Why is JavaScript such a pain to learn?

25 Answers

Mattias Petter Johansson, Developer at Spotify
32.4k Views • Mattias has 230+ answers and 36 endorsements in JavaScript (programming language).

The attitude expressed in this question is completely foreign to me. JavaScript is by far the easiest language I've had to learn.

A lot of answers here are grouping JavaScript together with a bunch of other technologies, such as HTTP, the DOM, CSS or HTML - technologies often (but far from always) used alongside JavaScript. I think a lot of people mistake JavaScript as hard because they are trying to learn a *massive* pile of technologies all at once, become confused, and blame JavaScript. The DOM (a concept completely different from JavaScript, mind you) is a horribly complex thing that takes years to master. But it's not JavaScript - if you were coding Dart in a browser, you'd still have the same problems with the DOM. Learn one or two things at a time, or you're going to have a problems, no matter what you're trying to learn.

JavaScript does have a few warts, and it's fun to poke at them (https://www.destroyallsoftware.c...). However, you must not use these warts as an excuse to dismiss JavaScript as hard to learn or complicated to work with, because they are easy to learn to avoid. If you look past the superficial problems, JavaScript is a very small and elegant language that can do almost anything. In it's latest iteration, it's pretty much a full-fledged functional programming language!

If you're *actually* having trouble learning it, you are probably using a bad resource. You should start by going through all the tutorials at)http://codeacademy.com and then pick up a copy of JavaScript: The Good Parts .

Neither of those should take you much time. Seriously. If you still find it hard after going through the two resources above, you're either new to programming in general, or you should reconsider if programming is really for you. JavaScript is, compared to almost all other languages, is *very* small and has pretty few rules to keep in mind. C++ is just enormous compared to it.

- Learn JavaScript separately, or you'll be confused.
- Give it a proper chance, don't learn it grudgingly, because you have to.
- Use good resources, Code Academy and JavaScript: The Good Parts.

Also, follow me, so that you don't miss out on my awesome JavaScript answers.

Written 22 Apr • View Upvotes

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Aberba Lawrence • Request Bio
12.7k Views

JavaScript as a language is not difficult to learn. The problem is that, few people who code JavaScript understand how JavaScript really works and behave behind the scene. A lot of people (even those who claim to have years of experience) write very bad and inefficient JavaScript code (because JavaScript does not prevent you from doing the wrong thing).

Most at time they bring what they have learnt from other programming languages into JavaScript and they think it is OK because it works. However, despite JavaScript similarity to c-like programming languages, it behaves different in most cases due to its design and implementation (coercion, precedence, scope, ... (if you do not understand any of these, then you have a lot to learn before you consider yourself a JavaScript programmer).
It is sad that most courses or books ignore these important details. Others may argue that such details are for advanced users, but how many of us master a programming language before we write code into the real-world?

Again, what most books(if not all that are out there) call JavaScript programming, is not entirely true. Imaging teaching about DOM, Ajax, templating, jQuery, and the like and calling it "JavaScript programming". This is so wrong because JavaScript as a programming language has nothing to do with any of those above. JavaScript is the plain ECMAScript and nothing else. The browser environment is an implementation of JavaScript on the client-side.

If you want to learn JavaScript, try to understand and don't imitate what people do. Javascript: Understanding the Weird Parts - Udemy (the best resource I have ever come across). They even have a tree hour sample on youtube.

Finality, just accept the fact that JavaScript is different from the others :)

Written 7 Aug • View Upvotes

Harish Oraon, FullStack Developer @ The Hindu Group

751 Views

Javascript offers a different taste.More information on ES6 - ECMAScript 2015 Language Specification

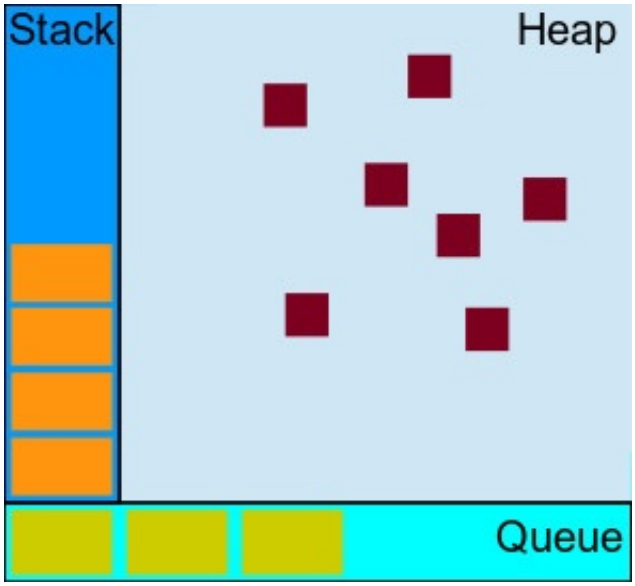
Why Javascript is a pain, for instance see this runtime concept in JS.

> JavaScript has a concurrency model based on an "event loop". This model is quite different than the model in other languages like C or Java.

Runtime concepts

The following sections explain a theoretical model. Modern JavaScript engines implement and optimize heavily the described semantics.

Visual representation



Stack

Function calls form a stack of *frames*.

```
1 function f(b){
2  var a = 12;
3   return a+b+35;
4 }
5 function g(x){
6   var m = 4;
7 return f(m*x);}g(21);
```

When calling g, a first frame is created containing g arguments and local variables. When gcalls f, a second frame is created and pushed on top of the first one containing f arguments and local variables. When f returns, the top frame element is popped out of the stack (leaving only g call frame). When g returns, the stack is empty.

Heap

Objects are allocated in a heap which is just a name to denote a large mostly unstructured region of memory.

Queue

A JavaScript runtime contains a message queue, which is a list of messages to be processed. To each message is associated a function. When the stack is empty, a message is taken out of the queue and processed. The processing consists of calling the associated function (and thus creating an initial stack frame). The message processing ends when the stack becomes empty again.

Event loop

The event loop got its name because of how it's usually implemented, which usually resembles:
while(queue.waitForMessage()){ queue.processNextMessage();}
queue.waitForMessage waits synchronously for a message to arrive if there is none currently.

"Run-to-completion"

Each message is processed completely before any other message is processed. This offers some nice properties when reasoning about your program, including the fact that whenever a function runs, it cannot be pre-empted and will run entirely before any other code runs (and can modify data the function manipulates). This differs from C, for instance, where if a function runs in a thread, it can be stopped at any point to run some other code in another thread.
A downside of this model is that if a message takes too long to complete, the web application is unable to process user interactions like click or scroll. The browser mitigates this with the "a script is taking too long to run" dialog. A good practice to follow is to make message processing short and if possible cut down one message into several messages.

Adding messages

In web browsers, messages are added any time an event occurs and there is an event listener attached to it. If there is no listener, the event is lost. So a click on an element with a click event handler will add a message--likewise with any other event.
Calling setTimeout will add a message to the queue after the time passed as second argument. If there is no other message in the queue, the message is processed right away; however, if there are messages, the setTimeout message will have to wait for other messages to be processed. For that reason the second argument indicates a minimum time and not a guaranteed time.

Several Runtime communicating together

A web worker or a cross-origin iframe has its own stack, heap, and message queue. Two distinct runtimes can only communicate through sending messages via the postMessage method. This method adds a message to the other runtime if the latter listens to messageevents.

Never blocking

A very interesting property of the event loop model is that JavaScript, unlike a lot of other languages, never blocks. Handling I/O is typically performed via events and callbacks, so when the application is waiting for an IndexedDB query to return or an XHR request to return, it can still process other things like user input.

Legacy exceptions exist like alert or synchronous XHR, but it is considered as a good practice to avoid them. Beware, exceptions to the exception do exist (but are usually implementation bugs rather than anything else).

Source : Concurrency model and Event Loop

Written 10 Aug • View Upvotes

Eduardo Xavier, I've got very specials skills!
1.1k Views

You're misguided.

JavaScript is a simple and flexible language. With css3 and html5 as frameworks it became the most wanted language of the moment. Everything runs on the web and the Web is JavaScript, css and html.

This successful language for UI became successful for the server side with Node. Also with node-webkit you can deploy web application with all aspect of the desktop application. Grunt makes lots of tasks easier.

Software written in JavaScript can became a mess like any other else. Languages like c# and java requires you to write classes. JavaScript don't require that. So people get confused with aspect of organizing code.
But, most people who hate JavaScript came out from desktop world. They use to develop on Java, C++, VB6, etc.

That's why Microsoft released The Official Microsoft ASP.NET Site with a promesse: to keep desktop experencice for the web. It worked for while now people give up.

I'm not saying that everything sould run on Javascript. I use C# for server side language. C# has many advantages over JavaScript for certain jobs.

I recommend the following:

JavaScript: The Good Parts: Douglas Crockford: 9780596517748: Amazon.com: Books - to actually learn the language (no dom, no frameworks, just the language). I know this language since 1998.

JavaScript: The Definitive Guide: Activate Your Web Pages (Definitive Guides): David Flanagan: 8580001053509: Amazon.com: Books - you can understand the power of javascript, DOM and many other things

Speaking JavaScript: An In-Depth Guide for Programmers: Axel Rauschmayer: 9781449365035: Amazon.com: Books - more tricks, more tools, more frameworks to help you out!

And of course, really important: Debugging JavaScript

Written 21 Apr • View Upvotes

Martin Ceronio, SAP ABAP Developer since 1997, wannabe Rubyist, trying to find a use for Rebo...
1.3k Views

It could be because:

- Javascript is so widespread and ubiquitous that there is no central go-to community or place to learn it as there are with many other languages (take Python or Ruby, for example). Javascript, by contrast, is embodied more in a specification than a specific implementation.
- Moreover, Javascript, unless you are learning it on the server side, does not live in isolation. To learn Javascript as most people do, in the browser, you need to understand a whole lot of other concepts: HTML, the DOM etc.
- Due to different browser implementations of Javascript, there are many nuances that lead to cross-browser issues. These are normally taken care of in most libraries, but can still cause headaches if you are learning it.
- If you want to be productive in Javascript, you need to make use of one or more libraries, for which you have to learn their specific way of doing things.

Another aspect which just occurred to me is that if you are learning object oriented programming in Javascript, it may be very different to what you are used to. Javascript is prototype-based language (Lua is another one, if you want to take a look), and while it provides the capabilities for object-oriented programming, the constructs are very different. For a good introduction, read the following: Introduction to Object-Oriented JavaScript

Written 29 Apr • View Upvotes

Dathan Ault-McCoy, CS, Particle Physics and Mathematics
1.3k Views

I would like to know why (and I presume that you do, given your question) find JavaScript hard to learn. I wouldn't go as far as to say that it is the easiest to learn I have encountered, but it felt relatively straight-forward to me. Without any knowledge other than that which you have given me, I would guess that the issue is one of the following:

- You come from a weakly- or duck-typed language such as Perl or Python. In this case, the issue is simply learning a new paradigm, and in my opinion JavaScript is an excellent language to learn strong-typing.
- You come strictly from a C or Java environment and are expecting it to be identical to one of those

languages. If this is true, than you just need to understand the language a bit better. Despite the syntax and a *few* of the paradigms that JavaScript shares with Java, it is probably actually closer to one of the "scripting languages" listed above.

- You have JavaScript tied too closely with its web-based heritage. JavaScript as a language does not have to deal with HTML, CSS, DOM or any other exclusively web-based concepts. That it often is does not change that fact. Learn JavaScript as a *language* first.
- You are using bad learning resources. This is by far the most likely scenario. I am not oozing with excellent JavaScript learning material, so you will have to look to other answers for that, but I would second Mattias' suggestion of the Code Academy course if you are looking for a very low level but still comprehensive introduction.

I also want to repeat what many other's have already said. *Give it a chance*.JavaScript is unique is several ways which sometimes take a slightly new way of thinking, so try not to get too caught up in what you've already learned in other languages; not all of it will apply.

(Thanks for the A2A)

Written 25 Apr • View Upvotes

Sam Williams • Request Bio
1.2k Views

Learning JavaScript is a multi prong problem.

1. You have to learn the imperative part
2. You then have to learn the objective part
3. You then have to learn the DOM
4. Then you have to learn technique on how to manipulate DOM with it.
5. Then there are compatibility issues since it runs in a browser and different browsers have different rules of JavaScript and even DOM.
5. And now a days, there are thing like AJAX and JQuery that have been built using JavaScript

So there is just lots to learn. But if you tackle each topic, you can learn it in a few days to a couple of weeks of study.

It's really no harder then any other programming language.

Written 21 Apr • View Upvotes

Robert Polevoi • Request Bio
602 Views

The questioner has not made clear whether he/she already knows how to code in one or more other languages and is now adding JS, or whether he/she is learning programming from the start using JS. If the latter, a great many of the answers given are not useful. As someone who has followed a classic C to C++ to Java to JavaScript route over many years, I can well understand the view that JS can paradoxically be both "easy" and "difficult." Easy to get started in because of the freedom and the means to achieve relatively simple goals without a lot of brain drain, but difficult to master some slippery fundamental concepts once you get deeper. And of course, JS is web development, not general programming, meaning that there is the huge context issue of the browser (DOM, html, front-end/back-end, css, etc)

But as to "pain." JS, like everything in coding, yields to hard, concentrated work, that many people simply are not suited for or greatly underestimate.

Written 24 Apr

Tarun Chaudhary, Done JS and still doing it
311 Views

First of all its not a pain to learn. The thing is you should learn JavaScript in a correct way. Your path of learning should be correct. If you directly jump into developing applications (as I did ;)) then you will find it really painful because everything is different in this language.
I recommend you to start with JavaScript the good parts by Douglas Crockford and watch his 8 videos series.
Links are shared below:-
Book:- JavaScript: The Good Parts
Video series:-

After doing all these, You will feel delight while coding in JS.

Written 22 Apr

Val Paliy, @ValPaliy anywhere. I stay in the know.

715 Views

I agree with Mattias Petter Johansson - JavaScript is to be learnt alone. All the other stuff can be tied in later on. If you don't like JS, give Dart a try - it can be compiled into JS code, and is a pleasure to learn, IMHO: Structured web apps

Written 22 Apr • View Upvotes

Robert Barry • Request Bio
687 Views

It's true that basic JavaScript is pretty easy. Variables, control statements, and loops are written like any other C type language. Functions, for the most part, are easy to understand as well. However, objects is where JavaScript tends to trip people up.

There are a few reasons for this. Objects can be created in multiple ways, objects have no classes in JavaScript but you can create private properties with closures, the prototype chain, etc. These thing make JavaScript unique. This is before you even get into the DOM and libraries like JQuery that are everywhere today.

Unfortuantely, there aren't any great resources that bridge the gap between the basics and th complexities of JavaScript. Many will recommend Douglas Crockford, who knows what he is talking about, but I find him to be contradictory and opinionated, and not at all easy for an a person just beginning.

My suggestion is to get comfortable with the basics of JavaScript and get pretty good with using functions. Then begin addng in some simple objects. From there, get to know how scope operates in JavaScript before tackling closures and prototypes.

Written 26 Apr • View Upvotes

Anita Pillai • Request Bio
569 Views

Javascript is definitely not a pain to learn if you have the right resources. It is a beautiful language and a joy to program in. I think the problem lies with everyone recommending learning JS by reading the Good Parts. I agree the Good Parts is a beautiful book and an essential read, but it definitely should not be the first nor the second book you should be reading on JS.

Start of with the javascript course at "Learn to Code by Doing - Code School ." It will teach you everything to get your feet wet in JS. Then read the book "Professional JavaScript for Web Developers", this should give you a complete understanding of JS. But it does not do a very good job on the OOP part of JS. For OOP I would recommend skimming through the book "Object-Oriented JavaScript" and finally finish off with The Good Parts.

Other resources that I have found personally useful are JavaScript is Sexy

and Patterns For Large-Scale JavaScript Application Architecture

Happy learning!

Written 23 Apr • View Upvotes

Roger Walsh, Father, Husband, Web Developer, Graphic Designer and Photographer in that order!
420 Views

Honestly, as someone who failed Math remedial level at high school and has come from a print background, JavaScript is by far the easiest of all the languages.

My progression from Print to web was:

CSS (was similar to Quark Xpress style sheets so made sense from the get go)
HTML
Javascript

While learning one I disregarded the others even though all three complement one another.

Written 1 May

Nate Balcom, Interactive Developer / Modeler
599 Views

I'm in the same boat. Without any formal training you are left to searching forums and boards. Another problem is not knowing the terminology so it's hard to format questions in a way that commenters understand what you're asking. Also these boards are filled with geek bravado. I find more often than when I ask a question on Stack Overflow my questions are answered with further questions.

Written 21 Apr • View Upvotes

Stefan Polexe • Request Bio
418 Views

console.log("Learning JS is easy, learning how to use it properly is the tricky part:) ");

consider=
{callbackHell :[Callback, Hell Promises] ,
garbageCollection:[Memory Management],
betterCode: [Strict mode],
toConsiderFunctions:[call,bind,apply,map,reduce,filer,forEach,etc],
courses:[JavaScript - Code School]
};

Written 11 Aug • View Upvotes

Quora User, Father and brother were excellent EE's. I I worked as an EE for a year and fool
1.1k Views

It's a royal pain because it's the utmost of loosey-goosey languages to start with, and it has to try play nice with far worse languages, like HTML, HTTP, AJAX, XML, CSS, and the like.

And the original designer and implementor had 10 days, really, 10 days to design and implement and ship it. They did an excellent coding job given that constraint. I would have come up with something like a cramped version of BASIC. At least JavaScript is flexible.

Written 21 Apr • View Upvotes

Della John • Request Bio
363 Views

This study guide, which I also refer to as a *course outline* and a *road map*, gives you a structured and instructive outline for learning JavaScript properly. In fact, you will find two study guides below, one for absolute beginners and the other for experienced programmers and web developers.
You do want to learn JavaScript. I presume you are here for that reason, and you have made a wise decision. For if you want to develop modern websites and web applications (including an internet startup), or if you want a high-paying developer job ($75K to $250K+), JavaScript is undoubtedly the best web-development language to learn today, unless you want to develop native iOS or Android apps exclusively. And while there exist ample online resources to teach you JavaScript, finding the most efficient and beneficial method to learn the “language of the web” can be a frustrating endeavor. This study guide streamlines and simplifies the process; it has proven successful in helping thousands, and thousands more read and follow it each day.http://www.simpalm.com

Written 4 Aug

Vince Jacobs, Survivor and veteran of the software industry. Manchester United supporter.
565 Views

I hate JS ... so much so that I have never really learned it properly, to the point where I would rather use JQuery, CoffeeScript .... anything other than raw JS.

Why is it a pain?? Because, to me, unlike any of the "industrial languages" (C++, C#, PHP, Java) it's rules are very, very fluid .. plus the data that it manipulates (eg the DOM) is also quite obtuse.

Written 21 Apr • View Upvotes

Torgeir Helgevold, Software Engineer
840 Views

I don't think JavaScript is any harder to learn than other languages. There may be a few unexpected features in JavaScript, but the 80% use case is fairly streamlined. The syntax should also be familiar to anyone coming from language with C-based syntax.

Written 22 Apr • View Upvotes

Anonymous
498 Views

The documentation is poor which makes it diffcult to learn. There are not many good code examples which show the effects and side-effects. Mostly the ones shown have very trivial examples

Written 21 Apr • View Upvotes

Gratski Ahn, do it simple.
126 Views

First of all I would like to know why do think Javascript is hard to learn.
If have no time to read before code, javascript isn't the only programming language you'll find hard to learn.
Programming is about developing solutions.
If a writer doesn't know nothing about grammar can he/she write a book by his/her own?
Answer: Ofc not!
Try to read, and if don't understand a thing, read again.

Written 6 May

Sai Vishnu Vippagunta, Web Developer, YUI Expert
406 Views

If you know C, you know most of JS except for data types and design patterns.

It took me 15days to get expertise in JS. Note that I worked for 15hours a day for the same.

Learn it by doing it. Understand DOM. If and only if you understand DOM you can understand JS

Written 24 Apr • View Upvotes • Asked to answer by Gayatri Sravya

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Hicham Mounadi, Simple programmer and i have my own stuffs
361 Views

JavaScript is a simple and flexible language.
As you read i said simple not easy it's about coding, solving and enhance existing code with new technics and skills.

Written 22 Apr

Quora User, I write code for a living
590 Views

It is not.

It takes a bit of a patience to start with it, but once on track it all feels easy.

Even I had the similar feeling while starting with JQuery, but it actually made JS a lot more readable and easier!

Written 21 Apr • View Upvotes

Ankush Thakur, Programmer
399 Views

Because it's primarily a function-first language, which is very different from the C/C++ family of languages.

Written 21 Apr