

Tableau and Accessibility

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Today's Goals

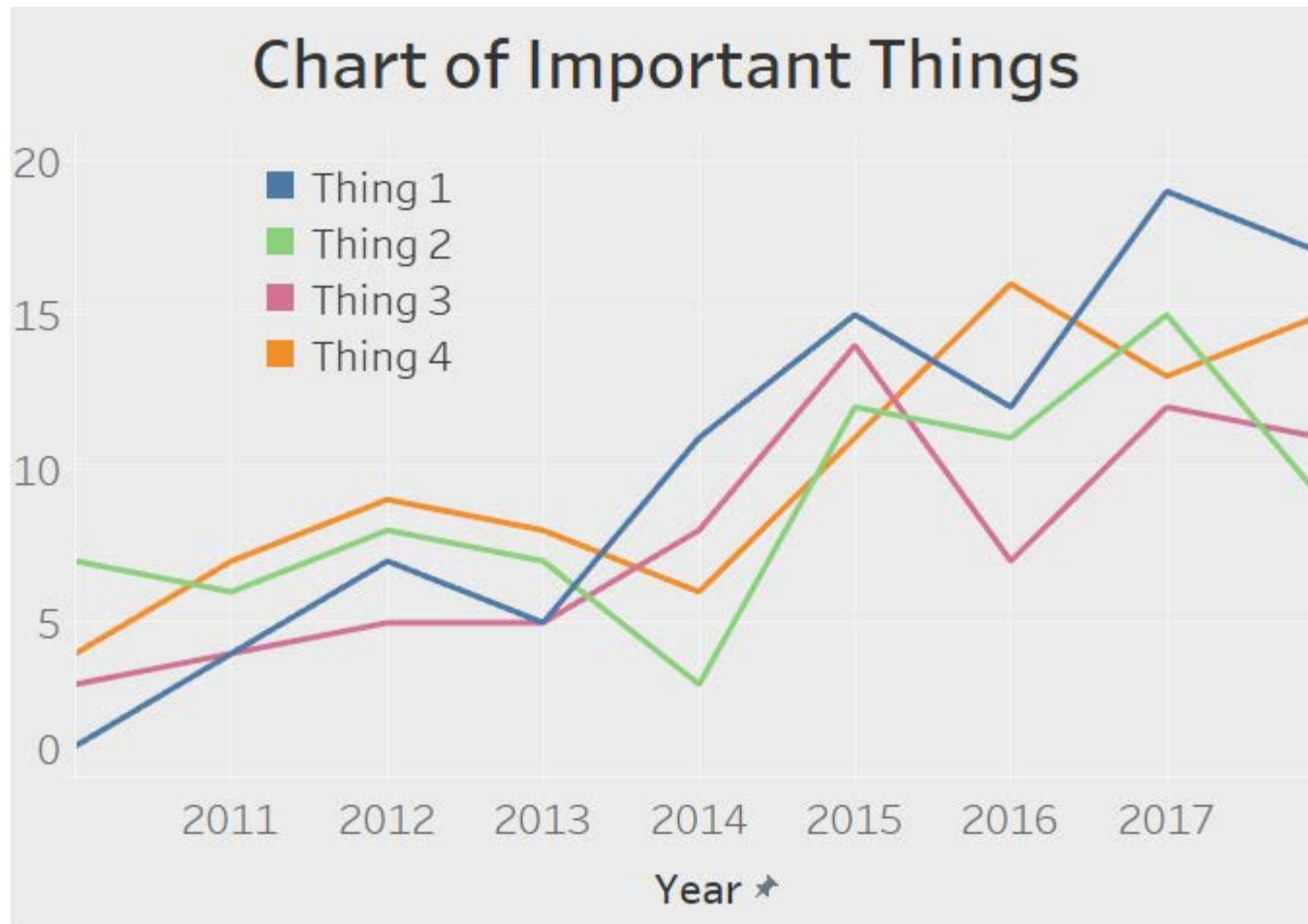
- Discuss the challenges of creating Tableau dashboards that are web accessible
- Explore web accessible functions and design approaches
- Provide resources for further learning

Tableau and Accessibility

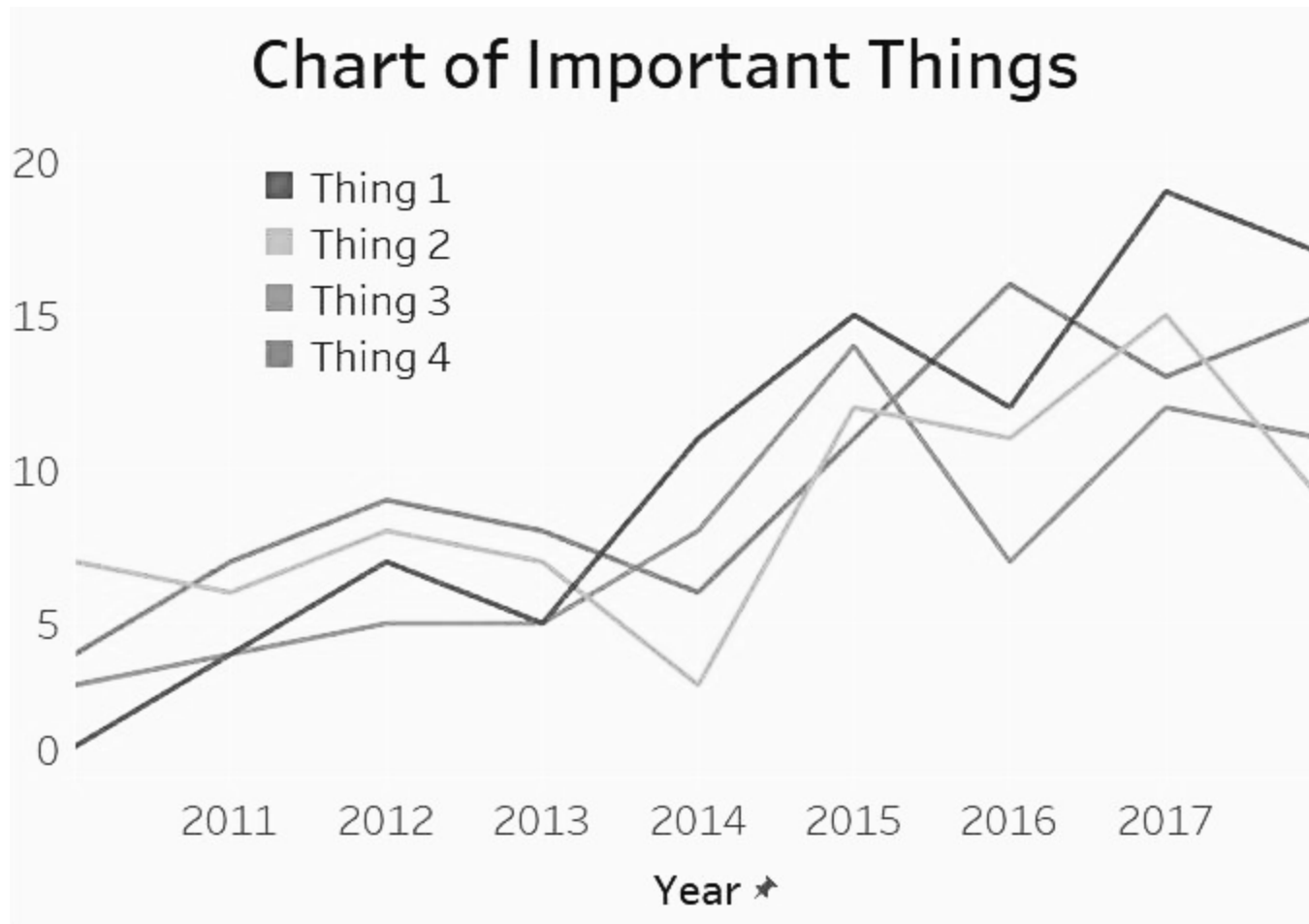
Tableau is designed to help people see and understand data.

Challenge: People perceive and interact with the world in a variety of ways.

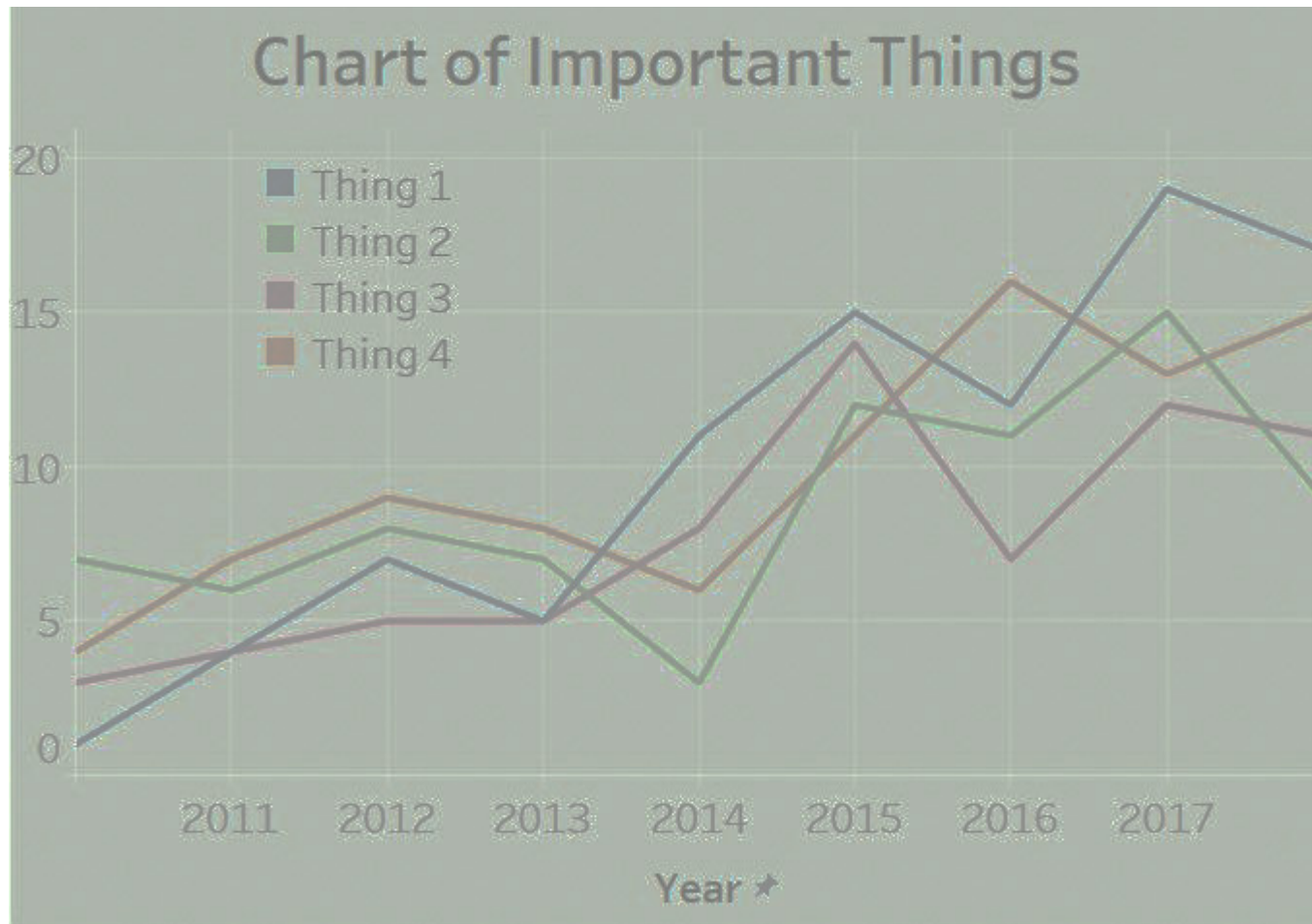
Tableau and Accessibility



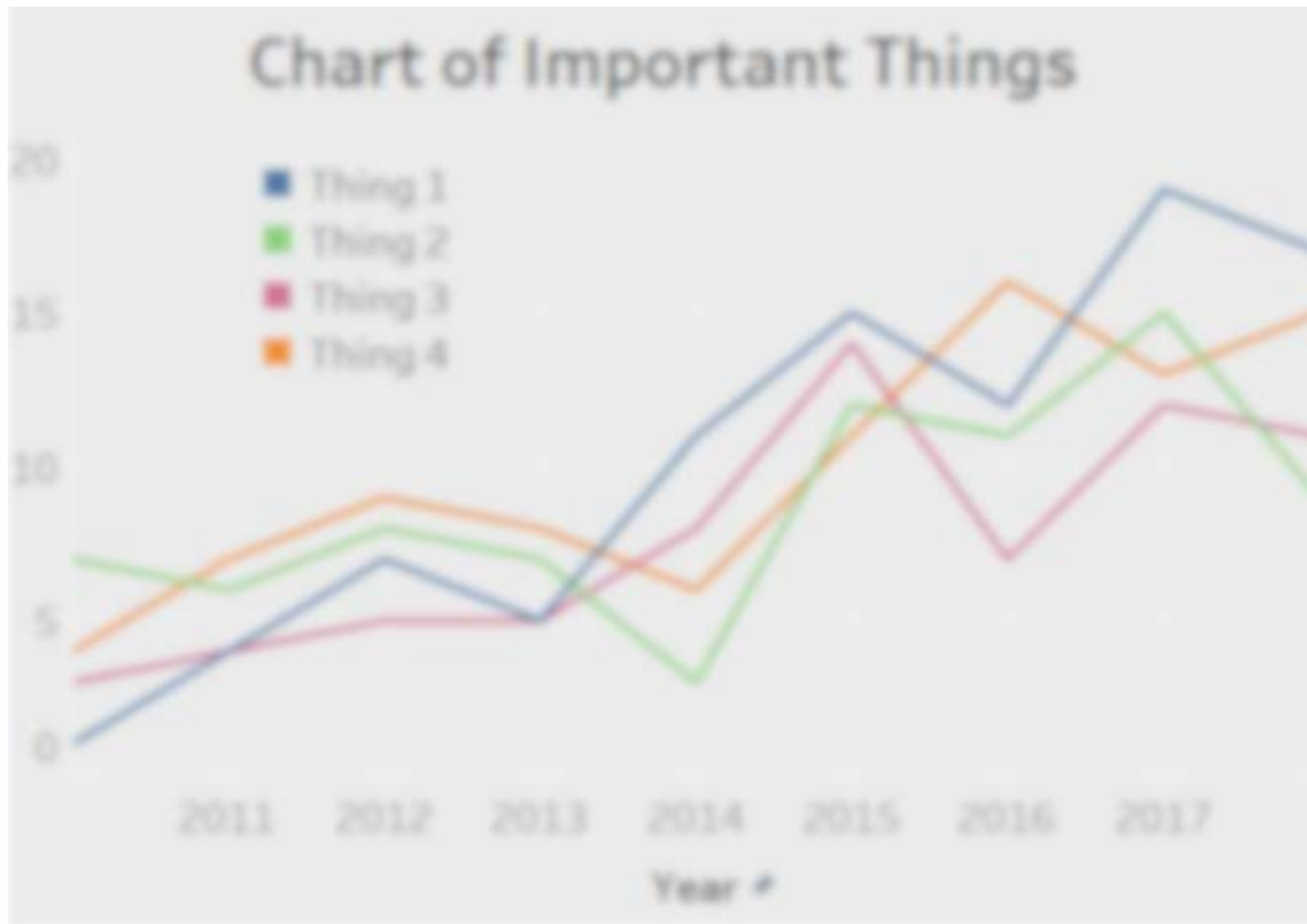
No Color Vision



Contrast Sensitivity Loss



Low Vision



No Vision

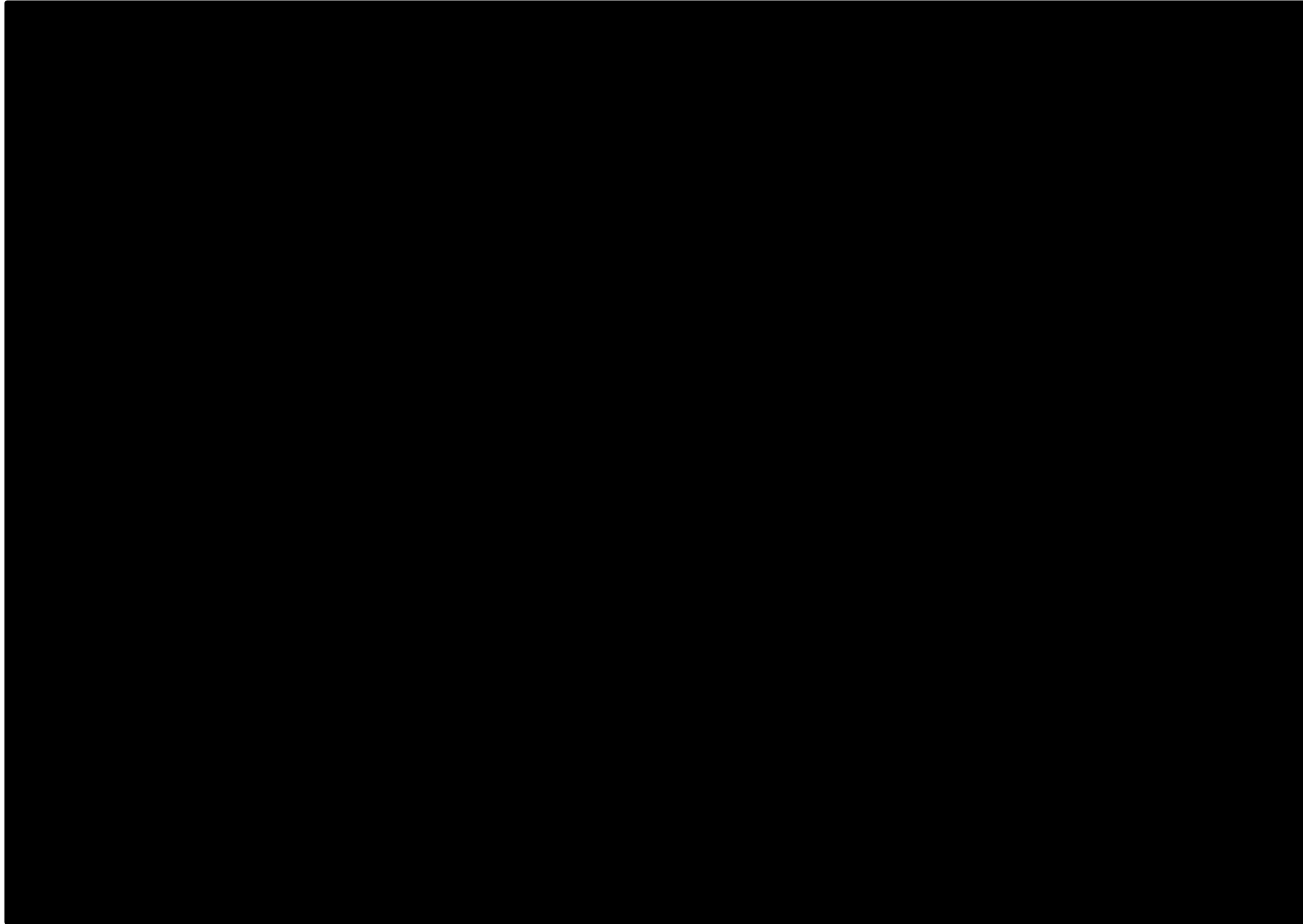
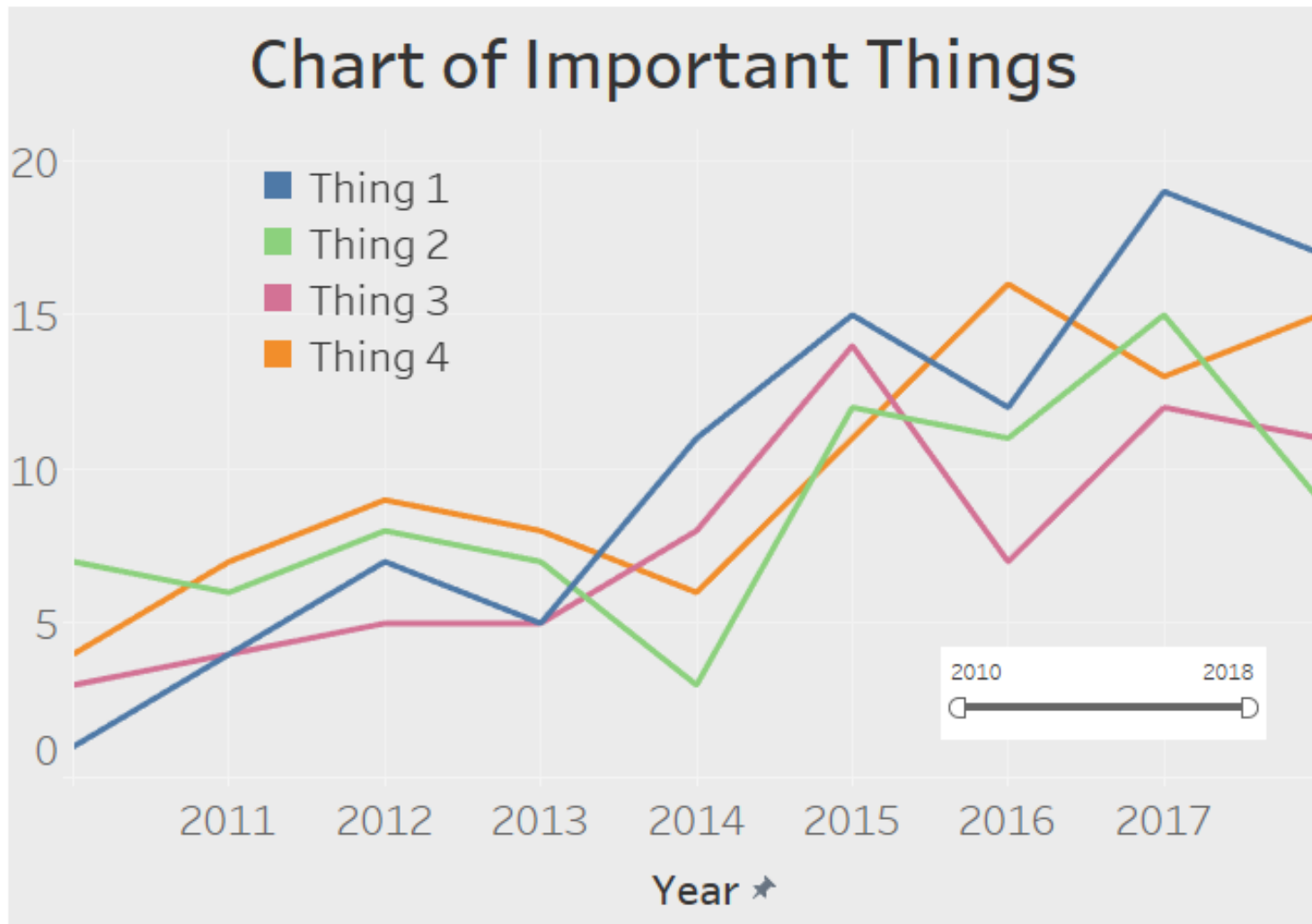


Tableau and Accessibility



Web Content Accessibility Guidelines (WCAG)

Four principles for web accessibility:

- Perceivable
- Operable
- Understandable
- Robust

World Wide Web Consortium (W3C)

Web Accessibility Initiative (WAI)

<https://www.w3.org/WAI/>

Perceivable

- Create textual equivalents for all non-text content.
- Make sure color is not the only way to identify information.
- Use text and images that have sufficient contrast against the background.

Operable

- The dashboard should be operable with the keyboard.
- Visualizations, filters, and legends should have titles that help users know what the item is and how to use it.
- Focus order preserves meaning and operability.

Understandable

- Make text readable.
- Make the dashboard operate in predictable ways.
- Provide instructions on interacting with the dashboard.
- Use descriptive text to explain the information displayed in the dashboard.

Robust

- Dashboard content can be interpreted by a variety of user agents, including assistive technologies.

What does this look like in practice?

Demo time

https://tableau.cornell.edu/t/IRP/views/AccessibilityDemo/BadExample?iframeSizedToWindow=true&:embed=y&:showAppBanner=false&:display_count=no&:showVizHome=no

General Observations

- Approaches that improve accessibility are also generally good practices for creating effective dashboards.
- Keep it simple.
- Make liberal use of descriptive text.
- Use color thoughtfully.

Tips

- Think about accessibility from the start
- Design should emphasize the most important data points or elements
- Use descriptive text in titles and captions
- Explain how the dashboard and its elements work

More Tips

- Test with contrast analyzer tools and screen readers
- Color alone is not sufficient
- Allow users to download crosstabs
- Use consistent names
- Set the focus order

Resources: Accessibility Guidelines

The screenshot shows the W3C WAI website. The top navigation bar includes the W3C logo, the text 'Web Accessibility Initiative WAI', the tagline 'Strategies, standards, resources to make the Web accessible to people with disabilities', and links for 'Get Involved' and 'About W3C WAI'. A search box is located on the right. Below the navigation bar is a horizontal menu with categories: 'Accessibility Fundamentals', 'Planning & Policies', 'Design & Develop', 'Test & Evaluate', 'Teach & Advocate', and 'Standards/Guidelines'. The main content area has a breadcrumb trail: 'Home / Standards/Guidelines / Web Content - WCAG'. On the left is a dark blue sidebar with a 'Standards/Guidelines' header and a list of menu items: 'Standards Overview', 'Web Content - WCAG' (highlighted), 'How to Meet WCAG 2 (Quick Reference)', 'At a Glance', 'The Documents', 'New in 2.1', 'Translations', 'Applying to Non-Web ICT', 'Commenting', 'Conformance Logos', 'FAQ', and 'Authoring Tools - ATAG'. The main content area features the title 'Web Content Accessibility Guidelines (WCAG) Overview'. Below the title is a 'Summary' section with the text: 'This page introduces the Web Content Accessibility Guidelines (WCAG), including WCAG 2.0 and WCAG 2.1.' followed by 'Quick links to resources:' and a bulleted list of links: 'How to Meet WCAG 2 (Quick Reference)', 'WCAG 2.0 Standard', and 'WCAG 2.1 Standard'. Below that is a 'Page Contents' section with a bulleted list of links: 'Introduction', 'WCAG 2.0 and 2.1', 'Who WCAG is for', 'What is in the WCAG 2 Documents', 'WCAG 2.0 is ISO/IEC 40500', 'Other guidelines', 'Who develops WCAG', and 'More Information'.

W3C® Web Accessibility Initiative WAI | Strategies, standards, resources to make the Web accessible to people with disabilities | Get Involved | About W3C WAI | Search

[Accessibility Fundamentals](#) | [Planning & Policies](#) | [Design & Develop](#) | [Test & Evaluate](#) | [Teach & Advocate](#) | [Standards/Guidelines](#)

[Home](#) / [Standards/Guidelines](#) / [Web Content - WCAG](#)

Standards/ Guidelines

- Standards Overview
- Web Content - WCAG**
- How to Meet WCAG 2 (Quick Reference)
- At a Glance
- The Documents
- New in 2.1
- Translations
- Applying to Non-Web ICT
- Commenting
- Conformance Logos
- FAQ
- Authoring Tools - ATAG

Web Content Accessibility Guidelines (WCAG) Overview

Summary

This page introduces the Web Content Accessibility Guidelines (WCAG), including WCAG 2.0 and WCAG 2.1.

Quick links to resources:

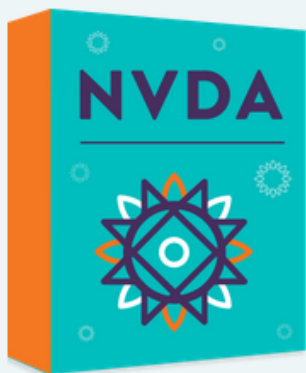
- [How to Meet WCAG 2 \(Quick Reference\)](#)
- [WCAG 2.0 Standard](#)
- [WCAG 2.1 Standard](#)

Page Contents

- [Introduction](#)
- [WCAG 2.0 and 2.1](#)
- [Who WCAG is for](#)
- [What is in the WCAG 2 Documents](#)
- [WCAG 2.0 is ISO/IEC 40500](#)
- [Other guidelines](#)
- [Who develops WCAG](#)
- [More Information](#)

<https://www.w3.org/WAI/standards-guidelines/wcag/>

Resources: Screen Reader



NVDA VERSION 2018.4

The NVDA screen reader can be downloaded free of charge by anyone. We do this because we believe everyone, especially the world's poorest blind people deserve access to computers and a way out of poverty. If you have the means, no matter how big or small, please consider making a donation before downloading NVDA. We rely on donations and grants to continue improving NVDA and to ensure it remains compatible with the world's rapidly changing technology.

<https://www.nvaccess.org/download/>

Resources: Keyboard Navigation

Keyboard access for embedded views

Version: 2018.3 Applies to: Tableau Desktop

Embedded views that are WCAG-conformant use commonly supported WAI-ARIA standards for keyboard navigation.

In this article

[Keystrokes for navigating embedded Tableau views](#)

[Example: Navigate an embedded view](#)

Keystrokes for navigating embedded Tableau views

Component

Keystrokes

https://onlinehelp.tableau.com/current/pro/desktop/en-us/access_keyboard_navigation.htm

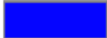
Resources: Color Contrast

Color Contrast Checker


[Home](#) > [Resources](#) > Color Contrast Checker

Foreground Color

#0505FF




Lightness




Background Color

#FFFFFF



Lightness



Contrast Ratio

8.49:1

[permalink](#)

Normal Text

WCAG AA: **Pass**

WCAG AAA: **Pass**

The five boxing wizards jump quickly.

Large Text

WCAG AA: **Pass**

WCAG AAA: **Pass**

The five boxing wizards jump quickly.

Graphical Objects and User Interface Components

WCAG AA: **Pass**

✓
Text Input

<https://webaim.org/resources/contrastchecker/>

Resources: Color Contrast

Colour Contrast Analyser

The Colour Contrast Analyser (CCA) helps you determine the legibility of text and the contrast of visual elements, such as graphical controls and visual indicators.

Features

- [WCAG 2.1](#) compliance indicators
- Several ways to set colours: raw text entry (accepts any valid CSS colour format), RGB sliders, colour picker (Windows and macOS only)
- Support for alpha transparency on foreground colours
- Colour blindness simulator

Support and development

For questions concerning the Colour Contrast Analyser (CCA), or to report bugs, suggest improvements, and contribute to the code, see the [Colour Contrast Analyser \(CCA\)](#) repository.



Download for Windows / macOS
Colour Contrast Analyser (latest release)

<https://developer.paciellogroup.com/resources/contrastanalyser/>

Resources: Tableau DataTables Extension

Tableau DataTables Extension

The Tableau DataTables Extension was built for several purposes:

- To aide in my understanding of this wonderful new Tableau functionality.
- To leverage the widely used DataTables.net libraries in Tableau dashboards.
- To provide an open source example for others to look at, learn from, and improve upon.

Install Guide

- Install Node.js and NPM
- Install Yarn
- Install Git

<https://github.com/tableaumagic/tableau-datatables-extension>

Resources: Natural Language Generation Tools



PRODUCTS

RESOURCES

PARTNERS

ABOUT

Wordsmith for Tableau

Generate written analytics, using natural language generation, right beside your Tableau visualizations. It's like having your own data analyst navigating you through your dashboards.

<https://automatedinsights.com/partners/tableau/>

Resources: Natural Language Generation Tools

Tableau Extension

Your dashboards explained in words - instantly

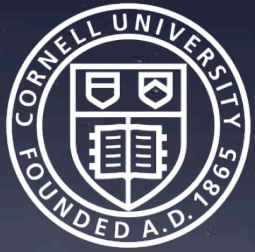
Narratives for Tableau instantly delivers written insights alongside Tableau charts and graphs. The stories adjust as analysts explore the data, empowering them to identify and communicate key insights faster.

See it in action

<https://narrativescience.com/products/quill/extensions/tableau/>

There are still challenges

- It's not possible to have a color palette in which any color overlaying any other color would have sufficient contrast (4.5:1).
- Map views in Tableau are not currently supported for WCAG conformance.
- Single Value (slider) and Multiple Values (custom list) filters are not accessible.



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