

**Building R Web Applications with Shiny**

**Course Number:** RPROG-104  
**Duration:** 2 days

**Overview**

Accelebrate's Building R Web Applications with Shiny course teaches attendees how to convert their R-based data analytics programs into responsive, interactive web applications.

**Prerequisites**

A basic knowledge of R is required, including an understanding of the role of objects in R, indexing, and calling and writing functions.

**Materials**

All attendees receive comprehensive courseware and a textbook.

**Software Needed on Each Student PC**

* A recent release of R 4.x
* IDE or text editor of your choice (RStudio recommended)

**Objectives**

* Quickly review R fundamentals
* Tour the directory structure of Shiny applications and learn how the components of a Shiny application interrelate
* Use Shiny widgets
* Layout their applications in a way that is responsive (i.e., viewable across multiple device types and resolutions)
* Work with Shiny extensions
* Deploy Shiny applications

**Outline**

* A Brief R Overview
  + Working With Data
  + Creating Numerical and Graphical Summaries
  + Writing Functions in R
* What is Shiny?
  + A Simple App that We Will Build on Day 1
  + A Fancy App that We Will Build on Day 2
* The Shiny App Directory
  + ui.R
  + shiny.R
  + global.R
  + R and shinyServer
  + The www Directory
  + runApp
  + Other Local Launching Methods
* Widgets and the Input List Elements They Create
  + Examples
  + verbatimTextOutput
* Input List Elements and Their Role in shinyServer
* Output List Elements and Their Role in shinyUI
* Application Development Exercises
* Application Layout
  + sidebar
  + The Bootstrap 12-Wide Grid System
  + tabsets, navlist, and navbarPage
  + Application Themes
* Showcase Mode and the DESCRIPTION File
* The Reactive Dependency Chain
* Application Development Exercises
* Shiny Extensions
  + DataTables
  + dygraphs
  + shinyRGL
* Sharing Your App With Others
  + Setting up an AWS Server and Launching Via Shiny Server
  + Launching Via shinyapps.io
* Conclusion