Scandinavian Academy
for Training and Development AB

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Course: Big Data Management and Analysis Tools

Code	City	Hotel	Start	End	Price	Language - Hours
849	Prague (Czech Republic)	Hotel Meeting Room	2025-07-28	2025-08-01	5450 €	En - 25

Course Introduction

We live in the "Information Age," where data plays a crucial role in making smart decisions and understanding trends and patterns across various fields. With the growing volume of data collected daily, it has become essential to understand how to efficiently and effectively utilize and analyze this data.

This training program provides an opportunity to acquire the necessary skills and knowledge to examine and extract value from big data. Participants will engage in a series of intensive lessons and practical workshops covering the latest tools and techniques for big data analysis used across different industries.

General Course Objective

This program aims to equip participants with fundamental and advanced knowledge in big data management and analysis. It covers key tools and technologies for data storage and analysis, leveraging machine learning and artificial intelligence to extract meaningful insights. By mastering these techniques, participants will be able to enhance business processes and make data-driven strategic decisions.

Course Objectives

- Understand the principles and importance of big data analysis.
- Learn about the tools and technologies used in big data management and analysis.
- Gain knowledge of storage and management solutions such as Hadoop and Apache

Spark.
- Utilize machine learning and AI techniques for big data analysis.
- Develop skills in predictive analytics and advanced statistical modeling.
- Learn to analyze unstructured data, including text, images, and videos.
- Enhance the ability to design and implement efficient data storage and analysis systems.
- Train participants on managing big data securely in compliance with modern regulations.
- Explore future trends and innovations in big data analytics.

Target Audience

- IT managers and digital analysts.
- Data analysts and statisticians.
- Research and development teams in corporations and institutions.
- AI and machine learning specialists.
- Professionals in finance, marketing, and industrial sectors dealing with large datasets.
- Cybersecurity and data protection specialists.
- Anyone interested in big data analysis and its applications in strategic decision-making.

Course Outline

Introduction to Big Data and Fundamentals

- The concept and significance of big data in the modern world.
- Challenges in big data management: volume, variety, velocity, and veracity.
- Different types of data: structured, textual, audio, and image data.
- Big data storage tools: NoSQL databases and distributed file systems.

Data Analysis Using Machine Learning Techniques

- Setting analysis goals and organizing data.
- Introduction to machine learning and AI in big data analysis.
- Machine learning vs. deep learning: differences and practical applications.
- Open-source machine learning tools for big data analytics.
- Case studies and real-world applications of AI in big data analysis.

Advanced Analytical Techniques

- Analyzing unstructured data using deep learning.
- Predictive analytics and advanced statistical modeling.
- Connecting big data analytics to marketing and decision-making strategies.
- Image and video analysis using deep neural networks.
- Text analysis using Natural Language Processing (NLP).

Data Management and Big Data Storage Solutions

- Overview of big data technologies: Hadoop, Apache Spark, and their functions.
- Managing large datasets with big data management systems.
- Querying big data using SQL and NoSQL databases.
- Case studies on big data applications in social networks and healthcare.

Designing a Scalable Data Infrastructure

- Selecting the right database: NoSQL (MongoDB, Cassandra) or scalable databases (Hadoop, Apache Spark) based on project needs.
- Distributed storage and efficient querying to ensure performance optimization.

Interacting with Big Data and APIs

- Real-time big data processing tools and techniques.
- Building APIs for big data interaction.
- AI and machine learning applications for big data interaction.

Future Trends and Innovations in Big Data Analytics

- The future of big data: Virtual reality, AI, and quantum computing.
- Predictive analytics and forecasting using big data.
- Innovations in data analysis: Case studies from successful companies.
- Discussion on future trends in big data management and analytics.

Security and Data Protection in Big Data

- Challenges and risks associated with big data security.
- Advanced encryption and data protection techniques.
- Identity and access management in big data environments.
- Incident response strategies for data breaches.
- Compliance with legal and regulatory standards for data protection.
- Ethical considerations in big data analysis: Consumer privacy and responsible data use.

The Scandinavian Academy for Training and Development adopts the latest scientific and professional methodologies in training and human resource development, aiming to enhance the efficiency of individuals and organizations. Training programs are delivered through a comprehensive approach that includes:

- Theoretical lectures supported by PowerPoint presentations and visual materials (videos and short films).
- Scientific evaluation of participants before and after the program to measure progress and knowledge acquisition.
- Brainstorming sessions and practical role-playing to simulate real-life scenarios.
- Case studies tailored to align with the training content and participants work nature.
- Assessment tests conducted at the end of the program to evaluate the achievement of training objectives.

Each participant receives the training material (both theoretical and practical) in printed form and saved on a CD or flash drive. Detailed reports, including attendance records, final results, and overall program evaluations, are also provided.

Training materials are prepared professionally by a team of experts and specialists in various fields. At the end of the program, participants are awarded a professional attendance certificate, signed and accredited by the Scandinavian Academy for Training and Development.

Program Timings:

- 9:00 AM to 2:00 PM in Arab cities.
- 10:00 AM to 3:00 PM in European and Asian cities.

The program includes:

- A daily buffet provided during the sessions to ensure participants comfort.