

A comparative study of versions of JavaScript

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Abstract

To develop light and small web applications that are easy to create and simple to test and maintain when they are extend their code. This experienced guide introduce AngularJS, release by the search engine Google and uses the MVC architecture with the oset up source JavaScript. AngularJS is highly enrich in prominent attribute for designing the client side applications with many features and properties. This paper totally revolves around the AngularJS, like a tour to AngularJS with its important features and also gives the introduction to the versions of AngularJS

Keywords: REST, MVC, JS, DOM, AngularJS

I. INTRODUCTION

AngularJS is a framework originated by the search engine Google and it is used for web applications. It helps you to design variable size of web application that require JavaScript, Cascading Style Sheet, HTML on the client side. The name Angular comes from the angle brackets `<>` and `ng` sound seems angular, therefore, it is recognise as AngularJS. For professional web development, AngularJS is widely used JavaScript framework. It is well suited web application of any size. It is not like a library because it has vast functionality and it is not dependent on other JS. It is compatible with both desktop and mobile browsers. It automatically starts when either DOM content or AngularJS is loaded to the browsers. After this, AngularJS looks for the root of angular app compilation which is `-ng app` directive and tells about JS

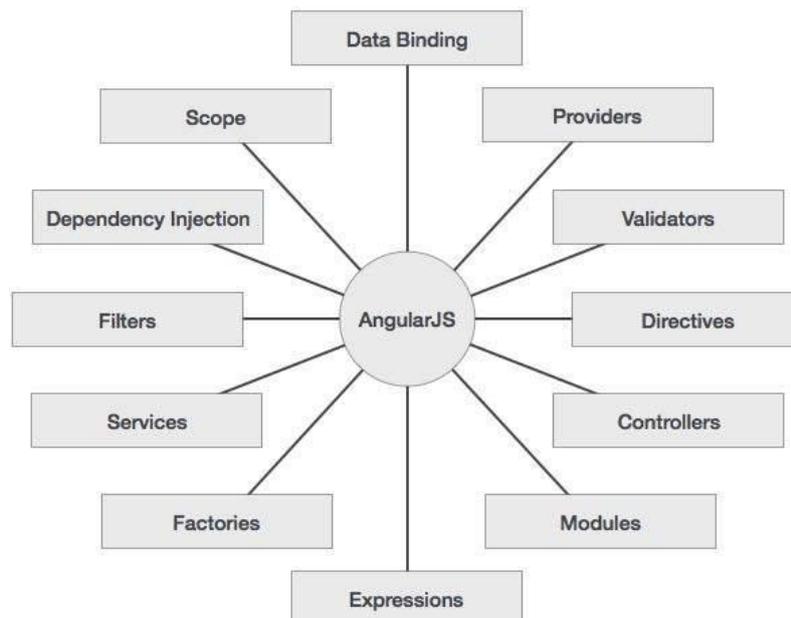
with in DOM. the Angular will do the following steps if ng directive is found:

1. Firstly, load the component combined with the directive.
2. Now, design the application injector.
3. Last step is auto-bootstrapping. Auto-bootstrapping is a process in which compilation is done from the root element of -ng app.

This process is called auto-bootstrapping.

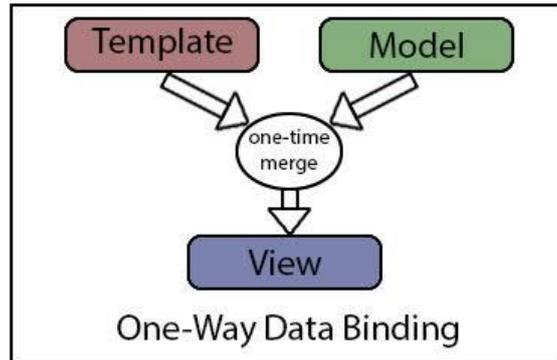
Features of AngularJS:

- Ddata binding
- REST friendly
- MVC-based Pattern
- Deep Linking
- Template
- Form Validation
- Dependency Injection
- Localization
- Full Testing Environment



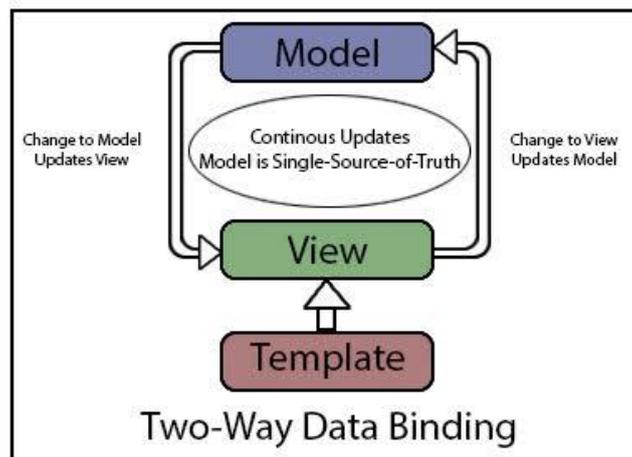
1. Data Binding:

one way data binding not updates and synchronize the view and the model components. if any changement occur in one (view/model), the developer have to change the respective change in other also. It is not updated automatically. this is the problem is one way data binding, to overcome this problem, two way data binding comes.



Two way data binding:-

Data-binding in AngularJS is the automatic synchronization of data between the view and model components. The compilation step produces a live view. when the view changes, the model reflects the change and when the model changes, the view also update the changes. It happens automatically and immediately and make sure that the view and the model components is updated all the times.



Two way data binding is the most promising property which separates you from writing the lines of code with some minute alternation that include in many places. now, with the help of Data Binding developers are not take care for manually

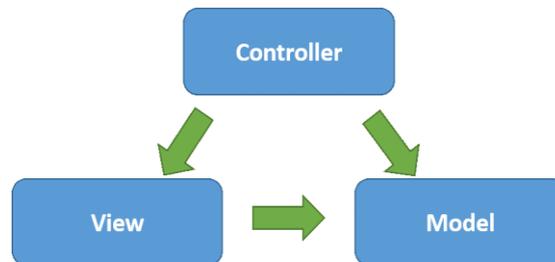
alternation the DOM elements to flash the changes in model..

2. REST Friendly:- (Representation State Transfer) is an architectural schema for designing distributed system. It has a client server relationship, you can quickly talk to the server and get the data you need to interact with your web pages. It is not strictly related to HTTP, but commonly associated with it.

3. MVC Based Pattern:-

M	Lowest level of pattern for maintaining the data
V	Responsible for displaying all or portion the data to the user.
C	Software code that controls the interaction between the model and the view

The view contains the visual layout and presentation (it is defined in HTML in AngularJS), the model contains the logic and the data (written in JavaScript in AngularJS) and controller connects the two (written in JavaScript in AngularJS). The controller needs to know about model and how to resolve the view and given or handled it to the model.



4. Form validation:- AngularJS provides properties on forms that help to validate them. AngularJS offers client side form validation. AngularJS gives various information about the form, monitors the state of the form and input fields applied to a form. If a user gives the incorrect input, the AngularJS notifies it that the input is invalid for the form and gives an instant message for how to correct that invalid code. Server side validation is required for a secure application.

5. Dependency Injection:- Dependency Injection is the beauty of the AngularJS. The whole of angular is linked together with the dependency injection. It is a software

design pattern which deals with the dependency with the components. Everyone wants to implement de-couple and less dependency components. we can design each and every component without depending on other components. In AngularJS "injectable factory Method "or "constructor function "using these function we can injected the dependencies. Components are injected with the "value" and "service" components as dependencies.

VERSIONS OF JS:-

- AngularJS
- ReactJs
- EmberJS

Comparison of JS Frameworks: AngularJS vs. ReactJS vs. Ember.js

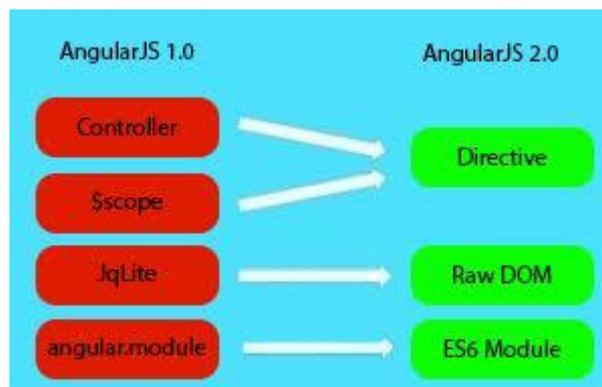
1. AngularJS: Champion of the Framework Space

AngularJS is an open source web application framework which places an emphasis on getting an app up and running quickly . AngularJS solves the problem of SPA’s by extending the functionality of HTML with directives.

Types of AngularJs:

Angular1.x JS

Angular2.x JS



Pons:-

- It creates customized DOM elements.
- Easy code reuse due to extension of HTML syntax
- Due to well-structured templates amount of code required is low.

Cons:-

- It's directive API 's are complex.
- It has high complexity of third party integration.
- Processing becomes slow if interactive elements are more.
- Debugging is hard.

2. ReactJS: Newcomer in an organization

ReactJs is an open source information center which is used for efficient rendering of large data sets. It was launched by facebook.

Pros:

- Interface design and learning API are easier.
- JavaScript debugging are easy because of fully component based architecture.
- Faster update.

Cons:-

- It is a library not a full framework.
- It is a fairly new architecture JS so developers are not used to it.
- It has sophisticated layer view.
- Generally developers are not used to its flex architecture.

3. Ember.js: All the Heavy Lifting

EmberJS creates single page client side web applications based on MVC pattern. The framework provides structuring of different applications with emphasis on scalability by providing all inclusive data binding together and URL focused accession.

Pros:-

- Well integrated of strong data layer with JAVA.
- It has full-fledged templating mechanism which drastically reduces the overall amount of code returns.
- It is performance focused so it has quick boot and inherent stability.
- It is compatible with many application ecosystem.

Move towards the features of AngularJS vs. ReactJS vs. Ember.js Features

1. Dynamic UI Binding

AngularJS	It can update several bindings simultaneously. It allows UI binding at clean object.
ReactJS	In ReactJS, states are directly linked to UI. The state parameter is merged into the internal state of reference by passing it as an object.
EmberJS	In EmberJS, specific setter method is used on a model to update a value which in return is bound to UI while the page is rendered by handle bars.

2. Reusable components

AngularJS	AngularJS creates its own meaning (semantic) and reusable HTML syntax. Angular components (directives) are more effective than ember components.
ReactJS	ReactJS components are not related to UI or even complex program logic but contain some utilities. In this JS, mixins are used at view and controller level.
EmberJS	It depends upon widget based approach. It allows custom elements to be used in handle bar template. Ember's infrastructure enables custom application specific HTML tags.

3. Routing

AngularJS	Its router configuration requires a controller has to be managed manually.
ReactJS	React does not handling directly but it uses various modules for routing i.e. flow router and react router.
EmberJS	It has complex routing but ultimately at id powerful routing.

4. Data Binding

AngularJS	Supports two way binding
EmberJS	Supports one way binding.
ReactJS	Supports two way binding

5. Opinionation

AngularJS	It is a little bit flexible JavaScript as it allows implantation of client side stack.
ReactJS	In this, development is easier as its considerably less opinion.
EmberJS	It has a govereny nature about application formation and it can get you to confirm to its expectations

IV. CONCLUSION

In this paper, comparative study of all the versions of JS. For most enterprises, AngularJS is more suited out of these three. It is the one stock stroke. It is very popular among developers. As for Ember, we can say that it is smart JavaScript. It takes many decisions on its own so the time spent on researching and glowing together libraries is saved. It is not so popular so it takes time to gain knowledge. It is well suited for Future aspects projects. ReactJS is lighter than the two. It renders UI components very well. It can be paired with the other two frameworks. It would be an appropriate choice if the existing code base needs constant up gradation. So we have different features and according to our needs, we choose the one for the best results.

REFERENCES

- [1] Nilesh jain, priyanka manghal and deepak mehta, AngularJS: A modern MVC Framework in JavaScript
- [2] <https://www.rroij.com/open-access/AngularJS-a-modern-mvc-framework-in-javascript.php?aid=52578>
- [3] Sneha Ambulkar, Amravati, Angular JS , International Journal of Scientific & Engineering Research, Volume 7, Issue 2, February-2016
- [4] <http://docs.AngularJS.org>
- [5] <http://dzone.com//articles/companion-of-is-framework-angularjs-vs--reactjs-vs-emberjs>

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