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4) (d) Write a JavaScript code to apply font color and background color to Heading from dropdown, if font color and background color is same no changes should be reflected.

Objective: To learn about concept and implementation of JAVASCRIPT

Theory:

What is Javascript. Why it is called Client side Scripting language Client side: JavaScript is a client-side language, which means it gets executed at the client side (i.e, user side). On contrary, PHP is a server-side scripting language, as it gets executed at server. Whenever you browse the web, all the HTML,CSS & JS files are fetched from the server & then executed/interpreted at your side by your browser. Scripting language: Since it is interpreted rather than compiled & are úsed to execute tasks one-by-one. More professionally, A scripting or script language is a programming language that supports scripts: programs written for a special run-time environment that automate the execution of tasks that could alternatively be executed one-by-one by a human operator. Scripting languages are often interpreted.

Explain Javascript functions used in above programs like with syntax and example:-

getElementByID()
The getElementById() method returns an element with a
specified value. The getElementById() method returns
null if the element does not exist.
document.getElementById("demo").style.color
= "red";

•innerHTML()
The innerHTML property sets or returns the HTML content (inner
HTML) of an element. let html

= document.getElementById("myList").innerHTML;

•value()
The Object.values() method returns an array of a given object's own enumerable property values, in the same order as that provided by a for...in loop. (The only difference is that a for...in loop enumerates properties in the prototype chain as well.)
console.log(Object.values(object1))

•parseInt()
The parseInt() function parses a string argument and returns an integer of the specified radix (the base in mathematical numeral systems). function roughScale(x, base) { const parsed = parseInt(x, base); if (isNaN(parsed)) { return 0; } return parsed * 100;

DOM

•   It is an application programming interface.

•   Dom represents a document as a hierarchical tree of nodes allowing dev to add, remove, and modify individual part of the page.

•   Document node represents every document as a root. In this example only child of document node is html which is called as document element.

•   Every piece of markup can be represented by a node in the tree: HTML elements are represented by element nodes, attributes are represented by attribute nodes, the document type is represented by a document type node, and comments are represented by comment nodes.

•   In total, there are 12 node types, all of which inherit from a base type.

•   DOM Level 1 describes an interface called Node that is to be implemented by all node types in the DOM.

•   Every node has a nodeType property that indicates the type of node that it is. Node types are represented by one of the following 12 numeric constants on the Node type:

    a. Node.ELEMENT_NODE (1)
    b. Node.ATTRIBUTE_NODE (2)

c. Node.TEXT_NODE (3)

d. Node.CDATA_SECTION_NODE (4)

e. Node.ENTITY_REFERENCE_NODE (5)

f. Node.ENTITY_NODE (6)

g. Node.PROCESSING_INSTRUCTION_NODE (7)

h. Node.COMMENT_NODE (8)

i. Node.DOCUMENT_NODE (9)

j. Node.DOCUMENT_TYPE_NODE (10)

k. Node.DOCUMENT_FRAGMENT_NODE (11)

l. Node.NOTATION_NODE (12)

```
if (someNode.nodeType == Node.ELEMENT_NODE)
{
    alert("Node is an element."); //won't work in IE < 9
}
```

This example compares the someNode.nodeType to the Node.ELEMENT_NODE constant. If they're equal, it means someNode is actually an element. Unfortunately, since Internet Explorer 8 and earlier doesn't expose the Node type constructor, this code will cause an error. For cross-browser compatibility, it's best to compare the nodeType property against a numeric value, as in the following:

```
if (someNode.nodeType == 1)
{
    alert("Node is an element."); //works in all
    browsers

}
```

Properties of note type

- Two properties, nodeName and nodeValue, give specifi c information about the node. The values of these properties are completely dependent on the node type.
- nodeName is always equal to the element's tag name, and nodeValue is

always null.
- Each node has a childNodes property containing a NodeList. A NodeList is an array- like object used to store an ordered list of nodes that are accessible by position. Keep in mind that a NodeList is not an instance of Array even though its values can be accessed using bracket notation and the length property is present.
- Node Relationship child parent.

Conclusion:

Thus, we have successfully implemented the program.

Code:

```html
<html>
<head>
   <title>Font and Background Color</title>
   <style>
     body {
       font-family: Arial, sans-serif;
       text-align: center;
       padding: 50px;
     }
     select {
       padding: 10px;
       font-size: 16px;
     }
     h1 {
       padding: 20px;
     }
   </style>
</head>
<body>

<select id="fontColor">
   <option value="black">Black</option>
   <option value="red">Red</option>
   <option value="green">Green</option>
   <option value="blue">Blue</option>
</select>

<select id="bgColor">
   <option value="white">White</option>
   <option value="red">Red</option>
   <option value="green">Green</option>
   <option value="blue">Blue</option>
</select>

<h1 id="heading">Heading Example</h1>

<script>
   var fontColorSelect = document.getElementById("fontColor");
   var bgColorSelect = document.getElementById("bgColor");
   var heading = document.getElementById("heading");
```

```
        fontColorSelect.addEventListener("change", applyColors);
        bgColorSelect.addEventListener("change", applyColors);

        function applyColors() {
            var selectedFontColor = fontColorSelect.value;
            var selectedBgColor = bgColorSelect.value;

            if (selectedFontColor !== selectedBgColor) {
                heading.style.color = selectedFontColor;
                heading.style.backgroundColor = selectedBgColor;
            }
        }
    </script>

    </body>
    </html>
```

Output(Screenshots):

Red ⌄ Green ⌄

Heading Example