**Task 2**

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

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| **S.NO** | **Javascript** | **Node,JS** |
| 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 Spider monkey in Firefox. | V8 is the Javascript engine inside of node.js that parses and runs Javascript. |

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

* 1. **typeof(1)**

console.log(typeof (1)); o/p : number

* 1. **typeof(1.1)**

console.log(typeof (1.1)); o/p : number

* 1. **typeof('1.1')**

console.log(typeof ‘1’)); o/p : string

* 1. **typeof(true)**

console.log(typeof (true)); o/p : boolean

* 1. **typeof(null)**

console.log(typeof (Null)); o/p : object

* 1. **typeof(undefined)**

console.log(typeof (undefined)); o/p : undefined

* 1. **typeof([])**

console.log(typeof [1,2,3]); o/p : object

**h typeof({})**

console.log(typeof { b : 1}); o/p : object

**i typeof(NaN**)

console.log(typeof (NaN)); o/p : number

1. **What is Prototype?**

A prototype is an early sample, model or release of a product created to test a concept or process. Usually, 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.

Prototypes **are a crucial part of the design process** and a practice used in all design disciplines. From architects, engineers, industrial designers and even service designers.

Prototypes often fail when tested, and this shows designers where the defects are and sends the team “back to the drawing process” to refine or repeat the proposed solutions based on real user feedback.

**Advantages:**

* prototypes can save lives, avoiding the waste of energy, time and money in implementing weak or inappropriate solutions.
* Another advantage of prototyping is that, because the investment is small, the risk is low.

**4. Steps for what happens when we enter a URL:**

1. Browser checks cache for DNS(Domain Name Server) entry to find the corresponding [IP address](https://www.geeksforgeeks.org/introduction-of-classful-ip-addressing/) of website. It looks for following cache.
   * Browser Cache
   * Operating Systems Cache
   * Router Cache
   * ISP Cache
2. If not found in cache, ISP (Internet Service Provider) initiates a DNS query to find IP address of server that hosts the domain name. The requests are sent using small data packets that contain information content of request and IP address destined for.
3. Browser initiates a [TCP (Transfer Control Protocol)](https://www.geeksforgeeks.org/tcp-and-udp-in-transport-layer/) 3 pass system to connect with server.
4. Browser sends an HTTP request to the web server. GET or POST request.
5. Server on the host computer handles that request and sends back a response. It assembles a response in some format like JSON, XML and HTML.
6. Server sends out an HTTP response along with the status of response.
7. Finally Browser displays [HTML](https://www.geeksforgeeks.org/html-tutorials/) content