

## Data Analyst

*Data Analyst* is the seventh course in the CIW Web And Mobile Design series. This course teaches how to use data to analyze all aspects of a company's operation and make appropriate business decisions. It focuses on Web-oriented data, and methods for analyzing data in order to create appropriate dashboards, reports and solutions.

This course teaches students how to identify typical sources of institutional knowledge, including Customer Relationship Management (CRM) applications, inventory management systems, transaction data, social media, marketing sources, industry systems. Students will compare and contrast structured and unstructured data in order to summarize how data can drive business decisions. The course also covers specific tactics for working with cloud-based data, including cloud-native data, migrating data to or from the cloud, backup procedures, security issues, and user training.

Students will learn ways to determine relationships between organizational efforts and business outcomes, extrapolate information using data obtained from new and traditional data sources, and ways to analyze and represent data. Students will also learn how ethics and security are vital parts of a Data Analyst's responsibilities. The Data Analyst can compile the data from many sources, prepare and deliver an objective and unbiased presentation.

### Topics

#### Fundamentals of Data Analysis

- The Importance of Good Data
  - Data Filtering
- Data Structure Types
- Centralized Data Benefits
- Structured vs. Unstructured Data
- Case Study: Forgetting Steve Jobs
- Types of Data
  - Administrative Data
  - Open Data
  - Public Data
  - Research Data
- Typical Sources of Business Data
  - Marketing data on customers
  - Sales data
  - Customer data
  - Accounting Data
  - Traditional e-commerce sites
  - Social Media
  - Mobile Platforms
- Data Protection Policies
  - Challenges associated with the GDPR
  - Data Protection and Privacy Laws
- Search Engine Optimization
  - Strategies to Increase Popularity and Relevance
- Data Life Cycle Management (DLM)
- Data Analysis Process
- Case Study: Business Decisions in the Non-profit Industry

#### Introduction to Big Data

- Big Data
- The Importance of IT Data Management
- IT Business Environments
- Cloud-Based Data
- Cloud-Native Data
- In-House Data
- When to Migrate In-House Data to the Cloud
- Variations of Cloud-Based Systems
- Typical Databases Used for Data Analysis

- Data-driven Business Decisions
- Case Study: The Internet is Worthless
- Impact of Data Errors
- Importance of Organizational Strategy and Data Quality in Data Analytics
- Data Modeling
- Importance of Data Maintenance and Data Backup

#### Working with Data Sources

- Data E-Harmony: Working with Different Departments to Bring Data Together
- The Purpose of Customer Relationship Management (CRM)
- CRM Integration: A Banking Scenario
  - Need for CRM in a Retail Bank
  - Components of the CRM System
- Obtaining Data from E-Mail and User Forums
- Obtaining Data from Other Knowledge Bases
  - Social Media and CRM
  - Supply Chain Management
  - Inventory Management System
  - Facilities Management System
- Obtaining Data from CRM and Business-To-Business Frameworks
  - Introduction to B2B Frameworks
  - Sources of CRM and B2B Data
- Transaction, Payment and Inventory Data
- Using Multiple Data Sources
- Case Study: InStyle Publishing

#### Tools for Capturing and Analyzing Data

- Data Analytics Tools
- Capturing Data: Tableau Public
- Graphs and Charts in Tableau Public

- Other Types of Graphs
- Types of Calculations
- Capturing Data: Google BigQuery
- Capturing Data: OpenRefine
- Get Started with OpenRefine
- Overview: Hadoop-Based Environments
  - What is Hadoop?
  - Postgres
- Capturing and Analyzing Data in Hadoop
- The R Project
  - R as a Programming Language
  - Explore Datasets and Create Graphical Displays
- Additional Software for Data Capture
  - Gartner's Magic Quadrant
- Case Study: Playing with Big Data

#### Analyzing and Reporting Data

- Network Traffic
  - Web logs
  - Marketing
- Data Integration
  - Why Data Integration is Important?
- Why Testing is Important?
  - ETL Testing
- Statistical Computing and Programming
- Organizational Efforts and Business Outcomes
  - Best Methods to Capture and Report Specific Data
- Data Analysis and Reporting
  - Dashboards
  - Executive Summaries
  - Create Reports and Charts
- Create a Presentation for Reporting Data
- Frequently Asked Questions for Presentations
- Case Study: Better Business Through Data

## Target Audience

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Individuals preparing to enter or continue in the workforce fields of Web site development and design can benefit from the CIW Data Analyst course and/or certification:

- High school students
- College students
- Technical/trade school students

Professionals working in marketing, merchandising, and data-driven fields for any industry can benefit from the CIW Data Analyst course and/or certification:

- Data Analysis professionals
- Product Development professionals
- Merchandising professionals
- Web marketing professionals
- Advertising professionals
- Entrepreneurs

## Job Responsibilities

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Data Analyst job responsibilities can include:

- Use data to analyze all aspects of a company's operation and create appropriate dashboards, reports and solutions.
- Work with typical databases, including Customer Relationship Management (CRM) applications, inventory management systems, transaction data, social media, marketing sources and industry systems.
- Work with cloud-based data, including cloud-native data, migrating data to or from the cloud, backup procedures, security issues, and user training.
- Determine relationships between organizational efforts and business outcomes, extrapolate information using data obtained from new and traditional data sources.
- Use ethics and security to present data to avoid personal or organizational bias.

## Prerequisites

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The CIW Data Analyst courseware requires an understanding of spreadsheets, databases, business processes, web sites and coding. Suggested prerequisites are the *CIW Internet Business Associate*, *CIW Site Development Associate*, *CIW Advanced HTML5 & CSS3 Specialist* course, and *CIW User Interface Designer*, or equivalent knowledge.