Web technology: Which technologies are better in 2018

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I. Abstract

Web technology of now a days is taught as the most popular technology among developer. But after after passing about 25 years there is a lot of old and new web technology in front of us. All technol1ogy may make us confusion actually which technology we should learn and which one will be good in 2018. So the most common problem as a new web developer is that what should we learn or in which technology we should be expert in this modern era. In this paper we will try to figure out this problem.[1]

II. INTRODUCTION

In the past few decades, web technology has undergone a dramatic transition, from a few marked up web pages to the ability to do very specific work on a network without interruption. Hypertext Markup Language (HTML) is the standard markup language for creating web pages and web applications. 1993, HTML was released. HTML was originally developed by Tim Berners-Lee while at CERN, and popularized by the Mosaic browser developed at NCSA[2]

HTML is the first standard web technology. Then web technology started its journey. Then 25 years has already passed and so many popular web technology has invented. First web pages were simple static. There was no interesting feature on them. Then after thinking about different kinds of people dynamic web technology was released. Again to eliminate time and complexity of developing web different kinds of technology was invented and thus a huge type of technology is in front of us. If we want to move to web development we have to face a problem of selecting some of those. Of course a man cant learn all of the technology. So best selection will be effective for a beginner of a developer. But developer must need to learn some common technology. Such as HTML, CSS, JAVASCRIPT etc. So we will try to ignore those technology in our paper.

Web services are software components that can be discovered and employed at runtime using the Internet[3]

The methods by which computers communicate with each other through the use of markup languages and multimedia packages is known as web technology.In the past few decades, web technology has undergone a dramatic transition, from a few marked up web pages to the ability to do very specific work on a network without interruption. Web development has two side i.e. front end technology and back end technology. Front-end web development, also known as client-side development is the practice of producing HTML, CSS and JavaScript for a website or Web Application so that a user can see and interact with them directly[4]

The user of the developed application can only see the front end of that application.If the front end of a web application look nice to see,the user will be interested to use that web application.But if the back end of the web application works perfectly but the front is very bad to see, the user won't be interested to use the web application.
Some of the common front end technologies are html, css, js etc. Now many front end web framework has released Bootstrap, Semantic UI, vue js, Angular js, React js etc. And the back end technology is the portion of the application that the user of the application dont see. Back end language are also known as server side language. It is responsible to interacting with front end and storing data in database or sending data to the front end service from database.
Back end language or server side language is very important for web application. A website may look amazing but if the back end service don't work perfectly, user will depressed to use the application.
Some server side language are Ruby, PHP, Java, .Net, Python etc. Like front end technology to eliminate complexity many kinds of web back end technology has also

1. Dave Raggett, Arnaud Le Hors, Ian Jacobs, et al., "HTML 4.01 Specification," *W3C recommendation* 24 (1999).
2. Ibid.
3. V Mashevskiy, "Front-End Web Development," 2017,
4. Robert J Robbins, "Database Fundamentals," *Johns Hopkins University, rrobbins@ gdb. org*, 1994,

released. Some of those are Ruby on Rail, Laravel, django etc.
Those of the above are not the all things that is needed for the development. There is needed database to manage the data.A database is a persistent, logically coherent collection of inherently meaningful data, relevant to some aspects of the real world.[5]
There is a lot of database services that can be used with web services. Some of popular database services are MySQL Community Server, Microsoft Access, Microsoft SQL Server Express, Oracle Express Edition etc.

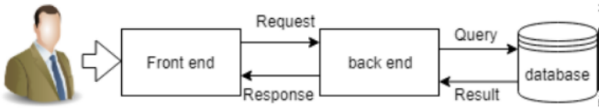

Figure 1. How Front end, Back end and database work

III. How do we compare web technology

Because of the fast growth of new web technology, it is hard to compare all the web technology. We will focus on the only technology what are the most popular in this modern era. What are less complex to learn and what is needed less time to evaluate will our main target. First of all front end web language will be compared. And then backend web language, database technology and last of all we will focus a little of front end and back end web framework.

IV. Front end web language

Front end web language are used to make the web application look good. Hyper Text Markup Language (HTML) and JavaScript are the front end web technology. All of the web application must need HTML and javascript . So as a web developer, everyone must need to learn those language. Only HTML will not make a website looking good. To make that good Cascading Style Sheets (CSS) is used so that the application would look good.

V. Back end web language

Back end web languages are used to store data and send data to the front end. This is also used to make a website dynamic. It is the most important part of any web application.
Now a days there are a lots of back end web languages. The most common back end web application are PHP, ASP.NET, JAVA, Ruby etc.

A survey of w3techs.com gives a survey of usage of server side language in percentage. i.e.

5. Akihiko Tozawa et al., "Copy-on-write in the PHP language," in *ACM SIGPLAN Notices*, vol. 44, 1 (ACM, 2009), 200–212.

1) PHP is used over 83.5% of website
2) ASP.NET is used over 13.3% of website
3) Java is used over 2.3% of website
4) Ruby is used over 0.5% of website

[More than one language might be used in a website]

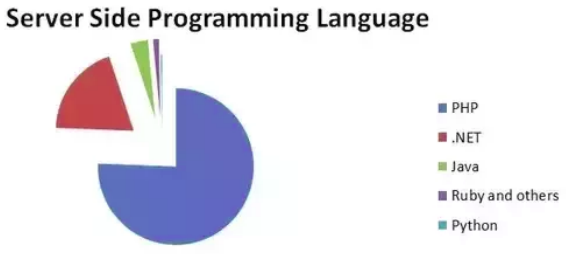

Figure 2. Server side language usage

From the above survey we can easily guess that now the most popular server side language is PHP. PHP is also easy to start.
PHP was first released in 1995, about 23 years ago. But PHP is still walking on the street of the market of server side language. Now a days the most popular CMS (Content Management System) is Wordpress and it is built by PHP.
There is also a lots of advantage in server side language PHP. Such as -
In contrast, a typical PHP implementation uses a copy-on-write scheme to reduce the copy overhead by delaying copies as much as possible[6] Another popular server side language is Python. Python is not only used for the web development. It has multiuse. For this reason Python is getting more popular day by day.

VI. Database

Database is a set of collection of data that has a huge of application. By database we can store data and use those data in our application. In web application database has a great importance. When a user of our application used to store his data in the server, we need to use database or when one want to see any information, server side language fetch the actual data from the database. Thus database has a huge use in web application development.

Many number of database technology is present in web application development. Some of common database technologies are MySQL, SQL Server, SQLite, PostgreSQL, MongoDB, Oracle etc. A survey on Stack Overflow Developer Survey 2017 gives a graphical. According to the survey –

1) MySQL is used by 55.6% developers

6. Ibid.

2) SQL Server is used by 38.6% developers
3) SQLite is used by 26.6% developers
4) PostgreSQL is used by 26.5% developers
5) MongoDB is used by 21.0% developers

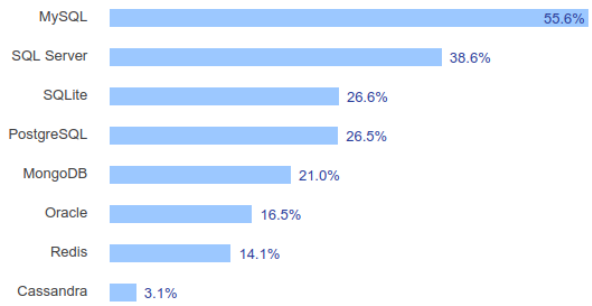

Figure 3. Stack Overflow Developer Survey 2018

From the survey we come to know that MySQL is now the most popular database technology. MySQL was released before 23 years ago in 23 May, 1995. The Queries of MySQL are easy to implement. And if we thought about the security of MySQL, It would be a great pleasure to know that security of MySQL is great. MySQL constantly released there updated version always. The last version they released in 19 April 2018. Thus it is easy to understand that they always concern about their client flexibility and always think about the security purpose.

VII. Front end web framework

Framework is used to eliminate the complexity of a language. It make the development easy and also reduces the time. In a group project framework is a needed think. Front end web framework is also does the same thinks.

A lots of front end web framework is available in this time. jQuery, React, Angular, Vue.js etc. are now most popular front end web framework. Recently freeCodeCamp make a survey on front end web framework. that survey gives a statistical view of front end web framework. On there –

1) jQuery gets 70.25% vote
2) React gets 36.91% vote
3) Angular 1 gets 25.10% vote
4) Lodash gets 31.77% vote
5) Vue.js gets 9.35% vote

jQuery gets the top numbers of vote on that survey that prove it the most popular front end framework. jQuery framework is made of JavaScript. It has a lots of functionality that's are amazing to use and also flexible.

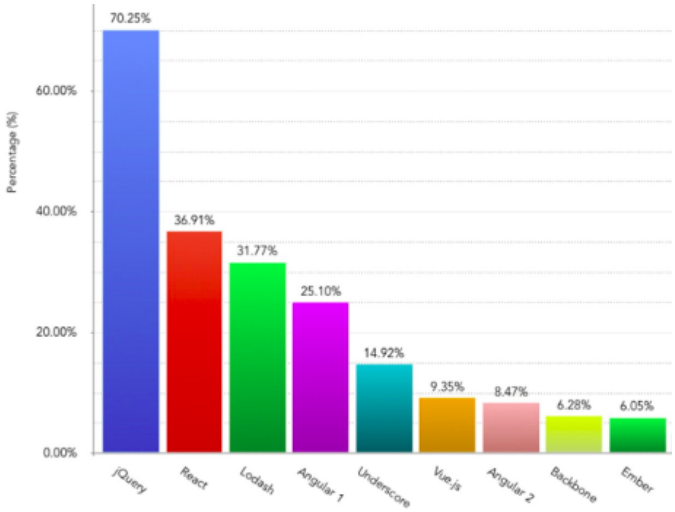

Figure 4. Results from question 13 of the 2016 survey showing the front end frameworks used most frequently by developers

VIII. Back end web framework

Like front end web framework backend framework also reduces the time and complexity of a back end developer. To make a web application more dynamic back end web framework help us a lots.
Now many new back end web framework comes and go very fast. But from those there has some more framework that are not only still alive but also getting popular day by day. But because of the changing characteristics of popularity in back end framework. It is very hard to say a framework best. But now the most popular back end web frameworks are Laravel, django, symphony etc.
Laravel is the framework that is developed by PHP. It is one of the most popular back end web framework.

In back end web framework some points need to consider. Those are-

1) Speed
2) Ease-of-use
3) Documentation
4) Community

Above of those ease-of-use and community are the most important of all. If a framework be fast but very complex to know,There is no need of that framework. Again if a framework be very fast and its documentation is good but its community is very poor, Of course the learner must have to face a great problem. So community another most important think to consider.

A github gives score on back end web framework-

1) Laravel gets 92 points
2) Django gets 90 points
3) Ruby on Rails gets 91 points
4) CakePHP gets 77 points

5) Dropwizard gets 76 points
6) Bottle gets 74 points
7) Symphony gets 84 points

From above survey, we can say that Laravel is now the most popular back end web framework, its community is also big. Laravel is a user friendly framework, Easy to learn.

Laravel authority very rapidly updated there version. And for this reason the bug is resolved in previousversion. Laravel used MVC (Model View Controller). For those reason laravel is now one of the most popular back end web framework.
Laravel is more than just a framework: a whole ecosystem and toolset has been developed around it to make building PHP applications faster and more enjoyable.[7]

IX. IDE (Integrated development environment)

IDE or Integrated development environment is a software application that gives multi facilities to developer for development. It help a developer to make his development fast and correctly. IDE reduces the time of coding.One aim of the IDE is to reduce the configuration necessary to piece together multiple development utilities, instead providing the same set of capabilities as a cohesive unit. Reducing that setup time can increase developer productivity, in cases where learning to use the IDE is faster than manually integrating all of the individual tools
IDE is used on every kinds of application. Like others in web development IDE is also a important things to be discussed. Some of commonly used IDEs are Visual Studio, Notepad++, Sublime Text, Visual Studio Code,Atom etc. All of those are popular Integrated development environment(IDE). Stack overflow gives a rank of IDE according to there survey.

1) Visual Studio gets 38.8%
2) Notepad++ gets 34.3%
3) Sublime Text gets 31.4%
4) Visual Studio Code gets 24.0%
5) IntelliJ gets 23.0%
6) Atom gets 20.0%
7) Eclipse gets 20.0%

From that survey of Integrated development environment we easily say that Visual Studio is now the most popular IDE. Visual Studio is a product of Microsoft.It is mainly designed for developing computer application as well as web application.
Here point to be noted that IDE is not very much important to selected Visual Studio. Because every IDE is developed to help developer so that they can develop their program easily. Developer can choose any IDE of their wish.

7. Martin Bean, *Laravel 5 essentials* (Packt Publishing Ltd, 2015).

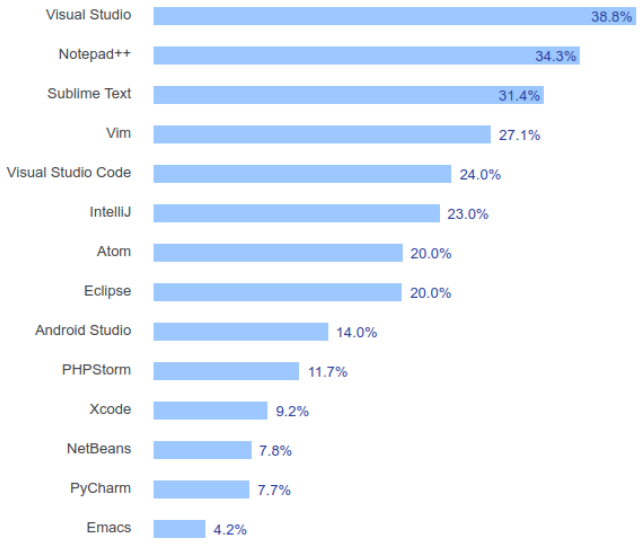

Figure 5. Most Popular Developer Environments

X. Conclusion

On the above paper, an assumption is proposed to the better technology in this time. In the period of writing this paper we have to face some of problem. There is a problem to collect primary data. Because it was really hard to collect data from direct web developer. For this reason we collect secondary data from some of website resource. But all the resource are verified. And Here might be a little change of those data.

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