**Task02**

**Question 1**

**List 5 difference between Browser JS(console) v Nodejs**

**Answer :**

**1.**

Javascript is mainly used for any client side activity for the web application, for example refreshing the page in a specific interval, possible attribute validation or provide any dynamic changes in web app pages without refreshing that particular web page.

It is commonly used by some of the best IT companies providing [software solutions](https://www.xicom.biz/offerings/software-development/?ref=hackernoon.com)for performing or accessing any non-blocking operation of operating system, like executing or creating a shell script or accessing the hardware specific information or running any job in the backend.

**2.  
JavaScript vs Node.js: Running Engine**

JavaScript running any engine like JavaScript Core (Safari), Spider monkey (FireFox), V8 (Google Chrome)

Node.js only runs in a V8 engine that is mainly used by Google Chrome. And, JS program which will be written with the help of Node.js library will always run in the V8 Engine.

3.

JavaScript is mainly used for the client-side activity for one particular web application. Some of these activities can be dynamic page display in some schedule time interval, addressing business validation or basic Ajax call kind of task.

These are used most of the time for any web apps. On the other hand, Node.js is mainly used for running or accessing any operating system for the non-blocking operation.

An operation like executing or creating a shell script, or getting any specific information related to the hardware on one call or the installed details of certificate in the system or various defined task which are most of the time non-blocking on an operating system.

4.

JavaScript programming is very easy to write and put the running environment means right browser.

On the other hand, Nodejs only support the V8 engine that is specific to the googles chrome. But whether it support V8 engine, written in the JavaScript code can be able to run in any given environment. Therefore, there is no constraint to it specific to the browser.

5.

JavaScript normally follows standard of Java Programming language. There may have different ways of writing source code but at the same time, we can say that it is following the standards of Java Programming language.

On the other hand, Node.js is written in the C++, and provides V8 engine base that helps developers to run the written program of javascript in any browser environment.

6.

For accessing the operating system specific to any non-blocking task JavaScript has many objects but these are operating system specific. For example, an ActiveX Control which is only running in the Windows. On the other hand, Node.js is given utility to run a few operating systems.

Also, it does not have any specific constraint related to operating system. Node.js is quite familiar to build a specific binding using the file system, and also allowing the web app developer for reading or sometimes write on the disk.

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| --- | --- | --- |
| S.No | Javascript | NodeJS |
| 1. | Javascript is a programming language that is used for writing scripts on the website. | NodeJS is a Javascript runtime environment. |
| 2. | Javascript can only be run in the browsers. | NodeJS code can be run outside the browser. |
| 3. | It is basically used on the client-side. | It is mostly used on the server-side. |
| 4. | Javascript is capable enough to add HTML and play with the DOM. | Nodejs does not have capability to add HTML tags. |
| 5. | Javascript can run in any browser engine as like JS core in safari and Spidermonkey in Firefox. | Nodejs can only run in V8 engine of google chrome. |
| 6. | Javascript is used in frontend development. | Nodejs is used in server-side development. |
| 7. | Some of the javascript frameworks are RamdaJS, TypedJS, etc. | Some of the Nodejs modules are Lodash, express etc. These modules are to be imported from npm. |
| 8. | It is the upgraded version of ECMA script that uses Chrome’s V8 engine written in C++. | Nodejs is written in C, C++ and Javascript. |

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**Question 2**

**watch & summary 5 points -** [**https://www.youtube.com/watch?v=SmE4OwHztCc&ab\_channel=JSConf**](https://www.youtube.com/watch?v=SmE4OwHztCc&ab_channel=JSConf)

**Answer :**

1.browser component are [1]Binding[2] Rendering : Parsing, layout,painting etc [3] platform [4]JavaScript VM

2 .High Level flow :

Parsing HTML & Parse CSS -> Render Tree -> Layout -> Paint

3.Parsing HTML

HTML is forgiving by nature

Parsing isn’t straight forward

Can be halted

Will do speculative parsing

It’s reentrant.

4.Render Tree

DOM +CSSOM

Render Object

Render Style

Render Layer

Line boxes

5.Calculating visul properties

\*Combine visul properties

\*Defaults external,style leents & inline

\*Complexity around matching rules for each element

\*Style computation

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**Question 3**

**To read** -<https://stackoverflow.com/questions/5641997/is-it-necessary-to-write-head-body-and-html-tags>

**Question 4**

**Execute the below code and write your description in txt file**

**Answer :**

console.log(typeof 1.1);

// output: "number"

console.log(typeof '1.1');

// output: "string"

console.log(typeof true);

// output: "boolean"

console.log(typeof undefined);

// output: "undefined"

console.log(typeof []);

// output: "object"

console.log(typeof {});

// output: "object"

console.log(typeof null);

// output: "object"

console.log(typeof NaN);

// output: "number"

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**Question 5**

Read what is prototype

**Answer :**

A prototype is an early sample, model or release of a product created to test a concept or process. Typically, a prototype is used to evaluate a new design to improve the accuracy of analysts and system users. It is the step between the formalization and the evaluation of an idea.