1. List 5 difference between Browser JS(console) v Nodejs

| S.No | Javascript | NodeJS |
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| 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. | We can run Javascript outside the browser with the help of NodeJS. |
| 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. | V8 is the Javascript engine inside of node.js that parses and runs Javascript. |
| 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. |

1. watch & summary 5 points -<https://www.youtube.com/watch?v=SmE4OwHztCc&ab_channel=JSConf>
   1. Parsing HTML – HTML Parsing is not straight forward, It can be halted, it will do speculative parsing, it is re-entrant.
   2. <div> tag defines a division or a section in an HTML document. The <div> tag is used **as a container for HTML elements** - which is then styled with CSS or manipulated with JavaScript. The <div> tag is easily styled by using the class or id attribute.
   3. Parse Tree - Parse tree is a representation of HTML. It has all the elements like paragraph,div,etc.
   4. <script/> at the bottom – It has parse uninterrupted, Faster to render, defer and async attributes, trade off.
   5. Multiple tree- Render is multiple elements. It has render Objects, render styles, render layers, line boxes.
2. Execute the below code and write your description in txt file
   1. typeof(1) - Number
   2. typeof(1.1) - Number
   3. typeof('1.1') - String
   4. typeof(true) - Boolean
   5. typeof(null) - object
   6. typeof(undefined) - undefined
   7. typeof([]) - object
   8. typeof({}) - object
   9. typeof(NaN) – number
3. Read what is prototype

The prototype is an object that is associated with every functions and objects by default in JavaScript, where function's prototype property is accessible and modifiable and object's prototype property (aka attribute) is not visible.

Every function includes prototype object by default.

[](https://www.tutorialsteacher.com/Content/images/oo-js/prototype-1.png)Prototype in JavaScript

The prototype object is special type of enumerable object to which additional properties can be attached to it which will be shared across all the instances of it's constructor function.

So, use prototype property of a function in the above example in order to have age properties across all the objects as shown below.

Example: prototype

function Student() {

this.name = 'John';

this.gender = 'M';

}

Student.prototype.age = 15;

var studObj1 = new Student();

alert(studObj1.age); // 15

var studObj2 = new Student();

alert(studObj2.age); // 15