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BONAFIDE CERTIFICATE

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Submitted for the **WEB TECHNOLOGY-1** assessment held on _____.

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Research Document

Web Technology

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WHAT IS WEB TECHNOLOGY?

You have probably heard the term "web development technologies" before, but did you ever think about what it actually means?

Since computers can't communicate with each other the way people do, they require codes instead. Web technologies are the markup languages and multimedia packages computers use to communicate.

1. Browsers

Browsers request information and then they show us in the way we can understand. Think of them as the interpreters of the web. Here are the most popular ones: Google Chrome – Currently, the most popular browser brought to you by Google Safari – Apple's web browser Firefox – Open-source browser supported by the Mozilla Foundation Internet Explorer – Microsoft's browser

2. HTML & CSS

HTML is one of the ones you should learn first. Thanks to HTML, the web browsers know what to show once they receive the request. If you want to better understand how HTML works, you also need to know what CSS is. CSS stands for Cascading Style Sheets and it describes how HTML elements are to be displayed on the screen. If you're a complete beginner, this Essential HTML & CSS training by James Williamson will help you to quickly get started with these technologies.

3. Web Development Frameworks

Web development frameworks are a starting point of items that a developer can use to avoid doing the simple or mundane tasks, and instead, get right to work.

Angular

(Fig. Web Development Frameworks Angular)

Angular is one of the latest web technologies designed specifically for developing dynamic web applications. With this framework, you can easily create front-end based applications without needing to use other frameworks or plugins. The features include well-made templates, MVC architecture, code generation, code splitting, etc. All the expressions are like code snippets that enclosed within curly braces and do not use any loops or conditional statements. If you would like to start using Angular or to just quickly evaluate if this framework would be the right solution for your projects, you can check out this 3-hour training, published in June 2019 by Justin Schwartzenberger, a Google Developer Expert. This course covers everything that's necessary to start using Angular, from basic architecture, work with DOM, data binding, routing, and components, to more advanced topics such as directives and pipes.
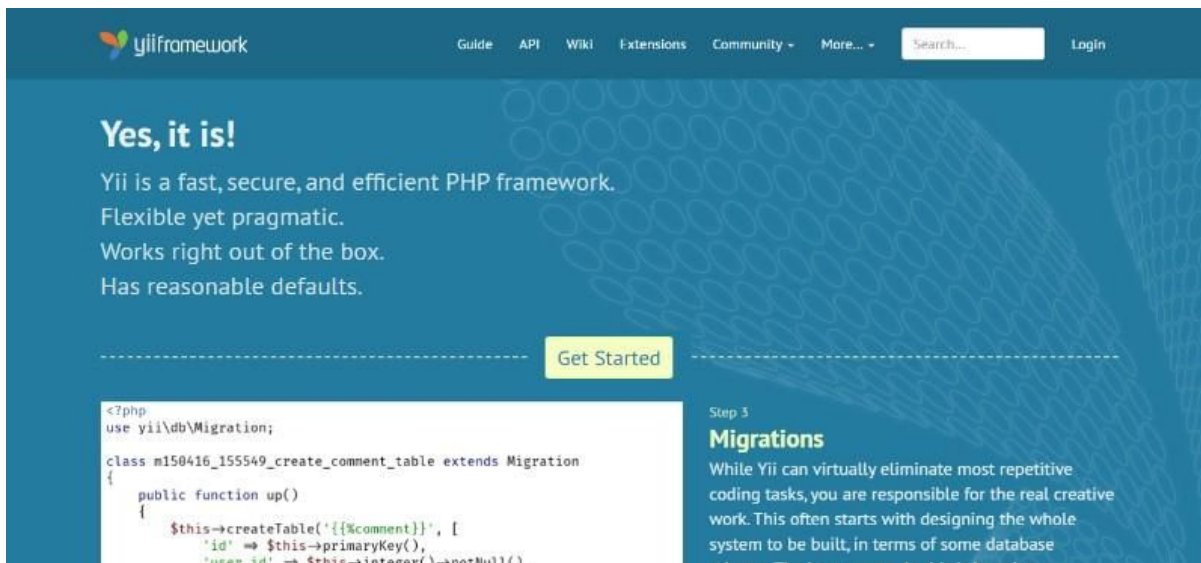
Ruby on Rails

(Fig. Web Development Frameworks Ruby on Rails)

Ruby on Rails is a server-side website technology that makes app development much easier and faster. The thing that really sets this framework apart is the reusability of the code as well as some other cool features that will help you get the job done in no time. Popular websites written with Ruby include Basecamp, Ask.fm, GitHub, 500px, and many others. Here is everything you need to know about Ruby on Rails. If you would are interested in a more in-depth training on Ruby on Rails framework, this 10-hour course by Kevin Skoglund, a senior Ruby developer, might be just the right resource to get started. It covers the complete learning cycle from the very fundamentals to more advanced topics such as Layouts, Partials, and View Helpers, giving quite a few practical tasks in parallel.

YII

(Fig. Web Development Frameworks Yii)

Yii is an open-source web application development framework built in PHP5. It is performance-optimized and comes with a number of great tools for debugging and app testing. Another plus is that it is pretty simple and easy to use.
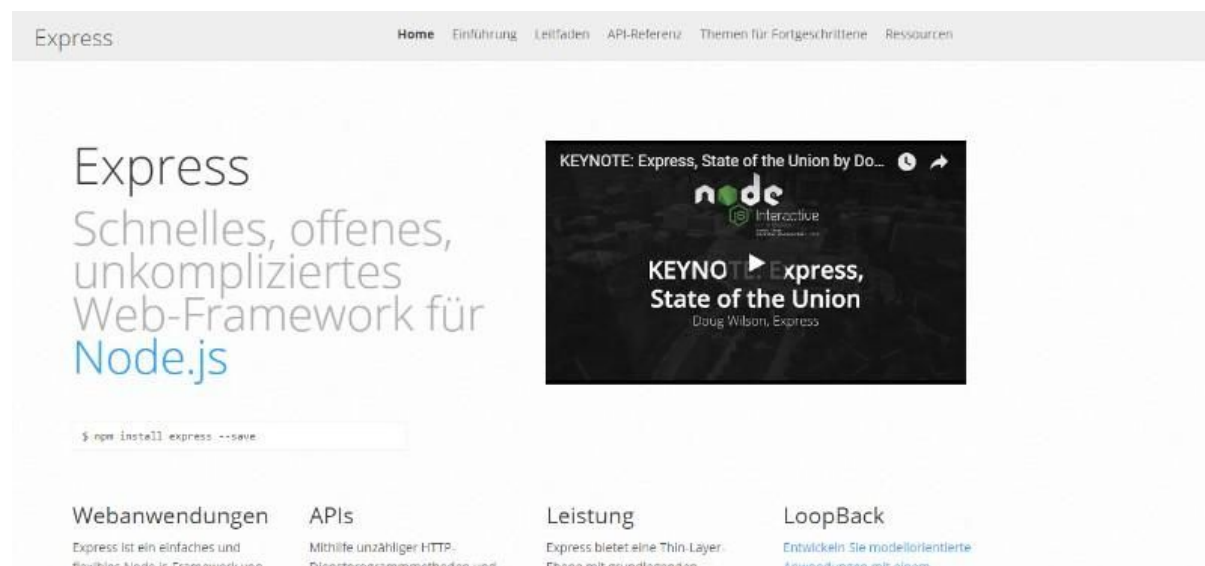
Meteor JS

(Fig. Web Development Frameworks Meteor JS)

Meteor JS is written in Node.js and it makes it possible for you to create real-time web applications for different platforms. The framework for creating simple websites for personal use really stands out with Meteor JS. This is an open-source isomorphic JavaScript web framework which also means that the webpage loading time is significantly shorter. JavaScript stack also makes it possible to get the same results with fewer lines of code than usually. This online video course gives an interesting practical example of combining MeteorJS and React to build a web app.
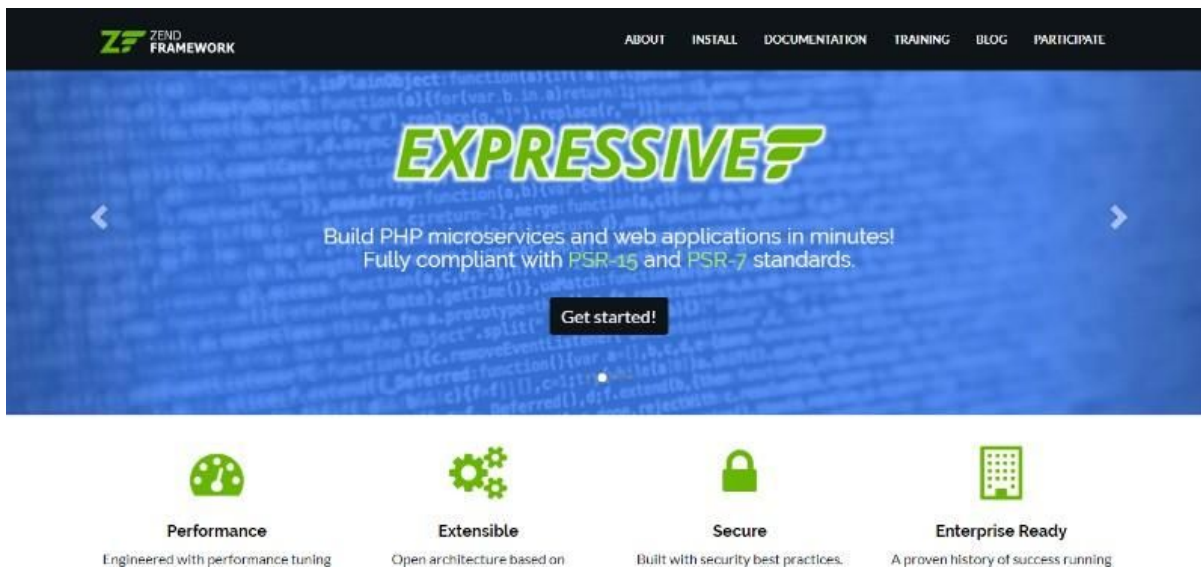
Express.js

(Fig. Web Development Frameworks Express JS)

Developed in Node.js, Express.js is a web app development network that is great for those who need to develop apps and APIs as fast as possible. A lot of great features are provided with the help of plugins. This course provides a good insight into advanced usage of Express.js in combination with MongoDB and Mongoose and shows different ways of deploying an Express app and running it in production.
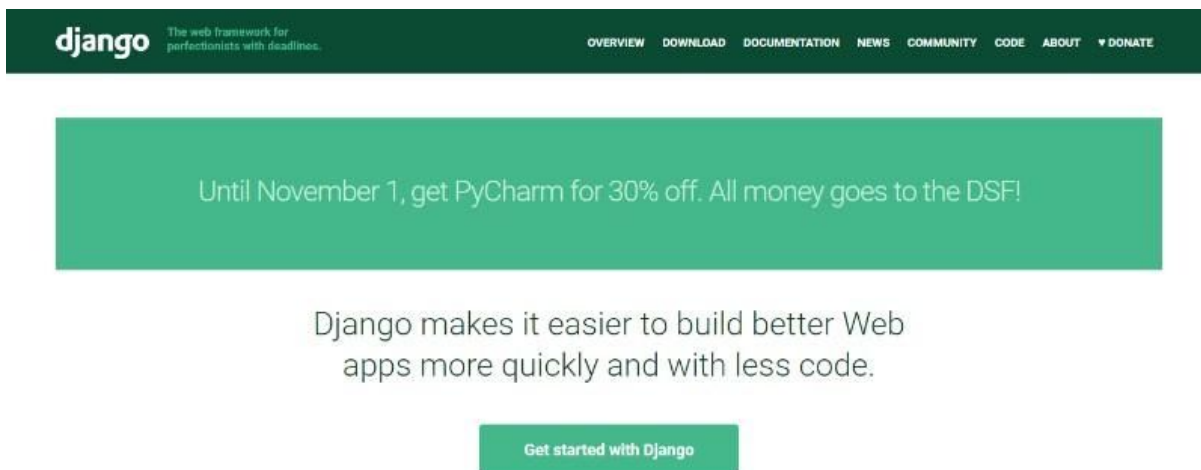
Zend

(Fig. Web Development Frameworks Zend)

Zend is an open-source framework based on PHP, focused on building more secure and reliable web apps and services. It is one of the first enterprise-level MVC frameworks, which came before the current superhits such as Laravel or Symfony, and many popular PHP engines such as Magento were built in Zend. Today Zend is still under active development, and even though it may be less popular than its opensource siblings, it is a great solution for a large-scale PHP app. Watch this short video course where different PHP MVC frameworks are compared so that you could make a choice on your own.
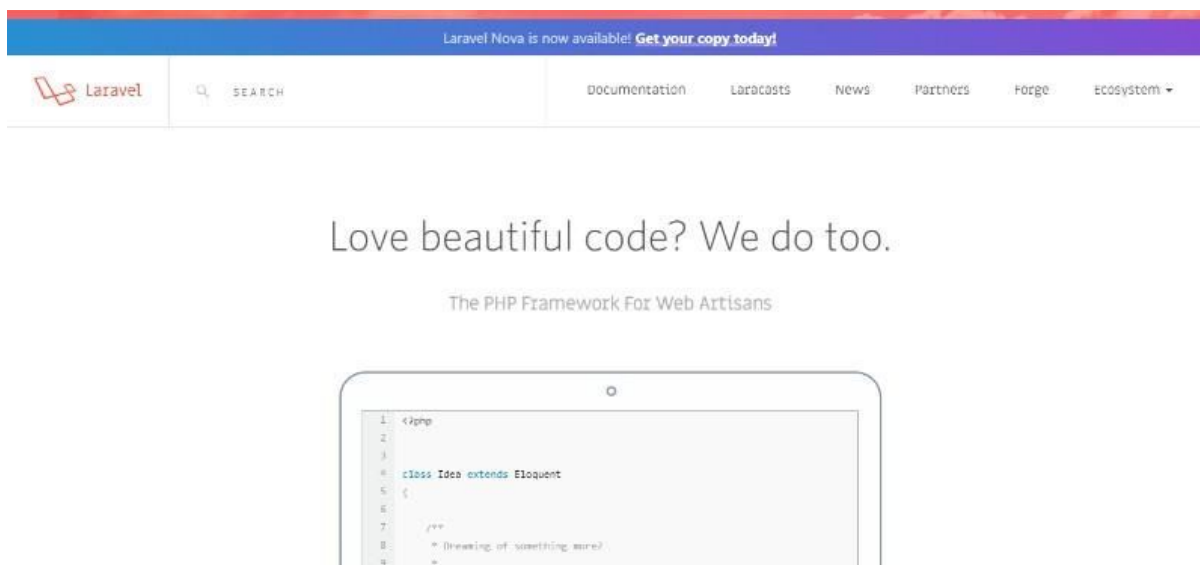
Django

(Fig. Web Development Frameworks Django)

Django is one of the most popular frameworks written in Python and follows MVC architecture. It makes the app development process much easier thanks to its simplicity. Django simplifies using Python a lot and provides multiple tools that make a web app developer's life easier – e.g. an ORM, Models, Django admin, templates, etc. This 1.5-hour video course can help any developer, even a beginner, to start developing Python/Django apps in a couple of days. Check out more popular Python frameworks.

Laravel

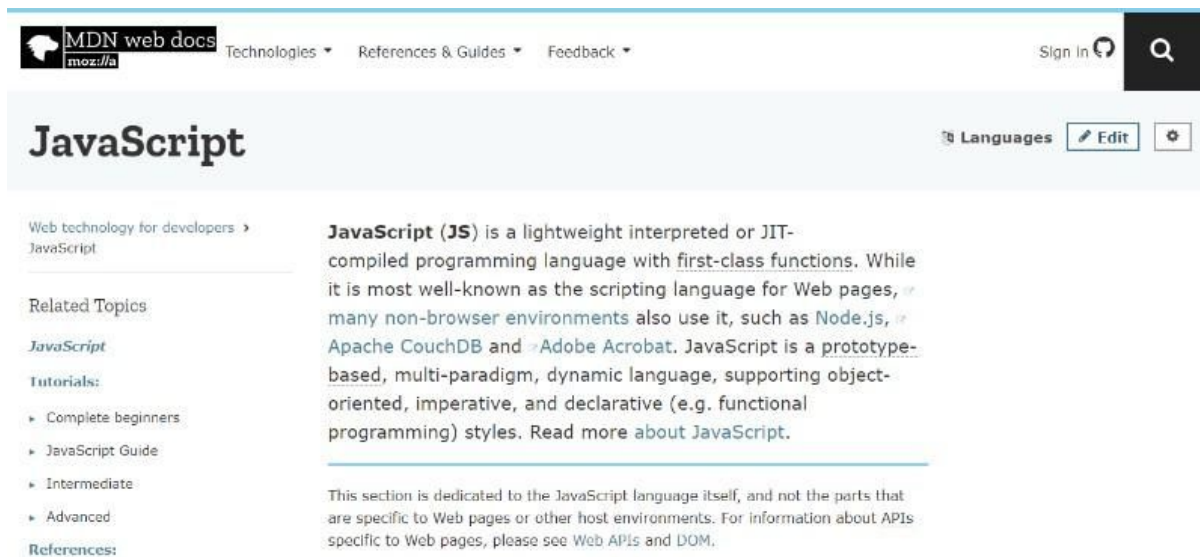(Fig. Web Development Frameworks Laravel)

Laravel is a PHP development framework ideal for small websites. It comes with a number of useful features including the MVC support, object-oriented libraries, Artisan, authorization technique, database migration, etc. Currently, it is one of the most community-supported and community-developed frameworks and given that PHP has one of the largest communities out there, Laravel is a great tool powering both small websites and large-scale B2B web apps managing millions of transactions daily. To get started with Laravel in less than 3 hours, watch this video course by Bernando Pineda, a senior DevOps, and Engineer with 15+ years of software development experience. It is one of our favorite PHP frameworks.

PROGRAMMING LANGUAGES

As we explained before, since computers don't use languages that are anything like human languages, they need a different way to communicate. Here are some of the most popular programming languages:

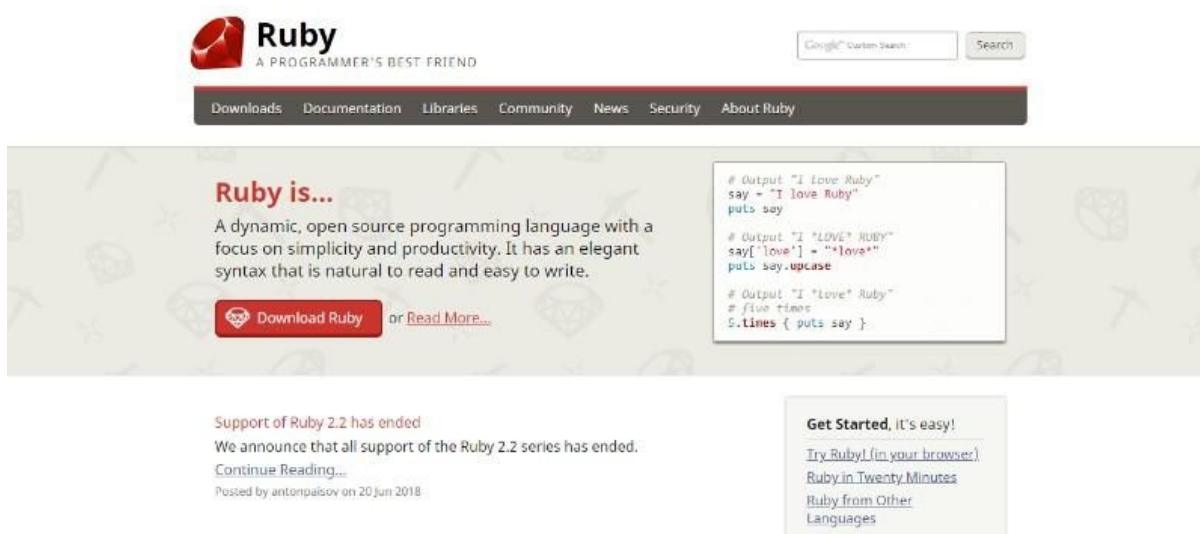|		
Javascript	:	used by all web browsers, Meteor, and lots of other frameworks.
Coffeescript	:	a "dialect" of JavaScript. It is viewed as simpler but it converts back into JavaScript.
Python	:	used by the Django framework as well as in the majority of mathematical calculations.
Ruby	:	used by the Ruby on Rails framework
PHP	:	used by WordPress, Facebook, Wikipedia, and other major sites.
Go	:	newer language, built for speed.
Swift	:	Apple's newest programming language.
Java	:	used by Android and a lot of desktop applications.

JavaScript

(Fig. web development technologies programming languages JavaScript)

According to StackOverflow's annual survey, JavaScript is the most popular programming language with 62.5% of respondents claiming to use it. It is one of the core web technologies and if you want to learn more about it, you can start with this essential training that covers all the basics, working with functions and objects, interacting with DOM, etc. This course is recent – from April 2019 – Javascript evolves quickly, so it makes sure you leverage the newest language "perks" as you learn.
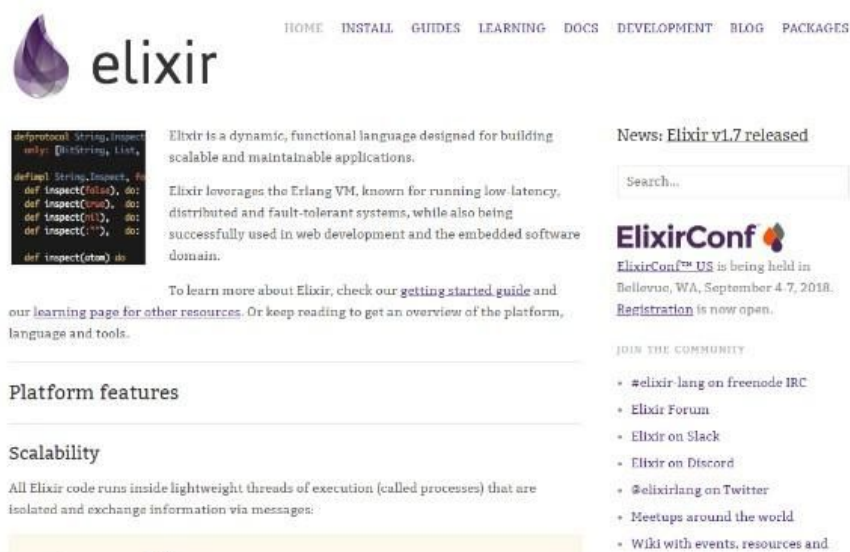
Ruby

(Fig. web development technologies programming languages Ruby)

The developers love Ruby – and for all the right reasons. Designed to be user-friendly and really easy to use, it's no wonder that this programming language is often called "a programmer's best friend." What you can expect from Ruby is a shorter, readable code. Unfortunately, that sometimes means lower efficiency compared to other programming languages – but it also means higher productivity. If you are a beginner in the web development world, Ruby would be a great choice for the first programming language to learn. A well-written Ruby code can be almost as readable as the sentence in plain English language. But the real reason most people use Ruby is its popular framework — Ruby on Rails which we mentioned earlier in the text. The great productivity achieved with Rails makes it a common choice for startups who aim for a running start.

Elixir

(Fig. web development technologies programming languages Elixir)

Elixir appeared back in 2011 and gained popularity almost immediately. It was inspired by Erlang, a language developed back in the '80s by Ericsson. Elixir's author José Valim himself said that he loved Erlang, but also noticed some things that could use a bit of improvement

Scala

(Fig. web development technologies programming languages Scala)

Scala stands for Scalable Language and is one of the many attempts to "rewrite Java" and it is compiled to run on the Java Virtual Machine (JVM). It is safe to say this programming language turned out to be quite a success taking into consideration that companies like LinkedIn, Twitter, and The Guardian use it in their codebases. Scala is known to be a complex language but also a language worth learning. This essential 3-hour training may be a good way to start your journey with Scala.

PROTOCOLS

The instructions for how to pass information back and forth between computers and devices are commonly known as protocols.

HTTP

Thanks to this protocol, each website can get to the browser. The protocol requests the website from Google's server and then receives a response with the HTML, CSS, and JavaScript of the website.

DDP

Uses web sockets to create a consistent connection between the client and the server.

REST

Used mostly for APIs, this protocol has standard methods like GET, POST, and PUT that let information be exchanged between applications. of that, you get website updates in real-time without having to refresh the browser.

DATA FORMATS

Data is stored in the structure called a data format.

JSON	:	JavaScript Object Notation is a syntax for storing and exchanging data (just like XML). It is currently becoming the most popular data format out there.
XML	:	Predominantly used by Microsoft systems, it used to be the most popular data format.
CSV	:	Is data formatted by commas; (for example, Excel data.)

WEB GAMES

1. Planetside 2

An epic sci-fi shoot 'em up with a similar aesthetic to Halo. The massively multiplayer game has you scrambling around a dystopian landscape fighting for territory.

planetside2.eu

2. Mr. Smoozles Goes Nutso

Based on the online comic Mr. Smoozles, this was the first indie game released by the award-winning writer and developer Steve Ince. It was originally a paid-for game, but Ince decided to release it for free in 2011.

juniper-games.com

3. Slender

Terrifying stuff. This is one of those games that are just so eerily quiet you'd jump if someone came into the room while you were playing it. The artful indie horror game involves wandering around a forest collecting pages armed only with a flashlight while avoiding the "Slender Man" who is perpetually chasing you through the fog.

parsceproductions.net

4. Wonderputt

There are a ton of brain-numbing golf games on the web, but none as beautiful as this one. It is colorful, clean and creative. You should play it to appreciate the graphic design as much as the game itself.

dampgnat.com/wonderputt

5. Bumperball

Available online as well as for iPad, this is a fun arcade sports game that combines bumper cars with football. Possibly one for the retro game geeks out there.

bumperball.com

6. Yeti Sports

The super addictive Yeti sports collection is a true Olympiad of online mini-games, which can also be downloaded as apps. Highlights include Albatross Overload and Scrat Jump. Almost all of them involve throwing a penguin as far as you can.

yetisports.org

7. Numpty Physics

If only learning science at school could have been this fun. Use crayons to solve puzzles on a piece of paper and experiment with your drawings that come to life according to the rules of physics.

numptyphisics.garage.maemo.org

8. Drifting Afternoon

One of many tranquil online games by designer Ferry Halim. In this one, you are a joyous cat bounding through a field with pastel-colored bubbles floating overhead. All you have to do is jump on the bubbles. It is as blissful as it is relaxing, five minutes of playtime is like therapy.

ferryhalim.com

9. Flow

Hypnotically immersive, this simple, yet multi-award winning game is the result of one student's academic game design thesis.

interactive.usc. edu/projects/cloud/flowing

10. Rebuild 2

Put down that baseball bat, this is not your usual zombie massacre arcade game. Instead, this strategy game is set in the aftermath and you need to survive with the resources you have, scope out new buildings to protect your population and avoid further attacks from the dreaded flesh eaters. It's for the thinkers, not the shooters.

Js13kGames

Introduction
Js13kGames is a JavaScript coding competition for HTML5 Game Developers. The fun part of the compo is the file size limit set to 13 kilobytes. The competition started at 13:00 CEST, 13th August and ended at 13:00 CEST, 13th September 2019.

Each year, participants have to compete by making games that are under 13kb keeping in mind the theme of the game, for the year 2019 theme is "**Back**".

They have several business partners, some which are mentioned below

Partners

Rules:

I. The package size should be smaller than or exactly 13kb after compression. The compression should be a zipped folder containing an index.html file. Tools such as minify JavaScript code can be utilized.

II. Two sources of the game must be provided, one as a zipped folder and another on GitHub.

III. No external libraries or services can be used, but if the participant is able to shrink the size of the library and the source code itself and able to maintain the size limit he/she can use them.

IV. The theme for 2019 is Back which must be used.

V. The deadline is 13th Sep 2019, 13:00 CEST after which no more submissions will be accepted.

VI. The participant has the rights for every asset utilized in the game. The games will be published and made available for others to play.

VII.   Only new and finished products should be submitted.

VIII.   The game must support at least two browsers, Chrome and Firefox. If the game supports more browsers then, more points. Errors in the console can cost the participant points and also if the game is not playable, it won't be accepted.

IX.   There is no limit or a cap on team size.

X.   Participants can submit more than one game for the competition but cannot submit the same game to different platforms.

XI.   Submissions are checked manually and published online.

XII.   The results will be declared on September 28th, during this time The Socials Specials contest will be held, from August 13th to September 27th, winners will be announced the same day for completion. The community award voting among the participants will commence from 13th Sep to 20th Sep, winners will be declared on 21st September.

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