

# Designing Responsive Dashboards

**Best Practices for Building Responsive  
Analytic Applications**



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# Responsive Design and Embedded Analytics

Perhaps no single trend in recent years has impacted the way people conduct their lives more than the rise of mobile devices and multi-device usage. According to a recent study by Google, 57 percent of all users now leverage more than one type of device on an average day. This is only expected to grow in the years to come.

The trend towards multiple devices and mobile screens affects every software company and application team. For the developers and product managers who are creating embedded dashboards and reports in their applications, it's introduced a whole new set of challenges—both in terms of dashboard design and in developing scalable dashboards for a variety of screen sizes.

Many developers have turned to responsive design as a relatively easy, scalable way to tailor analytics experiences to device types. By building embedded analytics on a platform that supports responsive design, for instance, developers can ensure their applications will automatically modify content in response to the user's screen size.

But being responsive means more than making sure your dashboards look good. It means designing dashboards from the ground up with responsive in mind—making sure they deliver information in easy-to-consume ways across every device.

Read on to learn the tried-and-true principles of responsive design, plus how to use tools like CSS frameworks and device emulators to take your application to the next level.





# 6 Principles and Best Practices

Dashboard design can mean the difference between customers embracing your application or ignoring it altogether. And it's no secret that visually appealing, easy-to-understand dashboards are crucial in mobile environments.

Developers—not designers or UI/UX experts—are usually the ones tasked with creating these mobile dashboards and reports. Fortunately, it doesn't take an expert designer to create effective analytic applications.

Keep these points in mind when designing responsive dashboards and reports for your application:



## 1 Responsive is Not a Given

Yes, responsive design is critically important in today's mobile-first world—but that doesn't mean it's right for every scenario. Some applications simply aren't conducive to mobile use and should be confined to desktops and other single-location environments.

In other cases, many of your application's features may be great for mobile, but some may not be useful on a mobile device. **Spending resources making those features responsive is a poor use of time and money.** Before you design your responsive dashboards, make sure every element and the application as a whole is delivering clear value to the user.



## 2 Prioritize Content

Obviously, mobile devices offer less space for content than larger computer screens. So it's crucial to prioritize the content that is most important to your end users. The question, then, is: **How do you know what's important and what can be treated as secondary?**

Often the simplest way is most effective: Just ask! Conduct user focus groups with key stakeholders and ask what information they need to see to maximize value from the application.

**Take the quiz to better understand your BI users >**

### 3 Design Small, Then Go Big

Once you have a list of your users' must-have content, it's time to start designing your responsive analytics. If you have some existing desktop dashboards, you should start with those as the basis, right?

Not quite. You're better off starting from scratch and designing for the smallest screen first. In most cases, this will be a smartphone.

Starting on a small screen forces you to prioritize content, choosing only what is most important, rather than paring down content from a robust desktop app with seemingly unlimited screen space. This method also allows you to add more content and features as the screens get larger, rather than removing elements as you go smaller.

**"Using responsive design techniques allows you to bring maximum value to users trying to access applications in a mobile environment."**



## 4 Hide Everything That's Unneeded

Hiding content is also a neat trick. You don't have to display an entire content block with all its text. Instead, you can input a clickable icon that pops up the full text when pressed. To hide content, utilize pop-up windows and sliding trays. This has the added bonus of speeding up load times—and as any developer knows, poor performance is a killer for application engagement.

"Consider a data grid that has 100 columns," explains Joshua McClure, Solutions Engineer and Web Developer at insightsoftware. "You might not want to serve that to a mobile audience. Maybe you want to give that audience a small snippet, just the important information in a mobile context. Using responsive design techniques allows you to bring maximum value to users trying to access applications in a mobile environment."

Get more design tips and tricks in the ebook

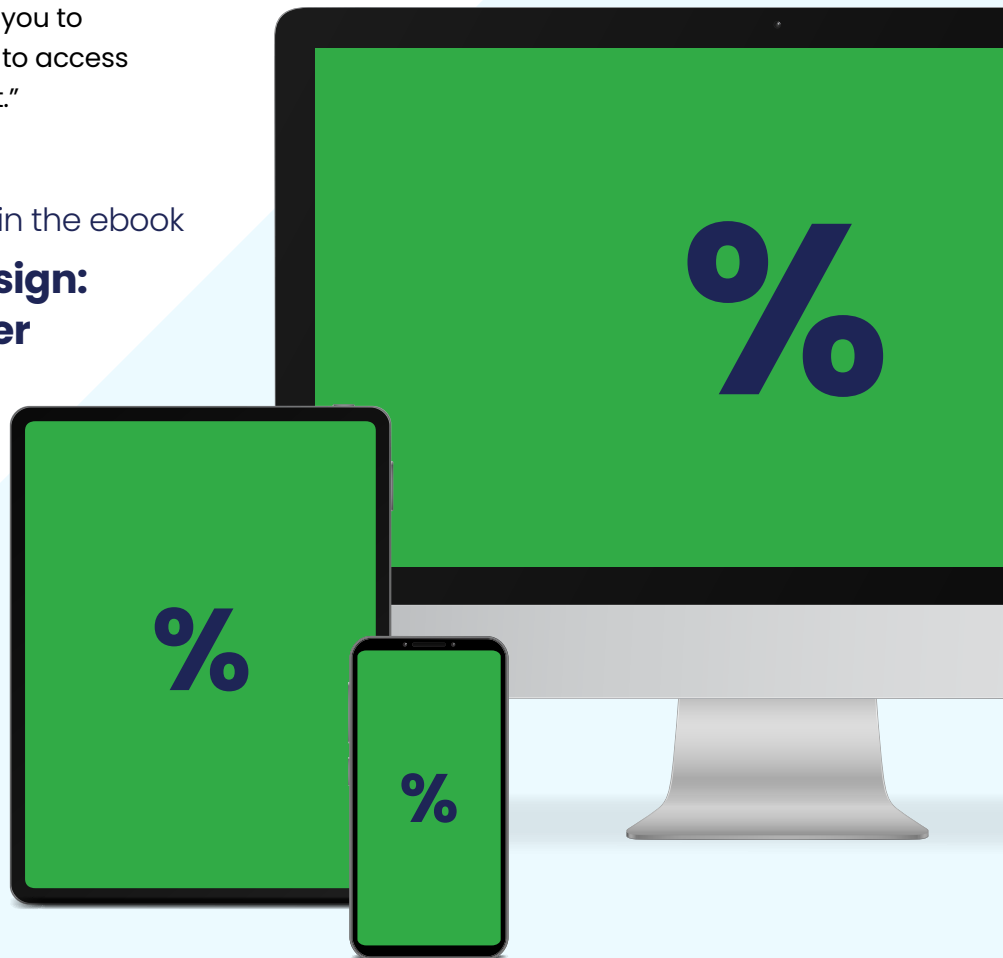
### **The Art of Dashboard Design: 7 Fundamentals to Master**

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## 5 Everything Is Relative

Relative measurement is extremely effective in simplifying CSS for responsive design. In the past, elements such as font size were typically measured in pixels. But 12 pixels render very differently on a smartphone than on a tablet or laptop. That's why relative measurement is a developer's best friend.

Rather than using fixed values like pixels, use percentages to allow elements to scale automatically based on device size.



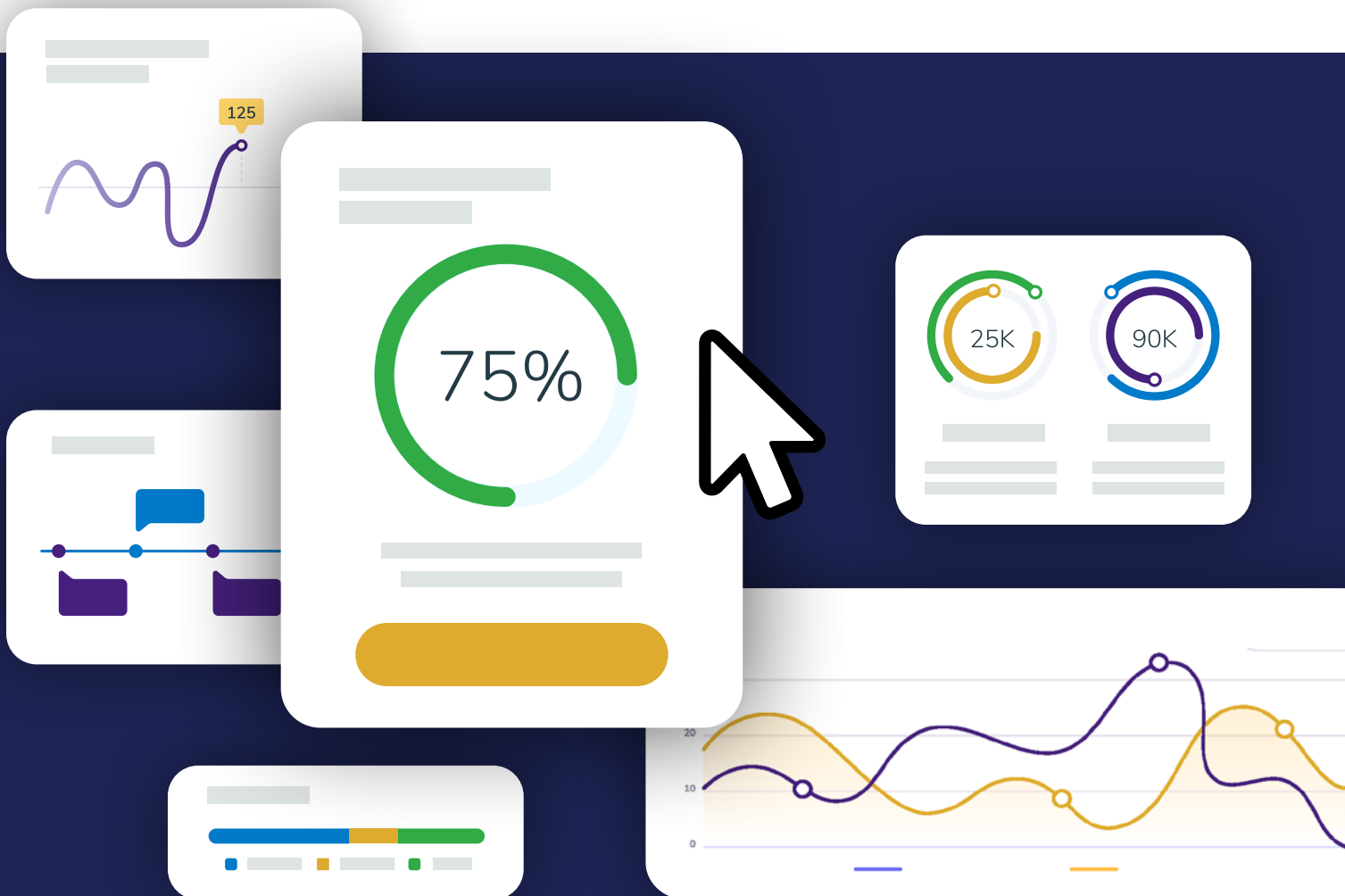
## 6 Negative Space Is Positive

Negative space, also called white space, is a crucial element of all dashboard design. For mobile interfaces, this may seem paradoxical: How can you afford to leave space blank when you're trying to fit all your relevant content on a four-inch screen?

In reality, negative space is especially important for responsive dashboards. Why? Because it increases readability and breaks up blocks of elements. **Leaving space between objects makes the application easier to use on small screens.**

"If you have big fingers and a small phone, that makes it extremely hard to use applications that don't have adequate spacing," McClure says. "You wind up pressing buttons and links that you don't intend to hit, which can be very frustrating."

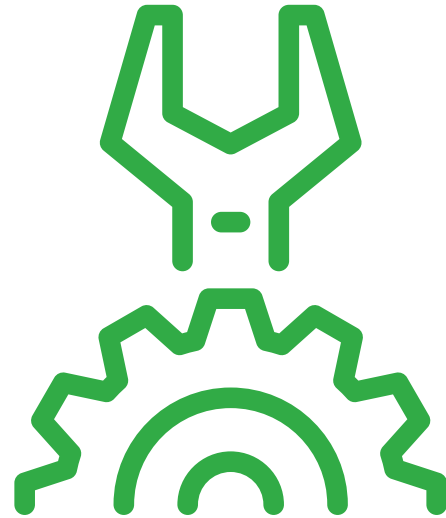
CSS properties such as margin and padding can also accentuate a specific element's importance. In a dashboard, for instance, surrounding a particular statistic or chart with more negative space makes it stand out to the user.



# Tools of the Trade

Developers can leverage a number of tools, many of which are available for free, to help build responsive analytic applications.

Try these six tools to help get your responsive analytic application off the ground.



## CSS Frameworks



### > Bootstrap

Bootstrap is an open-source framework created in 2011 by a small team at Twitter. Since then, it has become wildly popular with developers: Bootstrap's usage has grown by more than 1,000 percent since 2013. It is designed to provide front-end interface pieces that are simple to use out of the box. Bootstrap is also updated continuously, so its users are always working with the most recent, most fully featured version (Bootstrap 4 is coming soon).

Bootstrap makes it easier to design applications quickly, since it does not require developers to code all the components from scratch, as many other tools do. And Bootstrap has a huge community of users, making it simple to find answers online and giving you access to a number of custom themes.



### > Foundation

Similar to Bootstrap, Foundation offers a robust set of tools and components that make it easy to build a responsive application. Foundation is built on REMs, rather than pixels, which makes it handy for responsive design projects. Among its most attractive features are its many templates, which allow developers to build applications faster. Additionally, Foundation gives developers a little more room for customization than other frameworks.

"Bootstrap and Foundation both offer a complete user interface that enables front-end design for building applications," McClure says. "They are built to be entirely responsive and have a mobile-first design approach, meaning the mobile view has been carefully considered."



# CSS Frameworks



## > Materialize

The primary difference between Materialize and the two aforementioned frameworks is the fact that it's based on Google's material design. It is also a completely responsive framework that provides clean design and a host of options. Materialize is built on Sass and includes CSS that makes it easy to embed responsive images—including dashboards—and give pages a fresh look.

"Materialize is great if you are looking for a modern look and feel without having to put in a huge effort," McClure explains.

## Skeleton

## > Skeleton

Skeleton is extremely lightweight, designed to get developers up and running on a project with the lowest possible barrier to entry. It includes just a few hundred lines of code and functions as a "starter kit" with only the most essential elements, such as tables and forms. While it may not have as many bells and whistles as some frameworks, it makes it easy to get a development project off the ground.

"If you want to scale down, cut down on bloat, and make sure your app is really streamlined, Skeleton will give you a stripped-down basic framework," McClure says. "Skeleton only has the essential components, so if you are looking to implement your own styling and customizations, this is a framework that functions more of a baseline that can then be built upon."



## Responsive Design Frameworks Tools

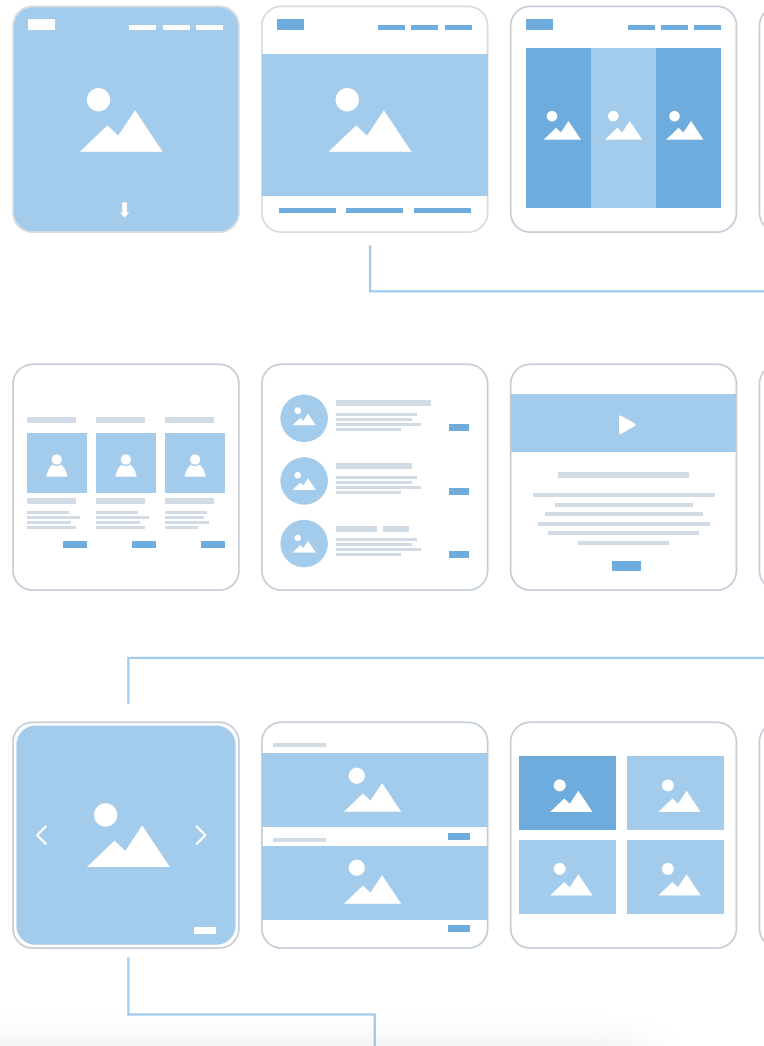
These tools are essential to developing responsive applications. Fortunately for developers, they're available in nearly every browser today.

### Browser Developer Tools

You can bring these tools up by right-clicking on the page to inspect the element (or, if you're on a PC, by simply pressing the F12 button). This allows you to see the CSS styles that are being applied, check what the JavaScript actions are doing, and review other elements on any page.

### Device Emulators

Most browsers today offer a built-in device emulator so you can quickly see what your application will look like on various devices. This is not always 100 percent accurate, but it can give you a nice preview of your mobile design.



## What About Wireframes?

If you're building a new dashboard or report from scratch and want to wow your audience, you might need a little something more than the tools listed above. New designs require mockups, and for remote employees—or for those pesky approval processes where seemingly everyone in the company has to sign off—wireframe tools can be extremely useful.

These are just some of the solutions that allow you to connect with globally dispersed team members and share wireframes and mockups virtually:



**Balsamiq**



**Axure**



**SwordSoft**



**Adobe Illustrator**

# Benefits of an Analytics Development Platform

The number of open-source dashboard design tools on the market today may give you the impression that analytics can be built entirely in house. And sometimes they can—but only to a point.

If your application requirements go beyond very basic capabilities (anything other than a couple static dashboards without much interactivity), a more scalable approach will involve a third party. Many software companies are deciding to partner with an analytics development platform, which gives them both the freedom to code and customize every element in the application as well as the solid foundation and scalability of an analytics expert.



Try a demo of insightsoftware's Logi Composer to see for yourself how to create impactful dashboards.

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## By Using an Analytics Platform, You Can:

- > **Get to market faster** than building it all yourself
- > **Maintain total control** over customizing components
- > **Ensure your embedded analytics have the same look and feel** as the rest of your application
- > **Focus on your core application** while your BI vendor gives you the latest features and scales your solution for the future
- > **Trust that your analytics will be continuously improved** by experienced developers who understand the latest trends and capabilities
- > **Integrate your BI tool with your existing security framework**, pre-built capabilities, and open-source solutions you either already use or want to use in the future



# Logi Embedded Analytics: Purpose-Built for Software Teams

Product teams need intuitive analytics and data visualization capabilities in their applications, purpose-built for every users' unique role and skills. Logi's embedded analytics solutions, by insightsoftware, empower you to design and deploy analytics into the fabric of your organization and products. These analytics integrate with your existing workflows and security models providing a seamless experience where anyone can analyze data, share insights, and make informed decisions.

Learn more at [insightsoftware.com/logi-analytics/](https://insightsoftware.com/logi-analytics/).

## About insightsoftware

insightsoftware is a leading provider of reporting, analytics, and performance management solutions. Over 30,000 organizations worldwide rely on us to support business needs in the areas of accounting, finance, operations, supply chain, tax, budgeting, planning, HR, and disclosure management. We enable the Office of the CFO to connect to and make sense of their data in real time so they can proactively drive greater financial intelligence across their organization. Our best-in-class solutions provide customers with increased productivity, visibility, accuracy, and compliance.



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