Document Overview

Topic	Web Application Development: The Ultimate Beginners Guide (2021)
Primary Keyword	Web Application Development
Meta Description	Have you ever wondered how to build a web app on your own? This guide will tell you everything you need to know to go from zero to a functioning app, step by step.
Internal Links	1. https://www.thinklogic.com/services/custom-web-software-development 2. https://www.thinklogic.com/post/ultimate-guide-to-low-code 3. Top Web App Platforms (Pending) 4. https://www.thinklogic.com/contact

Web Application Development: The Ultimate Guide (2021)

In today's technologically driven world, web applications have become a must for businesses across most major industries.

In an attempt to gain an edge over their competitors, more and more companies are looking for ways to leverage web applications to their advantage.

But since the web development process is so complex, most of them end up wasting a huge amount of time and money, turning their apps into a financial black hole that keeps devouring their resources with no end in sight.

To make sure none of that happens to you, this in-depth, step-by-step tutorial will teach you everything you need to know about the web application development process: the what, the why, and the how.

Without further ado, let's get started.

What Is Web Application Development?

Basically, web application development is a blanket term used to cover the process of building software that runs on remote servers and is delivered via the Internet.

The main selling point of a web application is that it eliminates the need to download anything on the computer and can be used from virtually any device—end users can access a web application just by typing the URL into their web browsers, be it Mozilla Firefox, Chrome, Safari, or their alternatives.

How to Develop a Web Application in Eight Steps

The process of building a web app may seem daunting at first as it involves so many small and big steps. Knowing that, it's paramount to break down the process into smaller phases.

Below, we outline the eight steps you need to take to successfully develop a web application.

1. Conduct Market Research

The failure to accurately find a product-market fit before burning through the cash is attributed to 42 percent of startup failures, according to CB Insights.

For that reason, in order to avoid fighting an uphill battle you are bound to lose, exhaustive market research should be the starting point of any web app development process, no matter how large or small your web app is going to be.

When starting out, you can use tools such as Google, Product Hunt, and Patent and Trademark Search to test the waters.

But since the price tag of building a web application could easily approach tens of thousands of dollars, **the more time you spend scrupulously examining the target market from every angle possible, the lower the likelihood of failure**.

At this stage, be laser-focused on every drop of data that can help you figure out whether or not there's a market for your web app and how difficult it would be to penetrate said market.

To get a clear picture on whether or not your web application has a realistic chance to elbow out the competition, break down the market research phase into the following five key elements:

- **Short-Term, Medium-Term, Long-Term Business and Marketing Objectives**
- **Audience Research**
- **Competitor Analysis**
- **Brand Research**
- **SEO Analysis**

Each piece of the puzzle can provide you with a lot of valuable information for making data-driven decisions throughout the entire web development process—including the core features.

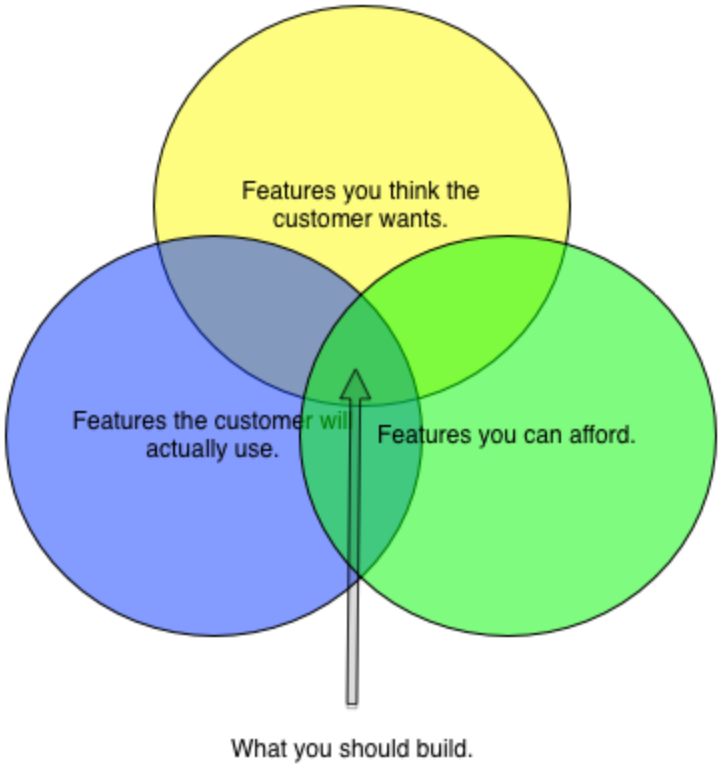
But before you write your first line of code, if you find that similar web applications already exist, that factor alone is a good litmus test for gauging the size of your target market. Conversely, when an equivalent product does not exist, it could mean that you are innovating something new.

By the end of this step, you should establish whether you have a market for your product or not.

2. Create a Feature List

After you have validated the market, it's time to get your creative juices flowing and put together a feature set that should outline the key functionalities of your web application.

To save you some time, here's a simple Venn diagram illustrating the thought process that would help you find that sweet spot between your vision and what your users actually want:



([Source])

List all the things you want your web app to do. But tread carefully: if you add too many features, the app is going to take longer to develop and may greatly exceed your budget.

Remember that your app does not have to be the next Asana or Salesforce—don't try to bite off more than you can chew.

Essentially, your web application only needs to solve a problem in your target market and have enough functionalities to make a solid Minimum Viable Product (MVP). For your convenience, classify all of the features into the following four categories:

- **Core Features**
- **User Features**
- **Admin Features**
- **CLI Features**

By the end of this step, you should create a solid, in-depth feature list.

3. Create Web Application Wireframes

Just like an ounce of prevention is worth a pound of cure, wireframing your web application before starting to write code helps you map out and understand how each element of your project should work together as one unit.

The sketch should include navigation, forms, buttons, branding, and any other interactive element. Keep your design as simple as possible because your aim is to experiment and find the most optimal underlying structure of your project, not selling.

If you're not into using wireframe tools, a piece of paper and a pencil are entirely sufficient to get started.

Think through how these critical features are going to be related to each other and **how to make all these separate features actually work together while providing a great user experience**.

Create a separate wireframe for each core page of your web application—and don't forget the admin pages. On top of that, now is the right time to craft user flow diagrams to ensure smooth user experience/user interface (UX/UI) performance even before you launch your app.

By the end of this step, you should have a set of wireframes mapping out your web application.

4. Set Up a Web Development Workflow

Once you reach this point, you need to decide on the way you are going to organize the development process, as this factor is going to directly impact how fast you are going to reach the finish line.

Luckily, there is no need to reinvent the wheel as the following four development methodologies are some of the most common:

- **Agile**
- **DevOps**
- **Waterfall**
- **Rapid**

Which one should you opt for? This depends on countless factors, including your budget, core features, and scope of the project, to name a few.

By the end of this step, you should decide on the right development methodology for your project.

5. Choose a Web Development Framework for Your App

Frameworks and libraries greatly simplify the process of developing a web app compared to coding every single thing from scratch.

To help you navigate through the countless options available to you, here are some of the most common and reliable web development platforms, frameworks, and libraries:

Rails

Rails is a framework intended to make programming web applications effortless. The framework was created to help web developers write less code while getting more things done.

It is an excellent choice for metaprogramming and database-oriented web programming.

Budibase

Budibase is a platform for creating web apps in a matter of days, not months. Since Budibase is a low-code platform, it handles the backend, frontend, and hosting process of creating an app, making the process less daunting and strenuous.

On top of that, the platform offers long-term viability and flexibility to amend the codebase to meet your unique project needs.

jQuery

jQuery is a fast cross-platform JavaScript library for streamlining the frontend process. jQuery offers an excellent toolkit for building animations, adding plug-ins, and navigating documents.

React

React is a popular and powerful open-source JavaScript library for creating UI and UI components. React is ideal for large-scale web projects.

We have barely scratched the surface of the options available to you, so we strongly encourage you to do additional research before making a final decision.

By the end of this step, you should choose the web development platforms, frameworks, and libraries for your project.

6. Build Your Web App

Having laid the groundwork, start building out your web application. With everything mapped out, the development process can be broken down into three main components:

- **Data Modeling**: Identify the data and data types you need to store in your databases, as well as the way they are going to be related to one another. Then proceed to execute your data strategy.
- **Frontend:** This term refers to everything your end users are going to see and interact with while utilizing your web application: the layout, the buttons, the fields, etc. Use CSS, JS, and HTML to polish up your frontend performance.
- **Backend:** This component of any web application is used to categorize everything a user cannot see. Though invisible for the user, backend is the backbone responsible for making your application work, including servers and databases.

By the end of this step, you should be on track for creating a prototype or an MVP application.

7. Set Up Pre-Alpha, Alpha, and Beta Testing

At each stage of the development process, every bit of constructive feedback from your user base is worth its weight in gold.

To accurately tailor the functionalities of your application to the actual needs of your users, make sure you extensively test out your project throughout the entire development cycle.

- **Pre-Alpha Testing:** Fixing all possible issues before the actual formal testing.
- **Alpha Testing:** Fixing all possible issues before releasing the web application to the end user.
- **Beta Testing:** Fixing all possible bugs with the help of a small number of end users before releasing the application to customers.

Record the feedback and amend your app's design until the potential users are satisfied—it's an ongoing, never-ending process of trying to predict the needs of your users.

Test your app for usability, functionality, security, and performance.

> *By the end of this step, you should be past the pre-alpha and alpha testing stages.*

8. Host and Deploy Your App

In the final step, set up the infrastructure to launch your web application into the real world. This is when you buy a domain for your web app and choose a cloud-hosting provider.

What's more, once you take the plunge, your web development team will have to be constantly on the lookout for any underlying issues that may arise post-launch:

- **Desktop Performance**
- **Mobile Performance**
- **Tablet Performance**
- **Security**
- **Broken Links**
- **Browser Compatibility Testing**
- **SEO / Social**

Make sure your team is ready to quickly respond to and fix a massive number of bugs and issues that inevitably pop out of nowhere once the application goes live.

Over to You

As the demand for web applications increases, it is more important than ever to familiarize yourself with the process of web app development.

Contrary to the assumption that web application development is a "dark art," everything can be broken down into smaller, more manageable stepping stones leading up to the launch of your web application.

If you need help with creating a custom web application tailored to your unique needs, reach out to our team, and we'll be happy to help!