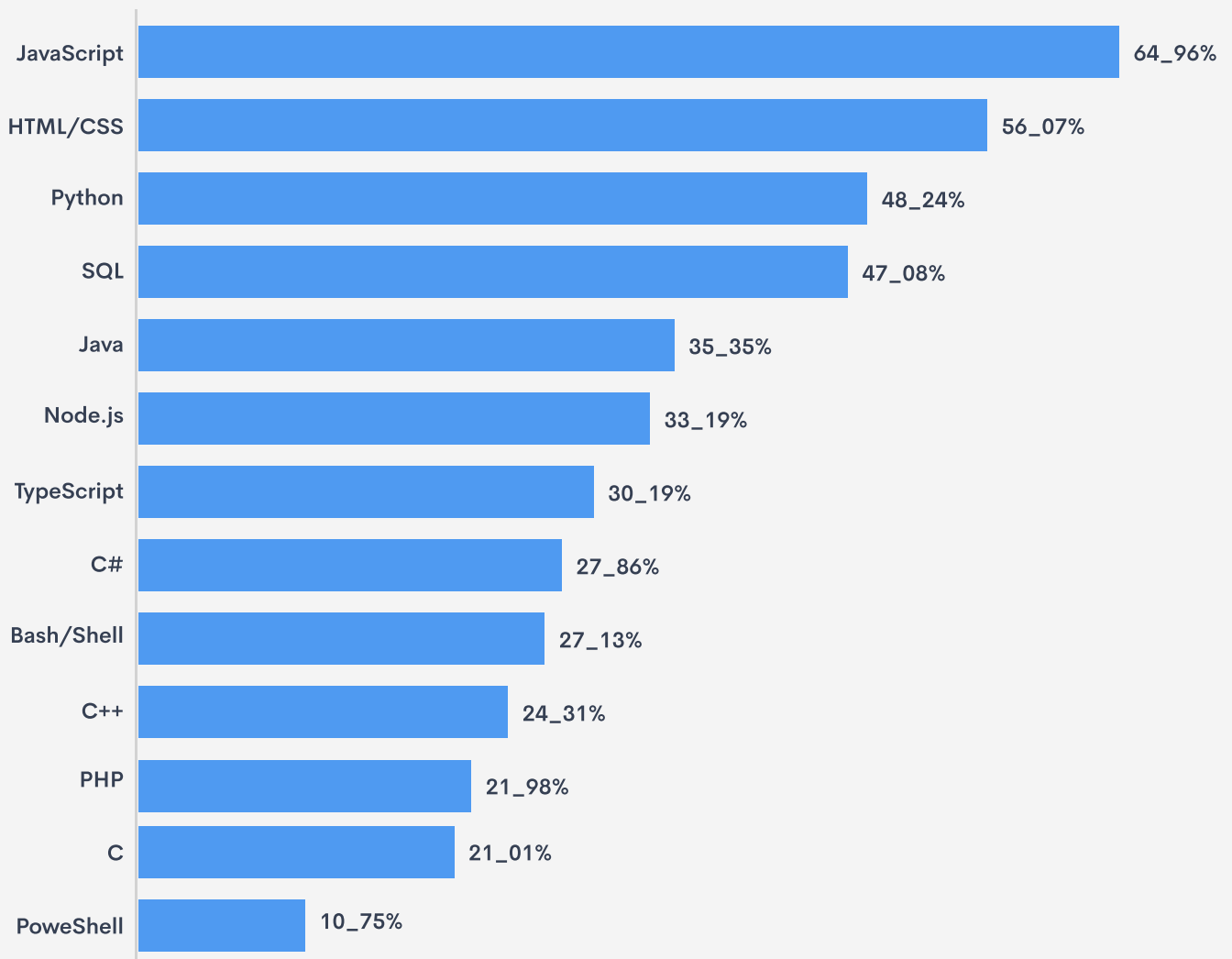


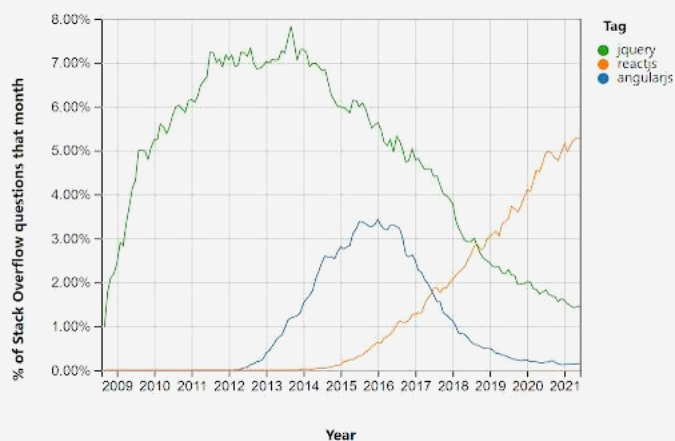
The Future of JavaScript: Development Trends and Predictions

JavaScript is a constantly evolving programming language. It accelerates the industry digitization and has completed the journey of becoming the backbone of various web applications in no time. From data analysis to machine learning, JavaScript is beautifully holding the future of a more advanced technical era.

Estimating 1.8 billion active websites globally with 95% use of JavaScript, supercharges its popularity. It acts as a client-side programming and encourages the ideas to remodel websites. With JavaScript, one can deal with the highest user engagement and unfold the new era of browser-based applications.



The JavaScript ecosystem continues to grow, and people are coming up with new ways of using it every day. As the language matures, we see more established libraries that make specific tasks more accessible than they were before. For example:



- React has been around us for a while now, but it continues to be one of the most used libraries for web development. The React ecosystem is also growing, with tools like Create-React-App that make getting started easier than ever before.
- Angular has been around since 2012 and continues to be a popular choice for building large single-page applications.
- Vue.js, on the other hand, is a smaller library that's gaining popularity for its simplicity and ease of use.

What Makes JavaScript So Popular?

The language has been around for long enough that it's matured into something people can rely on. Having an established and reliable library like React makes new developers feel confident in their choice because they know they're not wasting time.

Jan 2021	Jan 2020	Change	Programming Language	Ratings	Change
1	2		C	17.38%	+1.61%
2	1		Java	11.96%	-4.93%
3	3		Python	11.72%	+2.01%
4	4		C++	7.56%	+1.99%
5	5		C#	3.95%	-1.40%
6	6		Visual Basic	3.84%	-1.44%
7	7		JavaScript	2.20%	-0.25%
8	8		PHP	1.99%	-0.41%
9	18		R	1.90%	+1.10%
10	23		Groovy	1.84%	+1.23%
11	15		Assembly language	1.64%	+0.76%
12	10		SQL	1.61%	+0.10%
13	9		Swift	1.43%	-0.36%
14	14		Go	1.41%	+0.51%
15	11		Ruby	1.30%	+0.24%
16	20		MATLAB	1.15%	+0.41%
17	19		Perl	1.02%	+0.27%
18	13		Objective-C	1.00%	+0.07%
19	12		Delphi/Object Pascal	0.79%	-0.20%
20	16		Classic Visual Basic	0.79%	-0.04%

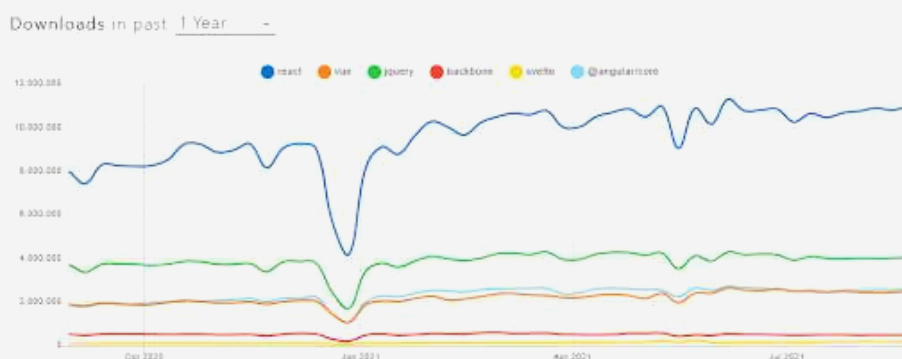
More in-depth insights on JavaScript Popularity are imaginable through the TIOBE Index. Like in 2020, JavaScript is still holding 7th position in 2021. Unsurprisingly, Stack Overflow reflected JavaScript as the most used programming language and maintained a stronghold in the market.

From calculators to gaming applications, JavaScript is everywhere and has become the first choice of developers. The rapid development in recent years highlights the transformation of Hypertext Markup Language(HTML)5 into a worldwide web consortium. It brings the frontend development to the front stage of internet history.

HTML5 brings innovations but has some limitations in performance and is worse than FLASH. However, the performance issues got rectified with the release of Chrome V8 in 2008, which redefined JavaScript's function to build a better user interface. The Chrome V8 JavaScript engine renders extraordinary speed, more than 56X faster than any version of Internet Explorer (IE).

JavaScript Frameworks & Libraries in E-Business Development

V8 engine's innovation provides many leading frontend frameworks and libraries for business development. To absorb the frontend developers' tendency on each frontend framework and library, refer to Github: the largest Git-repository hosting service worldwide.



The above image shows the number of downloads of JavaScript frameworks in 2021. For more insights, consider Stack Overflow trends to know the developers' choices for frontend development and dynamic websites.

ReactJS & React Native

To create a more engaging user interface in Facebook and Instagram, Facebook developed the React JavaScript library as JavaScript ES6 in 2013. However, in 2015, Facebook launched React Native to develop a mobile application with React under mobile operating systems Android and IOS.

React technology works on virtual Document Object models (DOM) and offers good rendering speed. With making huge changes in frontend development, this technology brings new standards in user-interface design and development as well.

Angular JavaScript

Approaching another framework uncovers the significance of Angular JavaScript ES5 based open-source frontend web application framework. Developed in 2010 by Google, Angular takes frontend history to move forward and allows developers to build more complex applications.

In Angular, the two-way data binding concept in web browsers reduces the back-end data processing responsibility in web servers. With optimization and integration of various features, Angular 2 accelerates mobile development. In Angular 2, it changes its language from JavaScript to TypeScript.

Vue.js

Vue.js processes the data in three sections: View, View Model, and Model. Vuejs developers use one-way binding with DOM to reflect the experience of two-way binding. While doing an in-depth analysis of frontend solutions, data binding acts as a prime key player.

An overview of the leading frameworks and libraries of frontend development will help in establishing the e-business and maximizing the user experience.

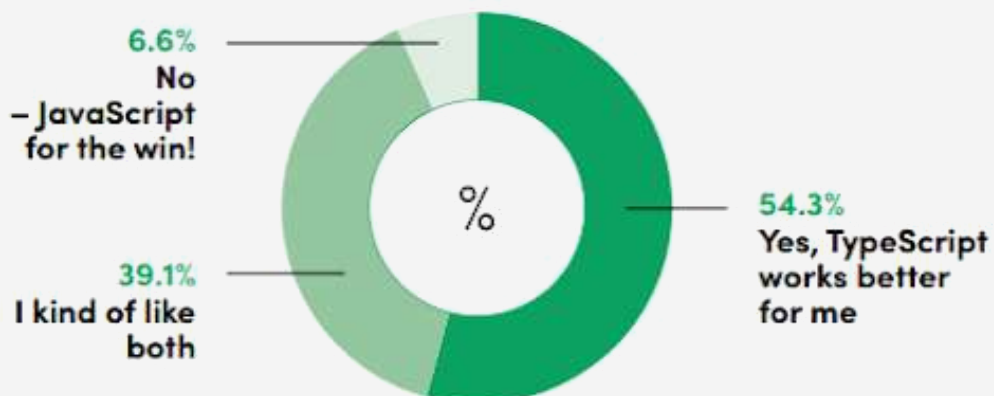
- React is best for social media and communication applications as it addresses the request for re-developing more customized features and fast rendering speed.
- Vue manages the small and medium web project requirements precisely.
- Handling complicated functions and advanced data processing methods for large-scale e-business solutions becomes effortless with Angular 2.

TypeScript: Superset of JavaScript

Bringing innovations and creation at the front face of the application is the main challenge of frontend developers. Their willingness to work on different frameworks is quite obvious. And, their search for next-generation frameworks leads to TypeScript. The Software House Report: "State of Frontend 2020" on what is the future of frontend development uncovers the growing importance of TypeScript. Their research revealed that 77.2% of developers used TypeScript during last year.

The completed survey report of 4500 experts peels the unseen side of

Do you like TypeScript better than JavaScript?



TypeScript. 54.3% of frontend developers found TypeScript better than JavaScript.

According to them, the facts about the future of TypeScript:

- 29.2% of developers feel that JavaScript will turn into something like TypeScript in some years.
- 26.6% of experts calculate the popularity of JavaScript and TypeScript on the same level in the future.

While visualizing the growth and complete scenarios of TypeScript, keep the thoughts of core TypeScript developer Anders Hejlsberg in your mind.

"Often the way TypeScript ends up being adopted – in enterprises and start-ups and individual developers – is that you try it on one project, and you say 'wow, this is great!' and then you start evangelizing, and it grows locally in your sphere of influence."

TypeScript comes under Microsoft's Sphere of Influence. Started by Microsoft, TypeScript is an open project to connect transpilers with static type checking and tooling to develop advanced JavaScript features. It makes the framework reach the height of popularity.

Predictions of JavaScript Development Trends

Market Growth of React

Data mirrors the comprehensive development trends that make React the king of frontend frameworks/libraries. The Stack Overflow trend shows the significant growth of React from 2014 to 2021. NPM Trends Curve reflected that 2,550,451 React downloads on July 25, 2021. It clears the blurred image of JavaScript framework market growth and sets new development trends for upcoming years.

JavaScript in Web Development

Would JavaScript be the new face of web development in upcoming years? Market research unlayers the ground reality and informs developers to make the right move.

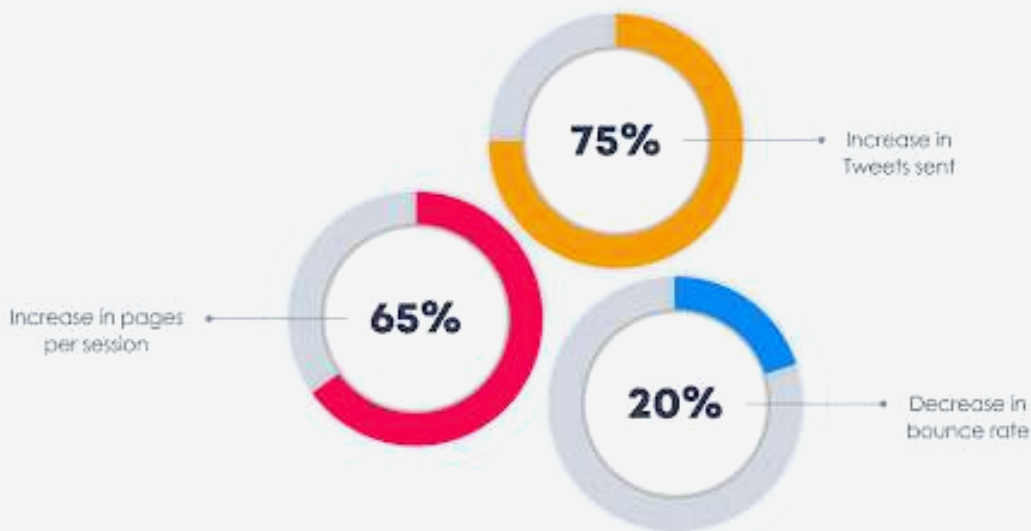
97.6% of all the websites reside on JavaScript as the client-side programming language. With easy interpretation, the programming language provides a dynamic look to websites. The recent development in website designing is possible with plug-ins such as Flash or Silverlight. The graphical elements integrate with HTML and are also part of the document object model (DOM). JavaScript can manipulate its styles.

Developers find a new JavaScript project that is launched every single day. The innovative changes in the JavaScript programming language help them to work on static pre-rendering, server-side rendering, and build-time rendering. In-Depth knowledge of JavaScript Frameworks accelerates website development. And progressive web apps are the milestones of effective web development.

Progressive Web Apps

Discussing the different aspects of technological advancement leads us to acknowledge the necessities of progressive web applications. To enhance the native app experience, Google has coined the term Progressive Web Apps to offer the combined impact of web and mobile apps.

- Progressive
- Responsive
- Installable
- No dependency on internet connectivity
- App-like appearance
- Fresh
- Safe
- Discoverable
- Re-engageable
- Linkable



For example; Twitter lite

"Twitter Lite is now the fastest, least expensive, and most reliable way to use Twitter. The web app rivals the performance of our native apps but requires less than 3% of the device storage space compared to Twitter for Android."

– Nicolas Gallagher, the Engineering Lead for Twitter Lite

If we talk about the market growth of web apps, signs of positive changes are easily visible. Market research report of Emergen Research anticipates the global progressive web application market will grow at a CAGR of 31.9%. It would reach USD 10.44 Billion by 2027 from USD 1.13 Billion in 2019.

Many bigger business players feel high user engagement and revenue growth using PWAs. While making a spot in a highly competitive world, every single move makes a difference.

You must know that taking more than 5 seconds to load a website can increase the bounce rate by 30%.

Without generating push notifications, you may feel complex in informing your audience.

So, progressive web apps act as impressive solutions to fight against today's modern issues.

Contribution of dedicated development Team

How to make your path clear for JavaScript development? Team unity and developers' technical expertise unfold the actual contribution of a dedicated development team.

A dedicated development team is a corporate model to accelerate the process of technology development. A dedicated team reflects talented and experienced software developers who transform every idea into practical reality.

Primary outsourcing business models:

- Dedicated Resources
- Fixed Price
- Time & Materials

Time & Material Vs. Fixed Price Vs. Dedicated Team			
	Time & Material	Fixed Price	Dedicated Team
Size of the project	Medium to Large	Small to Medium	Large
Timeframe & Budget Flexibility	Flexible	Fixed	Flexible
Client's control over the process	Significant	Little	Full
Development Methodology	Agile	Waterfall	Agile/Waterfall
Requirements	Changing	Defined	Evolving

In-depth research of your project requirements tells you to choose the best business model. ValueCoders dedicated development teams save up to 60% cost and time. Their journey of more than 16 years in technology development uncovers the success rates of various tasks and delivery of 4200+ projects.

Pros & Cons of using dedicated development team models

Pros	Cons
Easy to understand and implement	Issues in ownership from service providers
Help in retention of knowledge	No commitment from the customers in resources utilization from service providers
Effective in price comparison	Effective in price comparison Due to lack of career mentoring, level of motivation may be low
Flexible in using talents in different projects	Not closely related to customers' requirements
Risk is low for customers as well as service providers	No efficient incentive for service providers

While dealing with various project requirements or the need to develop JavaScript applications, consider the dedicated development team. Following the particular business model will let you hire NodeJS developers or hire React developers. Make the right approach using the most appropriate business models.

Conclusion:

JavaScript is a programming language that has been around us since 1995, and its popularity in the world of development continues to grow. It's one of the most popular languages because it offers something for everyone, from frontend web developers to machine learning engineers.

This language might be so popular because frameworks like NodeJS allow you to build end-to-end programs without worrying about browser incompatibility issues. This means you can use JavaScript on both your server-side code and client-side code (in other words, there's no need for two different languages). This language's community seems quite robust, with excellent documentation and tutorials available online and at conferences such as JSConf EU.

About ValueCoders

ValueCoders™ is a top-tier Indian software development company founded in 2004. With more than 450 developers, the company offers customized solutions to 2500+ customers and has an impressive 97% retention rate. With incredible opportunities for technological development tools, ValueCoders™ is committed to accelerating digitalization for businesses worldwide.

FAQs

Is it worth learning JavaScript in 2021?

Before making your mind for any programming language, make sure to perform insightful research and know its current status. Well, about JavaScript, it is the most preferred language by developers to work on front-end development. React, a JavaScript framework, is the most used framework for web development. In short, JavaScript is still in trend and worth learning for a promising career in development.

Is JavaScript easy to learn?

If compared with C++, Python, and Ruby, JavaScript is easy to learn and understand. JavaScript is a high-level and interpreted language, which is easy to embed with other languages such as HTML, CSS, and Java. Learning JavaScript basics is uncomplicated, but you have to pay much attention while moving deeper.

What is the difference between Java and JavaScript?

Java is an object-oriented programming language, whereas JavaScript is a scripting language. It would help if you had a virtual machine or browser to run Java applications, while codes of JavaScript are run on browsers only. Both Java and JavaScript require plug-ins, but Java code needs a compiler, and JavaScript code is text.

What are JavaScript trends to watch out for in 2021?

Not surprisingly, more than 70% of developers use the JavaScript programming language. In-depth knowledge of JavaScript will add value to your learning curve and help you develop more robust applications. JavaScript Trends unfolds a few wonderful facts:

- React Framework is the most used Framework, and React npm package has four times more downloads than Vue.js in 2020.
- The market of TypeScript is significantly growing since 2016 and acts as a superset of JavaScript.
- Facebook launched GraphQL is good for data management.
- Another framework gaining momentum is Svelte that sparked interest among developers.