Evolution of Javascript and its Frameworks

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Abstract – **The increasing popularity of Java Script has led to a variety of frameworks that aim to help developers to address programming tasks. However, the number of JS Frameworks has risen rapidly to thousands and more [1].There was a period when the development of the web pages was very hectic job for the browsers, it was early 1990's when the necessity of new browser programming language is feel which is completed by the Mocha language and renamed into LiveScript and finally it's become JavaScript, although it is not linked to Java but the name enable JavaScript to get popularity in faster term. When the JavaScriptwidely accepted over worldwide the need of compatible code is needed for all the browsers at that is when first ever JavaScript framework comes into existence named DHTML in 2000 after that most widely used JavaScript library known jQuery comes into existence but developers community felt the need for a complete front-end framework to develop the complex web applications and that was fulfilled by the various new JavaScript based frameworks like – Angular JS, React, Vue JS and other backend like Node JS.**

Keywords – **JavaScript, AngularJS, React, Vue JS, Node JS.**

I. INTRODUCTION

The most popular programming language for the browser today is JavaScript. Due to the plethora of applications that JavaScript serves and the variety of programming needs. JavaScript framework has been developed in order to facilitate the work of web programmers [2]. is the programming language for web technologies to make the web pages more dynamic and alive. The programme written in the JavaScript is called script and the script is executed in the browser engines.

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JavaScript is a scripting language which follow the object-oriented concepts and must important is its a cross-platform language.There are additionally further developed server-side adaptations of JavaScript, for example, Node.js, which permit you to add more usefulness to a site than just downloading records. JavaScript can be connected to the objects of its environment to provide programmatic control over them.

Client-side extends the core functionality of JavaScript by supplying the objects to control a browser window and its document object model. using Objects or DOM we can access or change the HTML form and also respond to the user events like clicks and page navigation. JavaScript can be used at Server-side also by using objects relevant to server. server-side extensions allow the JavaScript to interact with databases or perform file manipulations on a server.

JavaScript can change the way the webpage looks. And, likewise, Node.js JavaScript on the server can respond to custom requests from code written in the browser.There is additionally different sort of systems that are created throughout the years dependent on the JavaScript. The history starts with DHTML in 2000 which encourages engineers to make their HTML Dynamic and afterward the framework series start and gave some of the famous JavaScript frameworks known as Angular, React, Vue. And librarynamedjQuery.

Library - A collection of functions which are useful when writing web apps. Your code is in charge and it calls into the library when it sees fit. E.g., j Query. Framework - A particular implementation of a web application, where your code fills in the details. The framework is in charge and it calls into your code when it needs something app specific. E.g., Angular.

II.   JAVASCRIPT FRAMEWORKS

1.   React:

Introduction:

React is a declarative, efficient, and flexible JavaScript library for building user interfaces. It lets you compose complex UIs from small and secluded pieces of code called "components".

2.   Brief History:

React was released in 2013 by Facebook. It is mostly used in high traffic websites. It was created when Facebook promotions began picking up traffic and confronted issues in their coding and support which delineated certain issues. Its latest version, 16.8.6 was released on 6 May'2019. They were resolved with the release of this library of JavaScript. WhatsApp, Instagram, Glassdoor, BBC are some of the popular companies usingReact. It is highly dynamic and offers great support in creating interactive user interfaces.

3.Features

Currently, ReactJS gaining quick popularity as the best JavaScript framework among web developers. It is playing an essential role in the front-end ecosystem. The important features of ReactJS are as following.

JSX
Components
One-way Data Binding
Virtual DOM
Simplicity
Performance

4. Vue:

4.1 Introduction:

Vue.js is an open-source Model–viewJavaScript framework for building user interfaces and single-page applications. It was created by Evan You, and is maintained by him and the rest of the active core team members coming from various companies such as Netlify and Netguru.

4.2 Brief History:

A dynamic JavaScript framework released in 2014 and created by no huge name like React and Angular. Actually, it was made by an ex-engineer of Google, Evan You. It is increasing consistent fame. Its most recent rendition; Version 2.6.10 was released on 20 March 2019. It is the most youthful individual from the group of JavaScript framework. It has for all intents and purposes expelled the downsides of different framework to offer simplicity of next level to programming designers. Sites like GitLab and Alibaba are utilizing Vue.

4.3 Features

- Virtual DOM
- Data Binding
- Components
- Event Handling
- Animation/Transition
- Computed Properties
- Templates

- Directives

5. Angular:

5.1 Introduction:

AngularJS is a structural framework for dynamic web apps. It lets you use HTML as your template language and lets you extend HTML's syntax to express your application's components clearly and succinctly. AngularJS's data binding and dependency injection eliminate much of the code you would otherwise have to write. And it all happens within the browser, making it an ideal partner with any server technology. AngularJS is the thing that HTML would have been, had it been intended for applications. HTML is an incredible explanatory language for static documents.

5.2 Brief History:

Released in 2010 by Google. It is a typescript-basedJavaScript framework. It was released prior to the other two JavaScript frameworks. Today it is called Angular but before 2016 there was a suffix 'JS' to its name.JS was dropped from its name after the release of Angular 2+. On 28 May'2019, its latest version, Angular 8.0.0 was released. Google and Wix are among the most popular companies using Angular.

The rise of React and Vue never forces to pull off Angular. While it's true that it doesn't have the same momentum as React, it does have a few powerful factors going for it. One cannot ignore the fact that Angular still has a vast user base. But the conclusion is: Angular is not trying to fight to React head-to-head anymore, instead refocusing itself on the enterprise market.

III. SUMMARY

1. Stat according to the stack overflow survey, React.js is the most loved framework, followed by Vue.js.
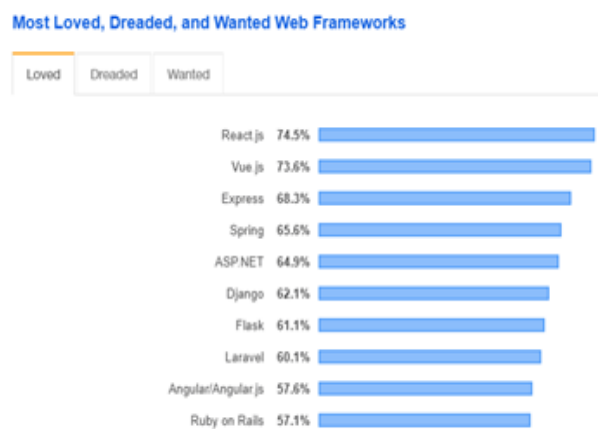

Fig.1. React Is More Popular According To Stack Overflow Statistics And Google Trends.

2. Stat Below is a graphical illustration of thenpm trends for the downloads and stars of Angular vs react vs Vue. It clearly shows React on top, followed by angular and then Vue. But when we look at the stars, the lowest goes to angular and highest to Vue, followed by react.

Fig.2. Downloads Of React, Angular And Vue In Past 6 Months Compairision.

3. Angular vs React vs Vue: Learning curve
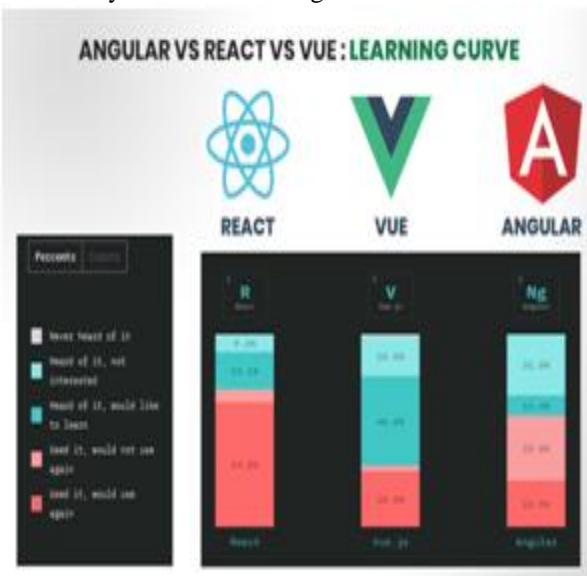React is most chosen by developers to use and learn, followed by Vue and then Angular.

Fig.3. Here Are Their Parameters And The Result Of The Votes By Developers Are Represented In The Graph.

Vue got the maximum votes for the option of "heard of it, would like to learn." it clearly shows a bright learning curve for this library of JS in future. Along with this, the graph is a crystal representation of fading popularity of Angular.

IV. CONCLUSION

The evolution of the JavaScript and Its frameworks is the never-ending journey with the new updates in JavaScript every year and the release of new improved frameworks to overcome the existing developers' issues.There are several famous JavaScriptframeworks exist and the choice of specific frameworks is depending on the user requirements but the React is most famous out of all followed by Angular and Vue.

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