Python - Data Visualization and Dashboarding

Course code: PYTHON_VIS

This course is designed for anyone who wants to effectively visualize data sets using various Python libraries and tools, create interactive dashboards to present data, work with batch and stream data, and use advanced tools and libraries such as Voila, Panel, Streamlit, Vaex, and Apache Superset.

Affiliate	Duration	Course price	ITB
Praha	5	26 500 Kč	50
Brno	5	26 500 Kč	50
Bratislava	5	1 150 €	50

The prices are without VAT.

Course terms

Date	Duration	Course price	Type	Course language	Location
30.06.2025	5	26 500 Kč	Online	CZ/SK	Gopas Praha Online
30.06.2025	5	1 150 €	Online	CZ/SK	Gopas Bratislava Online

The prices are without VAT.

What we'll teach you:

- Efficiently visualize data sets using various Python libraries and tools.
- Create interactive dashboards to present data.
- You will learn techniques for working with batch and stream data.
- Learn to use advanced tools and libraries such as Voila, Panel, Streamlit, Vaex, and Apache Superset.

Who this course is for:

- Data analysts and data scientists who want to learn how to effectively visualize data and create interactive dashboards.
- Software developers who want to implement visualization components in their applications.
- IT professionals and business intelligence professionals who want to learn how to work with large data sets and streaming data.
- Anyone who has a basic understanding of Python and wants to expand their data visualization skills.

Required Entry Skills:

- Basic knowledge of Python at course level [PYTHON_INTRO].
- Basic knowledge of working with data using the Pandas library.
- Basic knowledge of data analysis concepts and techniques [PYTH_DATAAN].

Teaching methods:

- Expert commentary with practical demonstrations, computer exercises.

Study materials:

- Presentation of the material discussed in printed or online form.

Syllabus:

Fundamentals of data visualization

- Introduction to data visualization.
- Meaning and importance of data visualization
- Types of graphs and their uses
- Principles of effective data visualization

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- Working with batch data
- Importing and preparing data using Pandas and Vaex
- Visualizing basic graphs using Matplotlib and Seaborn
- Advanced visualization techniques (multiple sub-graphs, color palettes, interactive graphs with Plotly)

Interactive visualization and dashboards

- Interactive visualization with Plotly
- Creating interactive charts (line, point, bar, 3D charts)
- Adding interactive elements (hover information, interactive axes and legends)
- Creating dashboards using Voila
- Introduction to Voila
- Converting Jupyter notebooks to interactive dashboards
- Working with interactive widgets and charts
- Deploying Voila dashboards

Advanced dashboards and streaming data

- Dashboards with the Dashboard tool
- Introduction to dashboards
- Creating interactive dashboards
- Integration with Bokeh, Matplotlib and Plotly
- Adding interactive widgets and customizing layouts
- Visualization of stream data
- Introduction to stream data
- Using modules like Vaex and Pandas for streaming data
- Interactive plots for stream data using Plotly and Panel

Creating interactive applications

- Streamlit
- Introduction to Streamlit
- Creating interactive applications and dashboards
- Adding inputs, charts and widgets
- Deploying Streamlit apps
- Apache Superset
- Introduction to Apache Superset
- Installation and Configuration
- Working with databases and data sources
- Creating and customizing dashboards
- Interactive data visualization and filtering

Hands-on exercises and projects

- Practical exercise 1: Analysis and visualization of real batch data
- Importing and preparing data
- Creating visualizations according to specifications
- Practical exercise 2: Visualization of stream data
- Setting up stream data
- Interactive visualization for stream data
- Practical exercise 3: Creating a complex dashboard
- Design and implement an interactive dashboard using Voila, Panel or Streamlit.
- Project presentation and discussion
- Participants present their projects
- Feedback from the trainer and other participants

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- Discussion on possible improvements and next steps

Summary and conclusion of the training

- Summary of the main points of the training
- Discussion and questions
- Presentation of the training certificate

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