

# CIW Data Analyst Objectives and Locations

*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.

Data Analyst Objective	Data Analyst Courseware Lesson(s) and Section(s)
<b>Domain 1: Fundamentals of Data Analysis</b>	
1.1: Describe the importance of obtaining good data, including capturing, using and analyzing institutional knowledge (i.e., tribal knowledge).	<b>Lesson 1: Fundamentals of Data Analysis</b> <ul style="list-style-type: none"> <li>- The Importance of Good Data</li> <li>- Lab 1-1: Learning the data analysis lingo</li> </ul>
1.2: Explain the benefits of centralizing an organization's data in one application (e.g., Salesforce, NetSuite).	<b>Lesson 1: Fundamentals of Data Analysis</b> <ul style="list-style-type: none"> <li>- Centralized Data Benefits</li> </ul>
1.3: Compare and contrast structured and unstructured data.	<b>Lesson 1: Fundamentals of Data Analysis</b> <ul style="list-style-type: none"> <li>- Structured vs. Unstructured Data</li> <li>- Lab 1-2: Exploring structured and unstructured data in the real world</li> </ul>
1.4: Identify typical sources of business data, including mobile platforms, traditional e-commerce sites, social media, sales, accounting, marketing, customers and partners.	<b>Lesson 1: Fundamentals of Data Analysis</b> <ul style="list-style-type: none"> <li>- Typical Sources of Business Data</li> </ul>
1.5: Explain the fundamentals of Search Engine Optimization (SEO), including analyzing for multiple channels (e.g., e-mail, Twitter, Facebook, LinkedIn and offline channels).	<b>Lesson 1: Fundamentals of Data Analysis</b> <ul style="list-style-type: none"> <li>- Search Engine Optimization</li> <li>- Lab 1-3: Metadata and search engine optimization</li> </ul>

Data Analyst Objective	Data Analyst Courseware Lesson(s) and Section(s)
<b>Domain 2: Introduction to Big Data</b>	
2.1: Describe the term big data.	<b>Lesson 2: Introduction to Big Data</b> <ul style="list-style-type: none"> <li>- Big Data</li> <li>- Lab 2-1: The practical application of big data in business today</li> </ul>
2.2: Explain the importance of IT data management, including ethics and security.	<b>Lesson 2: Introduction to Big Data</b> <ul style="list-style-type: none"> <li>- The Importance of IT Data Management</li> <li>- 2-2: Adapting to changing data requirements</li> </ul>
2.3: Describe the various IT business environments and the nature of working with cloud-based data.	<b>Lesson 2: Introduction to Big Data</b> <ul style="list-style-type: none"> <li>- IT Business Environments</li> <li>- Cloud-Based Data</li> </ul>
2.4: Explain how to work with cloud-native data.	<b>Lesson 2: Introduction to Big Data</b> <ul style="list-style-type: none"> <li>- Cloud-Native Data</li> </ul>
2.5: Explain how to work with in-house data.	<b>Lesson 2: Introduction to Big Data</b> <ul style="list-style-type: none"> <li>- In-House Data</li> </ul>
2.6: Determine when it makes sense to migrate in-house data to the cloud and how to do it.	<b>Lesson 2: Introduction to Big Data</b> <ul style="list-style-type: none"> <li>- When to Migrate In-House Data to the Cloud</li> <li>- Variations of Cloud-Based Systems</li> </ul>
2.7: Describe typical databases used for data analysis, including Oracle, MS-SQL, MySQL and Access.	<b>Lesson 2: Introduction to Big Data</b> <ul style="list-style-type: none"> <li>- Typical Databases Used for Data Analysis</li> <li>- Lab 2-3: Compare relational database management systems</li> </ul>
2.8: Given a scenario, analyze data to make business decisions such as building a case for change; exploring, generating, and testing business assumptions; and using historical data to analyze trends.	<b>Lesson 2: Introduction to Big Data</b> <ul style="list-style-type: none"> <li>- Data-driven Business Decisions</li> </ul>
<b>Domain 3: Working with Data Sources</b>	
3.1: Explain how to obtain data by working with various organization departments, including customer service, marketing and sales.	<b>Lesson 3: Working with Data Sources</b> <ul style="list-style-type: none"> <li>- Data E-Harmony: Working with Different Departments to Bring Data Together</li> </ul>
3.2: Describe the purpose of Customer Relationship Management (CRM).	<b>Lesson 3: Working with Data Sources</b> <ul style="list-style-type: none"> <li>- The Purpose of Customer Relationship Management (CRM)</li> <li>- Lab 3-1: Bring that churn rate down</li> </ul>
3.3: Given a scenario, determine how to integrate CRM and customer service.	<b>Lesson 3: Working with Data Sources</b> <ul style="list-style-type: none"> <li>- CRM Integration: A Banking Scenario</li> <li>- Lab 3-2: Consumer lifetime value in banking</li> <li>- Lab 3-3: CRM segmentation</li> </ul>
3.4: Explain how to obtain data from e-mail and user forums.	<b>Lesson 3: Working with Data Sources</b> <ul style="list-style-type: none"> <li>- Obtaining Data from E-Mail and User Forums</li> </ul>

<b>Data Analyst Objective</b>	<b>Data Analyst Courseware Lesson(s) and Section(s)</b>
3.5: Describe how to access and obtain data from knowledge bases, including NetSuite, Facebook, Twitter, LinkedIn, enterprise resource management systems and accounting sources.	<b>Lesson 3: Working with Data Sources</b> - Obtaining Data from Other Knowledge Bases
3.6: Determine how to obtain data from CRM and business-to-business frameworks.	<b>Lesson 3: Working with Data Sources</b> - Obtaining Data from CRM and Business-To-Business Frameworks
3.7: Given a scenario, analyze transaction, payment and inventory data from various data sources.	<b>Lesson 3: Working with Data Sources</b> - Transaction, Payment and Inventory Data
3.8: Given a scenario, make business decisions using multiple data sources.	<b>Lesson 3: Working with Data Sources</b> - Using Multiple Data Sources
<b>Domain 4: Tools for Capturing and Analyzing Data</b>	
4.1: Describe various tools to capture data required for data analysis, including Tableau Public, Google Fusion Tables and OpenRefine.	<b>Lesson 4: Tools for Capturing and Analyzing Data</b> - Capturing Data: Tableau Public - Capturing Data: Google Fusion Tables - Lab 4-1: Familiarizing yourself with Google Fusion Tables - Capturing Data: OpenRefine
4.2: Explain how to capture and analyze data from Hadoop-based environments.	<b>Lesson 4: Tools for Capturing and Analyzing Data</b> - Overview: Hadoop-Based Environments - Capturing and Analyzing Data in Hadoop
4.3: Describe how the R Project enables data analysts to statistically explore data sets and create graphical displays.	<b>Lesson 4: Tools for Capturing and Analyzing Data</b> - The R Project - Lab 4-2: Introduction to the R programming language and RStudio
4.4: Describe additional software for data capture and analysis, including Rapid Miner and KNIME.	<b>Lesson 4: Tools for Capturing and Analyzing Data</b> - Additional Software for Data Capture - Lab 4-3: Working with KNIME
<b>Domain 5: Analyzing and Reporting Data</b>	
5.1: Analyze network traffic from typical sources, such as Web logs, marketing, technical support, customer relations and sales.	<b>Lesson 5: Analyzing and Reporting Data</b> - Network Traffic - Lab 5-1: Applying Google Analytic attributes
5.2: Given a scenario, determine relationships between organizational efforts and business outcomes, such as the progress of efforts against business goals.	<b>Lesson 5: Analyzing and Reporting Data</b> - Organizational Efforts and Business Outcomes
5.3: Given a scenario, identify the best methods to capture and report specific data.	<b>Lesson 5: Analyzing and Reporting Data</b> - Best Methods to Capture and Report Specific Data
5.4: Create a dashboard for data analysis and reporting, including executive summaries.	<b>Lesson 5: Analyzing and Reporting Data</b> - Data Analysis and Reporting Dashboards - Lab 5-2: Exploring dashboards

<b>Data Analyst Objective</b>	<b>Data Analyst Courseware Lesson(s) and Section(s)</b>
5.5: Create reports and charts for reporting data using office tools, including word processors, spreadsheets, databases, Web-based software.	<b>Lesson 5: Analyzing and Reporting Data</b> <ul style="list-style-type: none"> <li>- Create Reports and Charts</li> <li>- Lab 5-3: Creating a Gantt chart</li> </ul>
5.6: Create presentations for reporting data using tools such as PowerPoint and Webcasts.	<b>Lesson 5: Analyzing and Reporting Data</b> <ul style="list-style-type: none"> <li>- Create a Presentation for Reporting Data</li> <li>- Lab 5-4: Creating a presentation</li> <li>- Lab 5-5: The Prezi alternative</li> </ul>
5.7: Create a list of Frequently Asked Questions (FAQ) to accompany a presentation.	<b>Lesson 5: Analyzing and Reporting Data</b> <ul style="list-style-type: none"> <li>- Frequently Asked Questions for Presentations</li> </ul>
5.8: Explain the need for ethics in presenting data to avoid personal or organizational bias.	<b>Lesson 5: Analyzing and Reporting Data</b> <ul style="list-style-type: none"> <li>- Best Methods to Capture and Report Specific Data</li> <li>- Create a Presentation for Reporting Data</li> </ul>
5.9: Describe how ethics are a vital part of the Data Analyst responsibilities.	<b>Lesson 5: Analyzing and Reporting Data</b> <ul style="list-style-type: none"> <li>- Network Traffic</li> </ul>