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A Guide to Building Feature-rich Mobile Apps with AngularJS

Executive Summary

The need to make a solid impact for growing a business online has become inevitable for any organization today. After all, we live in a digital era where competition is more intense than ever. Your mobile app, in many ways, can help you beat that competition. So, you might wonder how to get there?

Let's start with the basics. It is about the creation of the app. Now, as there are several platforms available today for developing apps, the question is which one to choose? Some of the prerequisites of an ideal app for mobile development are that it needs to have a JavaScript base and an open-source framework.

Why JavaScript and opensource? Java is one of the common interfaces in mobiles. It further aids in simplifying the development process. The open-source framework helps in addressing the challenges related to the creation and testing of code. So, AngularJS fits the bill perfectly as it is enjoying a lot of popularity in the market.

This whitepaper explores the basics of the AngularJS platform, its evolution over the years, benefits for developers, in-demand frameworks and apps, and what the future holds. We also feature some examples of apps built with AngularJS that will inspire you for your next mobile app.

Introduction to AngularJS

Google launched AngularJS in 2009 to simplify the application development process. It is a JavaScript-based framework that has made it easier to develop mobile and web applications over the years. The framework is ideal for creating various interactive elements and components of an application.

It is easy to use and helps in gathering data quickly. Developers do not have to add any extra source code. It additionally eliminates the need for an extra code to maintain flexibility. There are no different add-ons, but the framework offers many building blocks you can use.
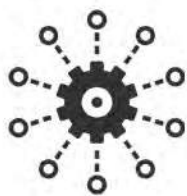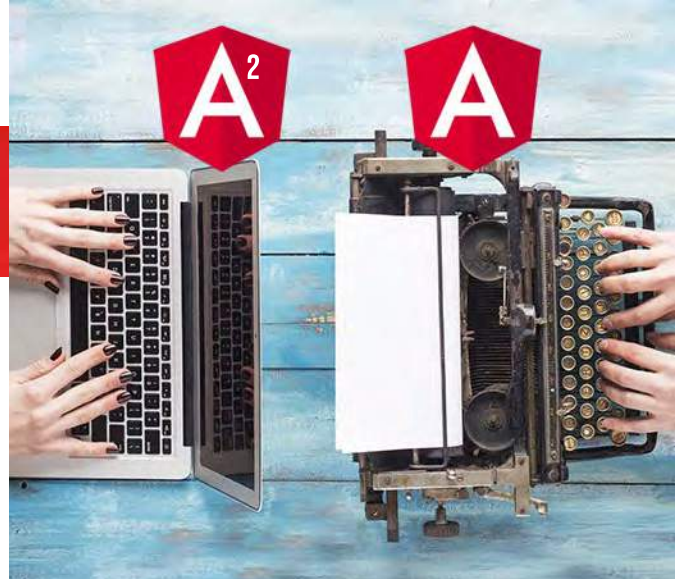
Here is a list of them

- ☑ Error and event handling
- ☑ Guidelines for gathering data into HTML
- ☑ Binding and routing
- ☑ HTML and controllers rendering
- ☑ Guidelines for expanding HTML characteristics
- ☑ Unit testing

Besides these fundamentals, the framework is capable of influencing jQuery DOM libraries. The framework assists developers in enhancing the HTML functionality with the help of constructs. Things further get simplified with abstract DOM manipulations and modifications.

Evolution of AngularJS to AngularJS 2.0

Since its launch in 2009, it took around seven years for AngularJS 2.0 to debut. It was in the works for a long and the final version got released in September 2016. Here's how things changed with AngularJS 2.0.

Framework Revision

The launch of AngularJS brought in relief for developers looking to create feature-rich applications. However, certain challenges necessitated the need for redesigning the framework. Here are some of the challenges.

- The development of custom components needed a thorough knowledge of the digest cycle. This despite the framework envisioned with component design.

- Keeping in mind the performance issues for larger applications, developers had to gain knowledge of aspects like bootstrapping, digest cycles, etc.

- There was no standard tool chain for troubleshooting issues and improving productivity.

- Scope confused developers, and they misused it in many concepts.

What's New in AngularJS 2.0

Keeping in mind the challenges, AngulaTrJS 2.0 was complete revamp from AngularJS. There were several upgrades to improve the developer experience and app performance. That ushered in several advantages listed below.

- Declarative metadata with the help of Typescript annotations
- Structuring and organization of codes through object-oriented techniques of JavaScript. The typescript also ensured application safety
- Enhanced strategies for change detection, bootstrapping, and component tree
- Better adherence to web standards, leading to improved reuse and modularity
- Easy upgrade options to the latest versions for developers
- Ahead of time compilation for improved performance and security
- A new set of languages like Dart, ES5, ES6
- Quick application development through CLI

Hybrid Development Platform

Besides enabling the creation of intuitive mobile applications, AngularJS also helps develop dynamic desktop and web apps. There are multiple form factors that the platform supports.

Cordova and Ionic framework assist in packaging web apps on mobile platforms. There is also an added possibility of accessing the native device capabilities. With the help of the AngularJS framework, Native Script builds mobile apps. It gets done with the help of JavaScript runtime core and rendering native components.

15 Benefits of AngularJS Framework for Mobile App Development

Here are 15 reasons why AngularJS is an ideal framework for mobile app development
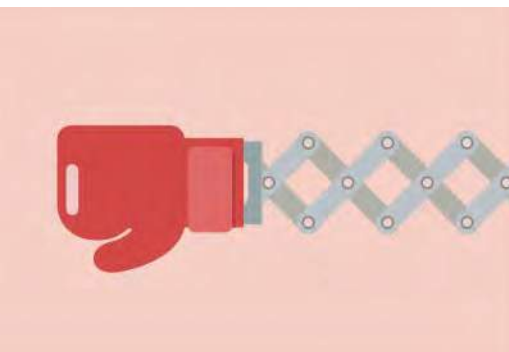
Open Source

As an open-source platform, AngularJS gives developers the flexibility for making changes. The JavaScript framework also makes it a cost-friendly option for businesses. Based on the client needs, you can also rewrite the existing source codes. The framework simplifies them into shortcodes.

Developers get the chance to enjoy several technical and operational features related to open source. Some of these include vulnerability, interoperability, interpreted collaboration, group-oriented technologies, and much more.

Easy Testing

The framework offers support for both integration and unit testing. As it is a JavaScript-based framework, there is a need for top-notch testing efficiencies. So there is always dynamic coding.

It includes powerful expressions but does not take assistance from the compiler. There arises a need for effective coding, which is one of the drawbacks. But developers can simplify their testing task by integrating it with dependency injection. Tools like Jasmine and Karma make it easy for developers to overcome complications during testing.

Easy Extendibility

Many characteristics of AngularJS enable easy extendibility as they have HTML functionality. Because of this, every function can have a dedicated behaviour. The features can also create directives on an individual level. So, it gives the ability to customize.

These inbuilt characteristics give you the chance to extend them forcefully. The easy extension enables the integration of multiple applications and tools seamlessly.

Google Support

As Google manages the AngularJS framework, there is ample community support for developers. Whenever there is an update, it is easy to auto-upgrade the application. Enterprise users at the corporate level also get access support on the intranet through Google-supported websites. There is also a possibility to have extended working across the system.

No Prior Knowledge Needed

The AngularJS has scripting languages like JavaScript, HTML, and CSS. So, there is no need for you to have the knowledge of additional scripting languages. The languages listed here are easy to learn, which means you can work on AngularJS effortlessly. There is also a good learning curve for developers who stand to gain a lot.

Easy Customization

The customization capabilities of AngularJS negate the need to start things from scratch. You can easily add or delete features based on the client's demands. The user-friendly features help prevent unwanted elements from entering the development process. Whenever you want to make any changes, you can do them seamlessly.

Simple Architecture

Developers can design and code applications easily with the simple architecture of AngularJS. It is also easy to understand for developers who can introduce changes hassle-free. It can handle complex requirements and manage large web applications.

Better Design

The improved and simplified design architecture makes it possible for developers of all experience range to get a hang of things even if they join a project mid-way. They can handle various components effortlessly.

The programming of code also becomes easy because of the architecture. If there is any feedback received from the client at the mid-stage of the project, you can easily redesign the architecture.

Declarative User Interface

The framework uses HTML to identify the user interface of an app. The codes written in JavaScript boost the interface because of HTML. So, HTML helps in creating a simplified interface. AngularJS takes care of most of the characteristics when enabling a declarative user interface. Users only need to separate their requirements, and AngularJS takes care of it.

Less Coding

AngularJS takes away the hassle of coding from developers. As it encourages shortcodes, developers can focus on improving the efficiency of the app. They do not have to worry about spending a lot of time on coding. It aids the easy implementation of ideas during the development stage. The less amount of code also helps in deleting and rewriting them.

Code Reusability

Developers can reuse the same code wherever possible at the development stage. Developers can use the same code written for similar functions like 'add button'. So, they can work on unique codes and also save their time from doing repetitive work.
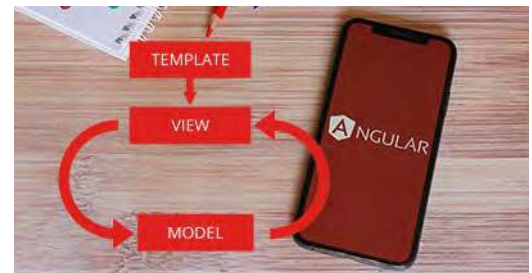
Shorter Timelines

Developers find AngularJS as a platform that is quick to learn and implement. The easy interpretation and coding of HTML make the development process faster. Shortcodes further make it easy for developers to finish an entire application. There are only a few attributes required for HTML code to develop an app quicker.

Two-way Data Binding

This aspect helps developers get an easy transition between the model and view of architecture. It also aids the accurate integration taking place between the model and DOM. Businesses that create custom software with AngularJS can replicate them easily.
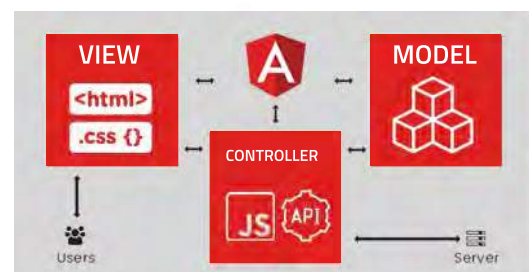

SPA Features

There are several single-page application (SPA) features in AngularJS. Developers can effortlessly build and handle online forms. The team can have a fixed workflow where accomplishing tasks becomes seamless for everyone.

Parallel Development

AngularJS offers the advantage of having parallel development of applications. The framework takes care of the dependency injection that remains bound to the MVC architecture. Developers get the chance to create applications faster and better.

Popular
AngularJS Frameworks
for Mobile App Development

Here are some popular frameworks that you can use to design your next mobile app
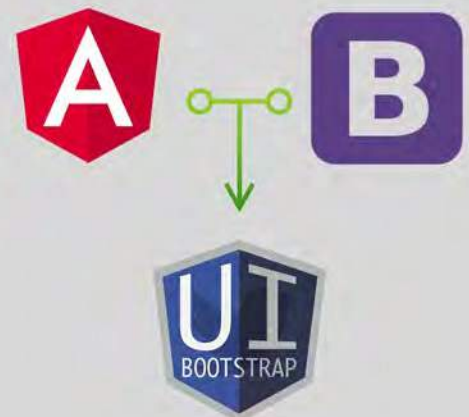
Mobile Angular UI

It is best suited for designing advanced mobile apps as it an extended version of the Bootstrap framework. Developers prefer this framework, powered by HTML5, for the creation of most mobile apps. There are components like sidebars that are different from the ones that are also available in Bootstrap 3.

Onsen UI

It competes closely with the Ionic framework as both got launched in the same year. Developers can use the framework for designing both mobile and web apps. The framework also improves the speed of app development. It comes with tools like Monaca IDE and also supports jQuery.

Angular UI Bootstrap

Built on a popular front-end framework, Bootstrap comes with CSS and HTML-based design templates. The open-source framework has different components like Collapse, Alert, and Carousel. It is stable and does not require JQuery. There is also support from a large community of developers.

Angular Foundation

The framework got ported to AngularJS, hence the name. It combines the custom elements and directives of AngularJS. Developers can design apps with HTML elements like pagination, accordion, etc. Foundation is an updated version of bootstrap, so it is more effective.

Lumx

Designed based on Google Material Design, it helps developers in developing feature-rich applications. The Google guidelines simplify the process for quick development of apps. Developers can customize the app design with Bourbon, Neat, etc. It improves the app functionality.

Ionic

It is ideal for creating hybrid applications. Hybrid models help developers save time and also allow code reusability. If you are looking to design prototype apps or want to launch a full-fledged app in a quick time, a hybrid model is a good choice.

The development process becomes faster and simplified with solid building blocks. You can optimize the framework for both Android and iOS devices. Developers also get access to the CLI tool when they work on the Ionic framework.

Popular Categories of Apps
that Use AngularJS

Here are some popular apps that can give you an inspiration
for your next mobile app

YouTube TV

YouTube is the most popular video-streaming app worldwide. The brand launched YouTube TV in 2017 to offer a range of live programs to users at an affordable cost. It is available on Chromecast, Android TV, and Apple TV. The popularity of YouTube makes the app a high-traffic platform. It shows how AngularJS can support such apps with a heavy user presence.

Moviebuff

Moviebuff.com is a well-known app in the user-review category. According to Moviebuff, they are the definitive source of information about newly released movies in India. User reviews are helpful for people who want to invest their time carefully in watching worthy films. The AngularJS framework is ideal for creating such websites with a huge repository of information.

JetBlue

A budget American airline, JetBlue is one of the top 10 carriers in terms of passenger count. It naturally makes their website and mobile app a high-traffic space. The AngularJS framework helps in giving a rich user interface to users. It also enables a seamless transition between exploring destinations, booking tickets, using a flight tracker, and viewing road maps.

AngularJS offers the dynamic features that are essential for travel and transportation apps. Right from searching flights to booking tickets, everything needs to be seamless. The JetBlue application also has third-party integration for services like accommodation and vehicle transport. All of that translates into the best user experience.

Weather.com

A top weather portal, they offer forecasts on both local and national levels. Besides the regular updates, they also have weather radar and other related reports. It is one of the most-visited websites as there more than a hundred million users per month. The ability of AngularJS comes to the fore here as it can support a website with such high traffic.

When there is a website with extensive information, you can have separate directories where Angular modules lie. So, developers also get the freedom to work on individual sections of the website. It does not affect the functioning of the rest of the website.

Upwork

Upwork is a talent marketplace where businesses can hire skilled freelancers from around the world. Over the years, Upwork has become one of the leading freelancing platforms for both clients and freelancers. Any business can get on-demand talent for any of their work at any time. Freelancers also get the opportunity to engage with projects that best suit their interests.

The AngularJS framework gives it excellent functionality and an intuitive design. It also supports a growing number of freelancers and clients who communicate, exchange files and make and receive payments on one single platform. The application offers seamless navigation across the dashboard, available jobs, chat, payments, and much more.

LinkedIn

LinkedIn is one of the many social media apps that have Angular as the framework. Millions of users globally use the platform to find jobs, share information, and network with peers. The popularity of the platform has ascended a lot as it an excellent site to hunt for jobs.

The pandemic has only further contributed to the engagement on the platform. Freelancers and independent workers use it as well to find suitable gigs. The AngularJS framework supports a large user base and data updates on a real-time basis.

Increased Enterprise-wide Adoption of AngularJS in Recent Years

AngularJS has managed to become a preferred development framework for front-end developers. It started as a niche library. However, it has become a full-fledged framework over the years. Developers are increasingly using AngularJS for creating intuitive and feature-rich mobile applications.

One of the other strong points is the community, which helps developers solve all their queries related to the framework. It has also contributed towards building an ecosystem that includes development and testing tools, CLI, and IDEs. There are also UI components toolkits, data libraries, and tools for cross-platform development.

Regular workshops, training, and books authored by experts help keep the learning on for developers. The online community aids developers to stay up-to-date with the latest industry trends and network with the industry.

The evolution of AngularJS into a full-blown development framework and increased community support has increased its adoption by businesses of all sizes. There is additionally the ever-reliable and helpful support of Google. They will continue making updates that will help developers design better apps.

What the Future Holds for AngularJS in Mobile Development Arena

AngularJS has made enhancements to both service workers and server-side rendering. It has helped AngularJS lead the trend of web development by making the best use of both. It ultimately helps in delivering the best user experience. The framework also gives developers a lot of flexibility about caching content in progressive apps and offline access.

Apps built with AngularJS can work in an offline environment through browser services like Storage and IndexedDB. Furthermore, in modern digital environments, systems must have that scalability factor to meet the changing consumer patterns. So app efficiency is critical to serving user requests without network or computational costs. It is possible to achieve that with the help of the cloud.

AngularJS also helps in improving the performance of apps and user experience as its distribution only contains static HTML assets, CSS bundles, and JavaScript. It also becomes easy to deploy such apps to edge and CDN. The ecosystem of AngularJS helps in building and maintaining a repository for enterprise components. It becomes possible through the support of Storybook and Angular Playground.

Businesses are also leveraging the reusability of business components and presentational elements of various Angular apps. The mono repo patterns and Workspace APIs support reusable artifacts as exportable libraries. There is also a growing interest among the industry to use serverless architecture and MBaaS platforms for developing native cloud solutions. AngularJS will remain as a preferred app development framework.

Conclusion

AngularJS is an excellent mobile app development framework for several reasons. It can help businesses get the next-gen applications that need decoupling and are fault-tolerant, reactive, and scalable. There are regular upgrades to the framework along with a growing ecosystem.

The ease of adoption and alignment with cloud-native patterns make sure that the framework has all the features required for the development of futuristic apps. Developers can continue focusing on building intuitive apps that deliver the best user experiences.

The support and backing of Google are testimony to the fact that AngularJS will be a better investment for organizations looking to scale their business.

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