

- Explore the specific aspects of testing in a BI & DA environment and how these compare to traditional testing
- Gain insight in and learn to apply different test techniques in a BI & DA environment
- Understand the difference between quality attributes for system requirements and the specific quality attributes applied to data environments
- Understand and assess risk analysis and how to apply this in a BI & DA environment given the specific aspects of the environment
- Understand the effects of privacy and data protection regulations for testing in DA projects

As the prioritization of data grows, so does the importance of test and quality in supplying and evaluating reliable, complete, and continuous on-time information delivery. This dynamic and interactive course is designed to help students learn the practical skills necessary to fully understand the complexity and elements in a Business Intelligence (BI) & Data Analytics (DA) environment and the specific aspects of testing in a BI & DA environment.

Throughout this course, participants gain insights in the different skillsets required and the diversity of test roles/skills in a BI & DA environment and learn to apply different test techniques specific to this environment. They also gain valuable insights about the different test aspects of a BI & DA environment compared to traditional testing, e.g., testing of transformations, completeness, and visualizations.

Participants discover the differences between quality attributes for system requirements and the specific quality attributes applied to data environments. They also experience risk analysis and how to apply the specific aspects throughout the BA and DA environment.

DAU-CDAT participants will be able to assess the complexity of data and understand its importance in data analytics. They gain first-hand knowledge about the complexity of DTAP environments (Development, Test, Acceptance and Production) within a BI & DA environment and important awareness about the effects of privacy and data protection regulations for testing in DA projects.

Interactive exercises practice in the following:

- Establishing a Risk-based testing strategy
- Applying various test design techniques, eliciting test cases relevant for the Data & Analytics environment
- Assessing Data Completeness using basic using database routines
- Performing data profiling tasks to an example data set
- Establishing Data Quality using the correct terminology

## Who Should Attend

This certification program is designed for test engineers, test coordinators, managers, business analysts, data leads, data warehouse developers and BI-consultants, and those charged with improving the quality of (big) data used in data and analytics projects. Although there are no mandatory prerequisites, please note the following recommendations:

- Test and QA professionals: ISTQB Certified Tester Foundation Level (CTFL) certificate or equivalent experiences, as this course will not cover the fundamentals and terminology of testing. This practical certification course will take your understanding of testing a step further and provide you with a variety of approaches and techniques that are essential for data and analytics testing.
- Business Analysts and BI Consultants: Previous experience with (big) data.

## About Data & Analytics United

Motivated to create awareness, knowledge and experience in Data & Analytics testing among people and organizations all over the world, Data & Analytics United is a Special Interest Group supported by the team at [Brightest](#) [1].

## Course Outline

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### **Introduction to Business Intelligence (BI) and Data & Analytics (DA)**

- Business Intelligence
- Challenges when turning corporate data into information
- Data Warehouse
- Data Mart
- Data Lake
- Data Analytics
- Big Data
- Data Mining
- OLTP vs OLAP
- Reporting and Data Visualization
- Data Modeling
- The ETL-Process
- Internationalization and Localization

### **Data & Analytics Testing Strategy**

- Testing and Test Methodologies
- BI & DA Testing in a traditional approach
- BI & DA Testing in an agile approach
- Risk based Testing in a BI & DA environment
- Testing Roles and Skills
- Set-up a test-strategy and approach in a BI environment
- Data & Analytics Test Techniques
- What are test techniques
- Different techniques
- Mapping techniques on a BI & DA Environment

### **BI Testing**

- Reports- and Dashboards Testing
- Testing of OLAP Cubes
- Testing the Data Model
- Testing in Data Mining
- Completeness Testing
- Transformation Testing
- E2E testing

### **Data Quality**

- Quality
- Quality Characteristics (ISO/IEC 25010)
- Data Quality Characteristics
- Data Profiling

### **Environmental Needs**

- Test environments according to DTAP
- Multidimensional DTAP in a BI environment
- Impact of Security Standards like ISO/IEC 27001 on Analytics Testing
- Impact of Privacy Regulations on Testing in the Analytics Environment
- Encryption methodologies for Anonymization and Pseudonymization
- Common Pitfalls using Production Data