

Course 4 resources and citations

Module 1: Introduction to the power of storytelling: How to visualize data in the cloud

Resources

Helpful resources and tips

- [Common problems with labs/lab troubleshooting](#)
- [Google Docs Help Center](#)
- [Google Sheets Help Center](#)
- [How to use Google Slides](#)

Why visualization matters

- [Information is beautiful](#)
- [Making events accessible](#)
- [Why data visualization is important](#)
- [Why is data visualization important? What is important in data visualization?](#)

Foundational concepts of design: Structure and aesthetics

- [Color choices in data visualizations: Importance and how to](#)
- [Visual hierarchy, Gutenberg diagram, F & Z pattern](#)

Foundational concepts of design: Usability and accessibility

- [Accessible data visualizations](#)
- [Data visualizations, charts, and graphs](#)

Citations

Why visualization matters

- Countants. (2019, October 3). [7 key principles of effective data visualization](#). *GoBeyond.AI: E-Commerce Magazine*.
- Google Cloud. (2023, October 3). [Selecting an effective data visualization](#).
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Ways that cloud data enhances storytelling

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Planning phases of the data visualization workflow

- George Mason University. (2023, November 6). [Data visualization: Planning a visualization](#).
- Google. (2018). [Google Data Studio](#).
- Knafllic, C. N. (2015, November 4). [Storytelling with data](#) [Video]. YouTube.

Dashboard design for effective communication

- Bakusevych, T. (2018, July 17). [10 rules for better dashboard design](#). *Medium*.
- Mokkup.ai. (2023, September 14). [8 essential dashboard design principles for effective data visualization](#). *Medium*.

The importance of UX/UI design

- Factor, S. (2008, April 23). [What makes a design "Googley"?](#) *Google Official Blog*.
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- Pinto, R. (2018, August). [4 simple steps to designing a strong user experience](#). Think with Google.

Design decisions for data visualizations

- Gangadharan, P. (2019, May 21). [The importance of user experience design](#). Medium.

Foundational concepts of design: Structure and aesthetics

- Design, Y. (2019, May 16). [Visual hierarchy, Gutenberg diagram, F & Z pattern](#). Medium.
- London Image Institute. (2020, February 5). [Color psychology: How do colors affect mood & emotions?](#)

Foundational concepts of design: Usability and accessibility

- Chowty, A. (2018, April 29). [What are web content accessibility guidelines?](#) Medium.

Additional design concepts to consider

- Mir, H. (2023, August 17). [Best practices to elevate user-centric dashboard design](#). LinkedIn.

Design principles and strategies for dashboards

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- Mir, H. (2023, August 17). [Best practices to elevate user-centric dashboard design](#). LinkedIn.
- Mokkup.ai. (2023, September 14). [8 essential dashboard design principles for effective data visualization](#). Medium.

Module 2: Methods for visualization planning and design

Resources

Visualization techniques for different data types

- [Data visualization resources: Types of charts and graphs for data viz](#)
- [How to choose the best chart or graph for your data](#)

Choose an effective visualization

- [Explore new ways to visualize your data](#)

[Supplemental] Tips for effective teamwork

- [Teams start with human connections](#)

The importance of the user journey

- [Web Content Accessibility guidelines](#)

Citations

Data types to consider for visualizations

- Dijk, E. van. (2015, October 6). [Which chart type works best for your data?](#) *Medium*.
- Google Docs Editors Help. (n.d.). [Histogram charts](#). Retrieved January 4, 2024.
- Mimi. (2020, February 10). [Data-heavy applications: How to design perfect charts](#). *Medium*.
- PennState Eberly College of Science. (n.d.). [1. 1. 1—Categorical & quantitative variables](#). STAT 200 | Elementary Statistics.
- Temple University. (2023, September 15). [Data visualization resources: Types of charts and graphs for data viz](#).

The importance of data type identification

- Looker Studio Help. (n.d.). [Data types](#). Google. Retrieved October 12, 2023.
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Choose an effective visualization

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- Zubair, M. (2023, May 9). [From real-time to strategic: Understanding the different types of dashboards](#). LinkedIn.

4 types of business intelligence dashboards

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Benefits of scorecards

- Corkins, G. (2013, July 22). [The balanced scorecard, strategy maps and dashboards: Why are they different?](#) *FM Magazine*.
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SMART questions for stakeholders

- Chang, J. (2022, March 3). [Using the SMART framework to ask the effective questions](#). *Medium*.
- Gautam, A. (2021, September 6). [Methodology for crafting effective questions for data analysis](#). *CodeX*.
- Kautsar, E. M. (2021, March 30). [Highly effective questions are SMART questions](#). *Medium*.

Strategies for translating stakeholder requests

- Haidermota, M. (2023, November 15). [Stakeholder communication in analytics—It matters!](#) *Medium*.
- Ogunkoya, O. (2023, December 6). [Translating and managing stakeholder needs in business analysis](#). *Linkedin*.

Introduction to wireframes for stakeholder alignment

- Bahmani, H. (2023, September 19). [5 ways to build a better dashboard wireframe](#). *Built In*.
- Interaction Design Foundation. (2016, September 25). [What is Wireframing?](#)

Module 3: Access, explore, and report on data in the cloud

Resources

Cloud-based tools for accessing and visualizing data

- [Looker for business intelligence](#)
- [Looker Studio](#)

Actionable insights through data exploration

- [Unlock the power of data analytics with Looker: Rethinking business intelligence](#)

Customize dimensions and measures in Looker Studio

- [About the "How to" guide](#)

Case study: Benefits of using data reports

- [11 data visualization techniques for every use-case with examples](#)
- [17 data visualization techniques all professionals should know](#)
- [Power BI dashboards vs reports: A comprehensive guide](#)

Citations

The data journey: Analyze and activate

- Gautam, A. (2021, September 5). [6 phases of data analysis according to Google](#). CodeX.
- LinkedIn. (2023, August 17). [What are the benefits of using cloud data analytics and visualization tools?](#)
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Considerations for connecting to cloud data

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The importance of data exploration

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- Vergadia, P., & Lin, P. (2022, February 1). [Intro to data science on Google Cloud](#). Google Cloud Blog.

Actionable insights through data exploration

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Dimensions and measures in data models

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Customize dimensions and measures in Looker Studio

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Basics of modeling data

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Aggregate and filter to summarize data

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Data blending for helpful insights

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Introduction to data reports

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Guide to Looker Studio

- Looker Studio Help. (n.d.). [Add data to a report](#). Retrieved January 4, 2024.
- Looker Studio Help. (n.d.). [Quick start guide](#). Retrieved January 4, 2024.

Module 4: Enterprise business analytics

Resources

Data governance for safeguarding data

- [Best practices In data governance](#)
- [What is data governance?](#)

Insights from a single dataset

- [What is exploratory data analysis?](#)

Guide to Looker Enterprise

- [Create and edit dashboards and reports](#)
- [How Looker generates SQL](#)
- [Looker introduction](#)

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Introduction to enterprise-grade visualization tools

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Data governance for safeguarding data

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- Steer, D. (2021, September 8). [Best practices in data governance](#). *Forbes*.

Comparison of self-service and guided analytics

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The process of filtering data

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Live dashboard features

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Guide to Looker Enterprise

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The changing role of a cloud data analyst

- Stobierski, T. (2021, February 23). [Data literacy: An introduction for business](#). *Business Insights Blog*.

Module 5: Explore the developer environment

Resources

Guide to LookML

- [Introduction to LookML](#)
- [LookML data tests: Recommendations and best practices](#)
- [LookML terms and concepts](#)
- [Types of files in a LookML project](#)
- [Using version control and deploying](#)

Explore a dashboard file's LookML code

- [Dashboard element list](#)
- [LookML dashboard parameters](#)

Interview tip: End responses with positive takeaways

- [Interview Warmup](#)

Citations

Bring data tools together with an IDE

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- Looker. (2020, December 8). [Looker IDE: A modern development workflow](#) [Video]. YouTube.

The elements of LookML

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The benefits of using version control

- Google Cloud. (2023, September 11). [Setting up and testing a Git connection](#).
- Harvard Medical School. (n.d.). [Version control](#). Longwood Research Data Management.

Introduction to data modeling languages

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Define dimensions and measure with LookML

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- Google Cloud. (2024, January 9). [Scheduling and sending dashboards.](#)

Discover dashboards as code

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Explore a dashboard file's LookML code

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Derived tables for complex data problems

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Improve performance with caching

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