

# Interactive Visualization with R

## Online course learning objectives

This course teaches the techniques and tools for presenting data in visually attractive and interactive ways using the R programming language. This course is perfect for social scientists who are looking to use and develop their existing R skills to communicate their research in a new and engaging way.

### This course will help learners to:

- Understand the need for interactive visualizations and reports, and the associated workflows.
- Produce a range of visualizations relevant to the available data.
- Produce and publish a report that contains appropriate interactive visualizations to tell a story about the data.

**Language:** English

**Time to complete:** 40 hours

**Instructors:** Charlie Joey Hadley and Professor Richard Traummüller

## Online course full syllabus

### MODULE ONE: TOOLKIT

This module gives an overview of interactive visualization and explains how to set up the various toolkits you'll be using throughout the course.

### MODULE TWO: GETTING READY

In this module, you'll learn about: a typical visualization workflow, how to plan a story, how to prepare your data to build visual stories and a simple example of a workflow.

- Typical workflow for interactive visualizations and reports - overview of the workflow for putting together an interactive visualization and report.
- Planning a story - what needs to be considered when planning visualizations and reports.
- Getting data ready - coverage of defined tidyverse packages to get data ready for visualization, along with a simple exercise.
- A simple example of a workflow - preparing data using tidyverse and producing a simple bar chart with plotly.

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## MODULE THREE: INTERACTIVE CHARTS AND MAPS

In this module you'll learn how to produce: charts with plotly and highcharter, an interactive map with leaflet and plotly and a network chart using tibbles and visNetwork.

- Producing charts with plotly - more in-depth look at using htmlwidget plotly to make a chart.
- Producing charts with highcharter - making a chart with highcharter and comparison to plotly.
- Making an interactive map with leaflet and plotly - creating a map with interactive markers.
- Producing a network chart - Creating a network chart using tibbles and visNetwork.

## MODULE FOUR: SHINY BASICS AND R MARKDOWN

In this module, you'll learn how to insert interactive charts and add controls and reactive events into a Shiny app; how to create an interactive presentation using R Markdown in RStudio; and how to publish these toolkits to the web.

- Charts in shiny - outputting htmlwidget charts in shiny.
- Controls and UI - Adding and configuring controls.
- Reactivity and publishing - controlling when variables update, and publishing your app.
- Creating an RMarkdown document - creating the right type of document for your report.
- Adding charts and code - adding charts, code chunks and shiny apps.
- Publishing - publishing Rmarkdown documents.