

Updated 05/28/2024

Sign up

Training: Developing Data Visualization Applications

4 days (28 hours)

Presentation

In the age of Big Data, being able to communicate this data effectively and without error has become extremely important for decision-making. Data visualization (also known as DataViz) has become a discipline in its own right, with the aim of informing all stakeholders in an organization in the best possible way. This approach is based on essential design principles such as cognitive load reduction, aesthetics and simplicity. Combining statistics, data preparation and visualization is a considerable asset when it comes to establishing your strategy. Our training course in data visualization application development will focus on the definition of data visualization and its legal framework. You'll also discover how to represent this data in practice, by developing applications with Python (Matplotlib and Pandas).

Objectives

- Understand data visualization, its challenges, objectives and principles
- Designing data visualizations
- Master the legal framework for data storage and analysis
- Learn about the main data visualization tools and frameworks
- Using APIs for data visualization

Target audience

- Developers
- Project managers
- Data analysts
- Data scientists
- Statisticians
- People who want to visualize data in a practical way

Prerequisites

Program of our training course Developing DataVisualization Applications

The importance of context

- How does context influence our visualization?
- Adapting visuals to the context
- Exploratory vs Explanatory analysis
- Data types
 - Digital data
 - Data by category
 - Time series
- Questions to answer before taking the plunge
- Storyboarding

Design principles

- Minimalism
- Simplicity
- Colors and contrast
- Typography and style
- The hierarchy
- Variety and unity

How and when to apply the different representation models?

- The text
- The tables
- Graphs
- Points
- The lines
- The bars
- 3D graphics
- Other types of graphics

Data Storytelling

- The elements that make a visualization persuasive
- Have a Big Idea
- Building a narrative structure
- Simplify your speech

- The power of repetition

The legal framework for data storage and analysis

- Fundamental concepts of the RGPD
- Regulations for servers
- Bonds
- Maintain and update a data processing register
- Appoint a DPO
- Ensuring subcontractor compliance
- Data matching regulations
- Risks of non-compliance

DataViz tools presentation

- JavaScript frameworks
- Java frameworks
- Python libraries (Matplotlib, Pandas, Scikit-learn...)
- Tableau and PowerBI
- Using APIs for data visualization

Data recovery

- Integrating data with Python
- Offline data retrieval with Python

Data visualization with Matplotlib

- Pyplot
- Start an interactive session
- Interactive plot with Pyplot's global state
- Matplotlib configuration
- Set figure size
- Labels and captions
- Axis titles and labels
- Axes and sub-axes
- Track types
- Bar graphs
- Point clouds
- Seaborn: facet_grid and PairGrid

Explore your data with Pandas

- Visualize your data with Pandas
- Make comparisons
- Practical work: Finding insights from visualizations

Successful data analysis

- The importance of data collection and preparation
- The different phases of data analysis
- Perform a descriptive analysis
- Apply the right algorithms and predictive models
- Automate your data analysis process

Companies concerned

This course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Sanction

A certificate will be issued to each trainee who completes the course.

[Training Program Web page](#) - Appendix 1 - Training sheet

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