

# Role of Angular JS in Android Hybrid Applications

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**Abstract**— Mobile phones have drastically transformed from being simple devices to being fully – functional pocket – sized computers, equivalent to any desktop or laptop. This typically led to the requirement of mobile application development and mobile – friendly user interface design development , one of which are hybrid applications. Hence it is important to understand, learn and analyze the role of AngularJS in android hybrid applications. This paper conducts a survey on the role of AngularJs and some of development tools available in the market.

## I. INTRODUCTION

Nowadays, every person walks around with at least one smartphone, if not multiple. Along with the ability to make and receive calls and text messages, users pay keen attention to the specification of the smartphone, analyzing the various features and the rich capabilities available, such as gigabytes of memory, multi core processors, high resolution camera and so on. A mobile app, short for mobile application, is a software that is pre – installed or downloadable from an application store, and installed on mobiles and tablets. The count of mobile apps that are being developed and released into the market increases exponentially by the day.

Different operating systems run on different smart phones – Android, iOS and Windows being the most widely used. These platforms use different programming environments, each with its own language and APIs, to develop unique

and high – end user experience apps. The increased demand of such apps gives rise to the necessity of cross – platform mobile app development frameworks, to ensure that apps gain access to the largest user – base they possibly can, irrespective of the platform they use, resulting a low cost – in terms of money, time and effort.

We have many latest technologies and mobile app development languages but selecting the one that meets with your requirements is a challenging task. In present scenario the best suited language to develop hybrid mobile application is Angular JS.

Angular JS introduced by Google is a powerful JavaScript framework design to developed mobile and web applications, consist simple and powerful JavaScript features to develop dynamic applications.

Angular JS helps developer to add and manipulate extra code to maintain the overall integrity of the code .

## II. TOOLS FOR MOBILE APPLICATION DEVELOPMENT IN ANGULAR-JS

1. **IONIC** : Ionic a HTML5 based mobile app development framework which is widely used to create hybrid mobile apps. It is an open – source

SDK. Hybrid mobile applications are small websites that execute in a browser inside an application that can access to the native platform (Android,IOS,Windows etc) layer. Ionic has many inbuilt JavaScript and CSS framework components for building mobile apps. It becomes easier to build applications, as Ionic is built on top of AngularJS framework. As Ionic apps are built in HTML5 framework, they require a native wrapper like PhoneGap or Cordova to deploy as a native app.

2. The Ionic Framework is currently the best known Angular JS based hybrid mobile application framework. It's open source and free, providing very rich and advance library of optimised-mobile HTML, JavaScript and CSS components, gestures based user Interface , and tools for developer for building highly interactive rich applications. Everything is built with SASS and optimized for AngularJS. Ionic framework developed with the support of AngularJS that is very efficient in performance wise.
3. **KENDO UI** : Kendo UI is a advance mobile application framework, developed by Telerik. Its has latest JavaScript CSS and HTML5 based standards, it provide client and server based functionality for application.Initially it uses jQuery, it also comes consist a complete AngularJS and Bootstrap integration support.  
Kendo UI is a commercial product with core open source version . it is great if you need dedicated support

from company. Technically two versions are available, a commercial version and an open source Core edition. If you have previous JQuery based application experience and move towards AngularJS based platform then it is best suitable for you. The core edition consist the core framework, 40 newly web widgets, many DataSource provider components, templates UI, drag-and-drop support, and themeable widgets, as well as AngularJS directives.

4. **MOBILE ANGULAR UI** : it is a hybrid mobile app framework that built on the Bootstrap 3. It provide extra layer that are missing in the Bootstrap , like sidebars, overlays , scrollable areas ,switches, absolutely positioned top/bottom navigation bars that donot bounce on a scroll. It do not require any dependencies from pervious jQuery, nor complex bootstrap js. It consist very rich AngularJS directive that including rich libraries like **overthrow.js** and **fastclick.js** so it can offer good mobile UI experience.
5. **ONSEN UI** : Onsen UI is a nwely advancement in hybrid mobile application framework current market. It released in market at the same time when Ionic framework is introduced , It was built with AngularJS although it's not wrapping the features like Ionic framework, with this developers can use the latest AngularJS version framework features ,but the benefit of speed is going to impairment .

Onsen UI CSS framework is built with the help of Topcoat library that does not have any bulky JavaScript code, making it lighter somewhat faster than other similar frameworks. This makes it a perfect solution for both hybrid and web apps.

### III. So, What Is AngularJS?

It is the most widely used JavaScript frameworks that present in current hybrid mobile app market. It can be used within the HTML page with script tag. However, it does not come with any advanced add-ons, but, it helps the development process very easy and simplified the process for developer. It consists everything that may help the programmer in making dynamic mobile and web page application development.

#### Basic of AngularJS :

- Rules and guidelines to extend available HTML attributes
- Directives to aggregate data into HTML
- Event and Error handling Mechanism.
- Unit testing
- Binding and Routing.
- Event Controllers and HTML rendering mechanism

Apart from the previous mentioned fundamentals, it also helps to reconfigure J-query DOM libraries. Literally, AngularJS allows developers to increase the working functionality of HTML5 by adding constructs.

Furthermore, it makes everything a lot easier by abstracting DOM modification.

#### Let's Summarize AngularJS

- It helps in distension the HTML templates, make us to use an advanced development perspective in managing the components.
- Helping us to deliver better stability by manipulations of JS and HTML.
- The modular approach helps developers to develop a simple and maintainable and updatable code that is also easy for testing.
- It is easily embedded to an HTML page by a simple html script.

### IV. AngularJS area of Implementation

AngularJS has its own set of benefits, developer can select the one platform that has its own strong gestures feature and meets with the application development requirements.

Angular JS meets all the requirements that a current hybrid applications developers are required. AngularJS would help to develop a great web application with the best UI experience if you are looking for:

- **Video streaming on demand application:** It is the best platform for developing such types of application. The most famous examples are Netflix, YouTube, TikTok.

- **User Review Applications:** This type of application helps to gather information from the user on particular topic and actions they are interested to take. This way, they can easily find the best suited solutions and also save money.
- **Tour and Travel Destination finder application:** Since these application consist a dynamic features of loading data, AngularJS helps in developing this type of special travel based application. JetBlue's is a good example in this category.
- **Weather forecast update application:** Application like Accuweather.com are really good examples. AngularJS helps developers to use rich libraries of this framework to show realtime data in meaningful attractive UI.
- **Content portals User-generated Apps:** Upwork.com and Freelancer.com are both developed on AngularJS, these applications are highly capable of handling a huge amount of user data, information and posts.
- **Interactive social apps:** One of the good social and professional theme based application is LinkedIn. It is Develop with AngularJS, which is highly popular in this category.

### Reason for choosing AngularJS

Because of its high user friendly and awesomeness, every developer finds it as the best application development platform.

Other than all, its usefulness is due to its wide conceptual and versatile benefits. Let's discuss the benefits of AngularJS in a constructive approach:

- **wider community Support:** its provide a huge pool of options and tool for both client and developers. Now it is very easy to developer to point out the issues and fix them and on the other hand client also can select the verity of options available.
- **Easily maintainable:** Code written in AngularJS is very easy to maintain and understand by developer team. Client can implement their requirement without depending on developer.
- **Customization :** developer are not require to add all the required libraries at a time they can add later
- **sutable for small scale application:** AngularJS is really fast to develop small application as its has rich set of libraries.

### V. Summary

Hence in this paper the role of Angular JS in hybrid mobile application development is discussed and with this we easily understand the scenario why today's market is moving towards hybrid applications.

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