandas to different real-world domains with the help of step-by-step demonstrations
- Get accustomed to using pandas as an effective data exploration tool.

Detailed Course Outline

Introduction to Data Analysis

Fundamentals of data analysis

Statistical foundations

Setting up a virtual environment

Working with Pandas DataFrames

Pandas data structures

Bringing data into a pandas DataFrame

Inspecting a DataFrame object

Grabbing subsets of the data

Adding and removing data

Data Wrangling with Pandas

What is data wrangling

Collecting temperature data

Cleaning up the data

Restructuring the data

Handling duplicate, missing, or invalid data

Aggregating Pandas DataFrames

Database-style operations on DataFrames

DataFrame operations

Aggregations with pandas and numpy

Time series

Visualizing Data with Pandas and Matplotlib

An introduction to matplotlib

Plotting with pandas

The pandas.plotting subpackage

Plotting with Seaborn and Customization Techniques

Utilizing seaborn for advanced plotting

Formatting

Customizing visualizations

Financial Analysis - Bitcoin and the Stock Market

Building a Python package

Data extraction with pandas

Exploratory data analysis

Technical analysis of financial instruments

Modeling performance

Rule-Based Anomaly Detection

Simulating login attempts

Exploratory data analysis

Rule-based anomaly detection

Getting Started with Machine Learning in Python

Learning the lingo

Exploratory data analysis

Preprocessing data

Clustering

Regression

Classification

Making Better Predictions - Optimizing Models

Hyperparameter tuning with grid search

Feature engineering

Ensemble methods

Inspecting classification prediction confidence

Addressing class imbalance

Regularization

Machine Learning Anomaly Detection

Exploring the data

Unsupervised methods

Supervised methods

Online learning

The Road Ahead

Data resources

Practicing working with data

Python practice

Additional Course Details

Nexus Humans Hands-on Data Analysis with Pandas (TTPS4878) training program is a workshop that presents an invigorating mix of sessions, lessons, and masterclasses meticulously crafted to propel your learning expedition forward.

This immersive bootcamp-style experience boasts interactive lectures, hands-on labs, and collaborative hackathons, all strategically designed to fortify fundamental concepts.

Guided by seasoned coaches, each session offers priceless insights and practical skills crucial for honing your expertise. Whether you're stepping into the realm of professional skills or a seasoned professional, this comprehensive course ensures you're equipped with the knowledge and prowess necessary for success.

While we feel this is the best course for the Hands-on Data Analysis with Pandas (TTPS4878) course and one of our Top 10 we encourage you to read the course outline to make sure it is the right content for you.

Additionally, private sessions, closed classes or dedicated events are available both live online and at our training centres in Dublin and London, as well as at your offices anywhere in the UK, Ireland or across EMEA.

Frequently Asked Questions

Q: What delivery options are available for Hands-on Data Analysis with Pandas (TTPS4878)?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 3-day Hands-on Data Analysis with Pandas (TTPS4878) course provides up to 19.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Hands-on Data Analysis with Pandas (TTPS4878) training?

The training takes place over 3 day(s), with each day lasting approximately 24.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Hands-on Data Analysis with Pandas (TTPS4878)?

Yes, we provide corporate training, dedicated training, and closed classes for Hands-on Data Analysis with Pandas (TTPS4878). Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: Python; Data Science; Data Anlaysis

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Q: Why choose Nexus Human for Hands-on Data Analysis with Pandas (TTPS4878)?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Hands-on Data Analysis with Pandas (TTPS4878) training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

Nexus Human

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