Web programming assignment

1. What is web browser and web server?

A. Web Browser is a software application used to locate and display web pages. It is able to retrieve, find, view and send information over the Internet.

A web server program is software that runs on the website hosting server computer. Its main purpose is to serve web pages, which means it waits for requests from web browsers and response by sending the required data back.

2.Explain MIME, HTTP and HTTP request methods

A. MIME- MIME also known as Multipurpose Internet Mail Extensions, A specification for formatting non ASCII messages so that they can be sent over the Internet. Many e-mail clients now support the MIME which enables them to send and receive graphics, audio and video files via Internet mail system. In addition, MIME supports messages in character sets other than ASCII.

HTTP- Http(hypertext Transfer Protocol) is perhaps the most popular application protocol used in the Internet. HTTP is an asymmetric request-response or client-server protocol. An HTTP client sends a request message to an HTTP server. The server in turns returns a response message. HTTP is a stateless protocol. A stateless protocol is one that does not maintain a relationship between requests. Each request is unrelated to any previous

HTTP request methods - Http://protocol defines a set of request methods. A client can use one of this request methods to send a request message to an HTTP server. The methods include :

1) GET- The client can use the GET request to get a web resource from the server.
2) HEAD- The client can use the HEAD request to get the header that a GET request would have obtained. Since the header contains the last modified date of the data, this can be used to check against the local cache copy.
3) POST- User to post data up to the web server.
4) PUT- Ask the server to store the data.
5) DELETE- Ask the server to delete the data.
6) TRACE- Ask the server to return a diagnostic trace of the actions it takes.
7) OPTIONS- Ask the server to return the list of request methods it supports.
8) CONNECT- User to teleport oxy to make a connection to another host and simply reply the content without attempting to pharse or cache it.

3.Define internet and write a short note on domain and sub-domain.

A. The Internet is a global network of networks. The Internet is the largest computer network in the world, connecting millions of people.

An Internet domain is an administrative structure for organizing, delivering, and accessing services on the Internet.

Sub-domains are the third level domains that are used to organize the website content in a systematic manner. They are just like folders under the root directory, but they will have a special URL to access.

4.Explain DOM.

A. The Document Object Model (DOM) is a way of representing the document independent of browser type. It allows a developer to access the document via a common set of objects, properties, methods and events, and to alter the contents of the web page dynamically using scripts. The Document Object Model explains what properties of a document a script can retrieve and which one it can alter. It also defines some methods that can be called to perform an action on the document.

5. Explain element access in javascript.

A. 1) Accessing form elements using forms and elements array- This is the original way to access the elements using forms and the element array of document object. The general syntax for accessing a form element is:

Document.forms[number].elements[number].

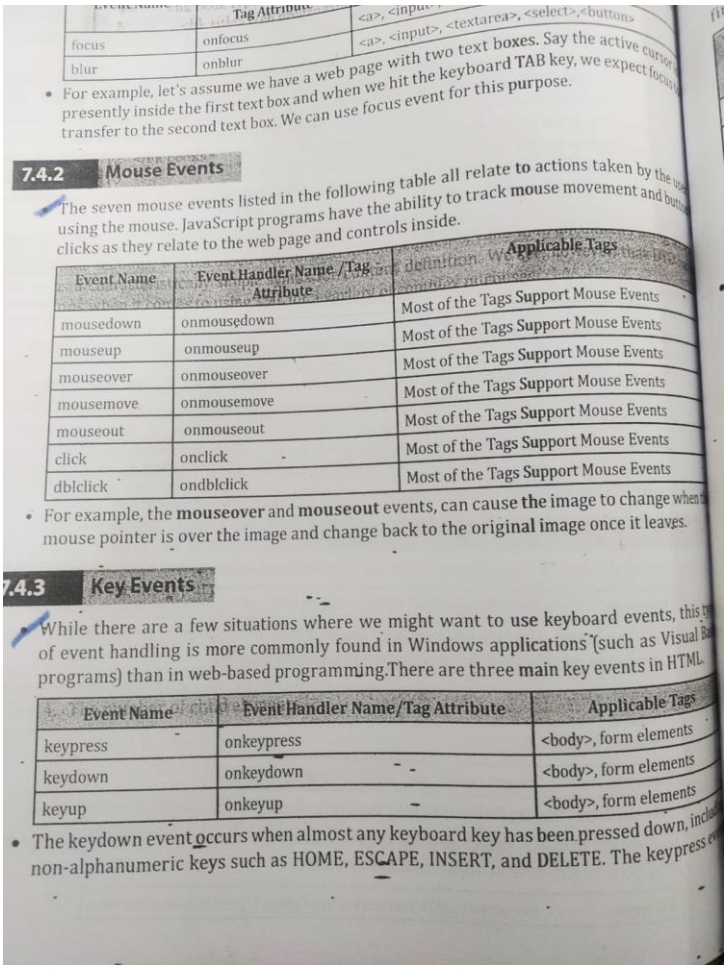
When the page is low. The JavaScript makes an array forms in which it pulls all the forms that are on the page. The first form is forms[0], the second form is forms[1] etc. Each form as

another array in which JavaScript puts all the elements in the form.

2)Accessing form elements using name attribute- In some cases, it's better to use the names of the forms and elements. In XHTML we must give a name to each form and each element. The advantage of using names is that we can put all elements somewhere else on the page and still have a working script, while script using numbers will have to be changed.

3) Accessing form elements using getElementbyID() method- By combining the XHTML ID attributes with the getelementbyID() method of the document object, it is much easier to get a handle on any XHTML object. The getelementbyID() method takes the ID of an XHTML element as its argument and returns a reference to that element.

6. Explain mouse events, key events and navigator objects.

A. 

	Tag Attribute	
focus	onfocus	<a>, <input>, <textarea>, <select>, <button>
blur	onblur	<a>, <input>, <textarea>, <select>, <button>

- For example, let's assume we have a web page with two text boxes. Say the active cursor is presently inside the first text box and when we hit the keyboard TAB key, we expect focus to transfer to the second text box. We can use focus event for this purpose.

7.4.2 Mouse Events

The seven mouse events listed in the following table all relate to actions taken by the user using the mouse. JavaScript programs have the ability to track mouse movement and button clicks as they relate to the web page and controls inside.

Event Name	Event Handler Name / Tag Attribute	Applicable Tags
mousedown	onmousedown	Most of the Tags Support Mouse Events
mouseup	onmouseup	Most of the Tags Support Mouse Events
mouseover	onmouseover	Most of the Tags Support Mouse Events
mousemove	onmousemove	Most of the Tags Support Mouse Events
mouseout	onmouseout	Most of the Tags Support Mouse Events
click	onclick	Most of the Tags Support Mouse Events
dblclick	ondblclick	Most of the Tags Support Mouse Events

- For example, the **mouseover** and **mouseout** events, can cause the image to change when the mouse pointer is over the image and change back to the original image once it leaves.

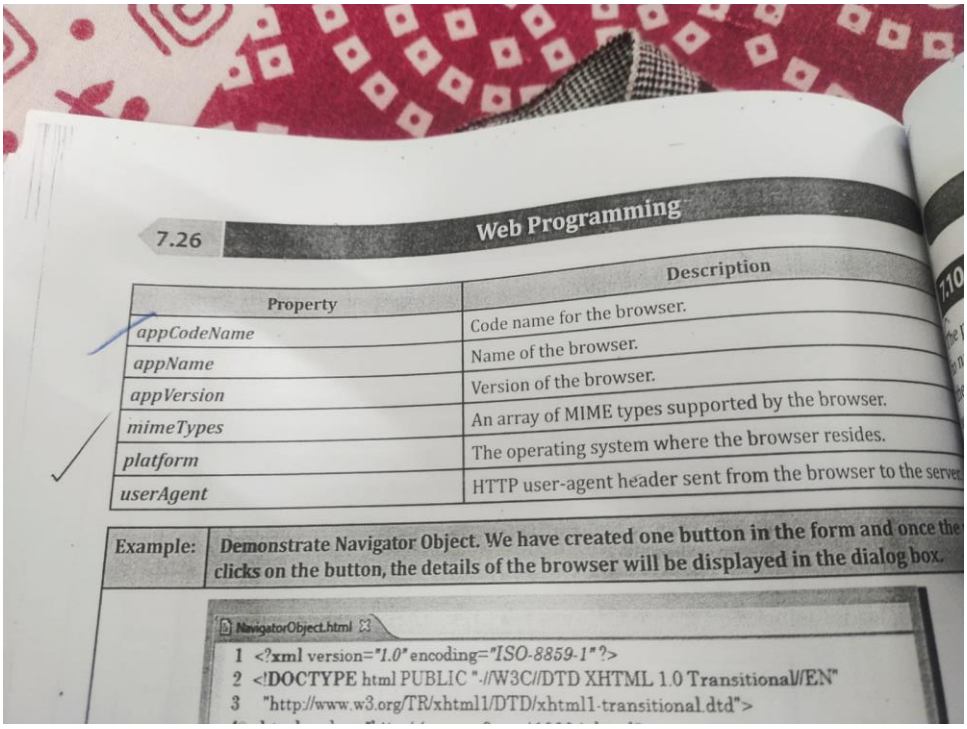
7.4.3 Key Events

- While there are a few situations where we might want to use keyboard events, this type of event handling is more commonly found in Windows applications (such as Visual Basic programs) than in web-based programming.There are three main key events in HTML.

Event Name	Event Handler Name/Tag Attribute	Applicable Tags
keypress	onkeypress	<body>, form elements
keydown	onkeydown	<body>, form elements
keyup	onkeyup	<body>, form elements

- The keydown event occurs when almost any keyboard key has been pressed down, including non-alphanumeric keys such as HOME, ESCAPE, INSERT, and DELETE. The keypress event

The navigator object- The navigator object is the object of JavaScript which is used to get some important and useful information about the visitors browser and systems like name of the browser, version of the browser, the platform on which the client is working, language and so on.



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Property	Description
appCodeName	Code name for the browser.
appName	Name of the browser.
appVersion	Version of the browser.
mimeTypes	An array of MIME types supported by the browser.
platform	The operating system where the browser resides.
userAgent	HTTP user-agent header sent from the browser to the server

Example: **Demonstrate Navigator Object. We have created one button in the form and once the clicks on the button, the details of the browser will be displayed in the dialog box.**

NavigatorObject.html

```
1 <?xml version="1.0" encoding="ISO-8859-1"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
3  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

7.Explain DOM2 event model.

A. The Document Object Model DOM2 Event Specification was released by the W3C in November in 2000, offering a more detailed and granular way to control events in a web page. At the Dome 2 standard defines an advanced event handling API that is significantly different than the DOM 0 API.

The DOM2 level model added two important features to the existing DOM 0 level event model:

- Introduced a way to set the several handlers for a specific event.
- Introducing the notation of event flow with captures and bubbling.

1) Event capture- even capturing occurs when a nested element gets clicked. The click event of this parent element must be triggered before the click of the nested element. This space are trickles down from the top of the DOM tree to the target element.
2) Event bubbling- even bubbling is a method of event propagation in the HTML DOM API, when an event is in an element inside another element and both elements have registered a handle to that event. It is a process that starts with the element that triggered the event and then bubbles up to the containing elements in the hierarchy.

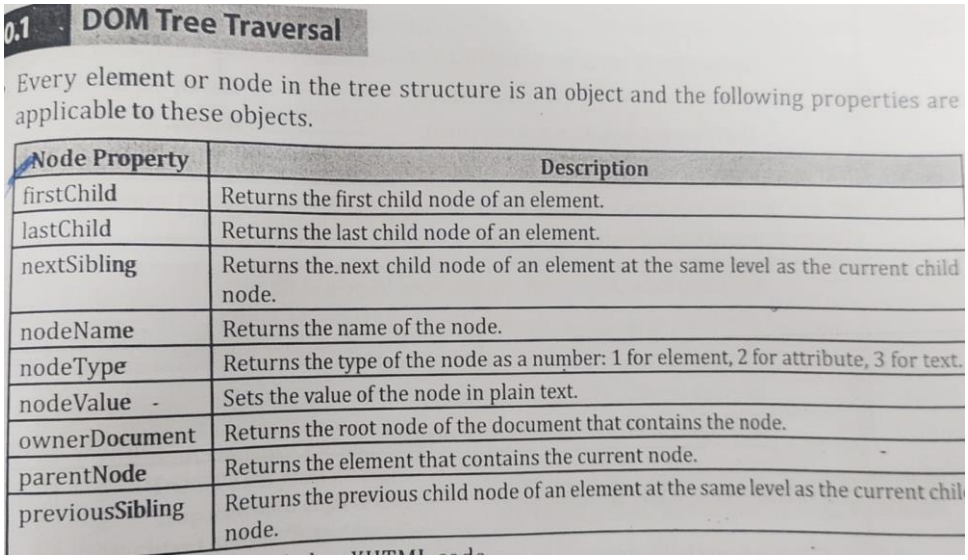
According to DOM2 event model, the event handling is a 3 phase process:

1) Capturing phase- In this phase the event starts at root node in the documentary and propagates towards the target node in this travelling. If any event handler is found then it checks whether they are enabled or not. If they are enabled, then it is executed by the capturing phase, then finally it reaches the target node and executes the handler code.
2) Target node handler execution- In this space, the handler code registered to the target node gets executed.
3) Bubbling phase- In this phase, the event starts at Target node and executes the handler code registered to the target node and moves upwards to the document tree. In

this process, if any other node has handler code, it will execute. Finally reaches the root node.

8)Explain DOM tree traversal and modification.

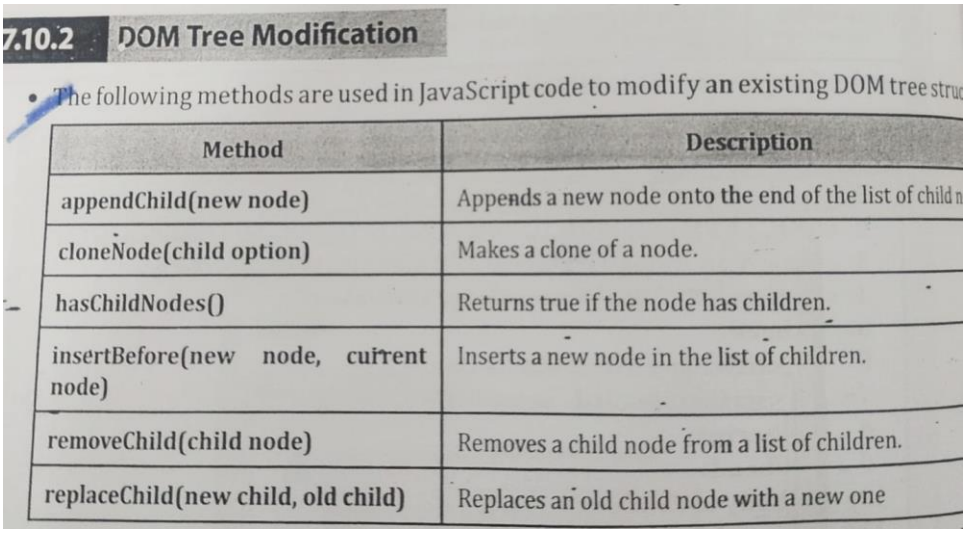
A.



0.1 DOM Tree Traversal

Every element or node in the tree structure is an object and the following properties are applicable to these objects.

Node Property	Description
firstChild	Returns the first child node of an element.
lastChild	Returns the last child node of an element.
nextSibling	Returns the next child node of an element at the same level as the current child node.
nodeName	Returns the name of the node.
nodeType	Returns the type of the node as a number: 1 for element, 2 for attribute, 3 for text.
nodeValue	Sets the value of the node in plain text.
ownerDocument	Returns the root node of the document that contains the node.
parentNode	Returns the element that contains the current node.
previousSibling	Returns the previous child node of an element at the same level as the current chil node.



7.10.2 DOM Tree Modification

- The following methods are used in JavaScript code to modify an existing DOM tree struc

Method	Description
appendChild(new node)	Appends a new node onto the end of the list of child n
cloneNode(child option)	Makes a clone of a node.
hasChildNodes()	Returns true if the node has children.
insertBefore(new node, current node)	Inserts a new node in the list of children.
removeChild(child node)	Removes a child node from a list of children.
replaceChild(new child, old child)	Replaces an old child node with a new one

9)Explain positioning elements.

A. 1) Absolute positioning- Absolute positioning places an element in a specific location on the page and can be used to achieve full animation, for instance, moving an object across a

page. It is used to specify the absolute coordinates XY of the element in terms of the browser window itself. The top and left properties are used to determine the coordinates. If not specified, the browser will assume the top left corner of the browser window, where X is 0 and Y is 0.

2) Relative positioning- Relative positioning places the elements in a position relative to the element where it is defined within the document. This type of positioning is used to control the way elements appear in relation to other elements in the document.

3) Static positioning- XHTML elements are positioned static by default. A static position element is always positioned according to the normal flow of the page. Static position elements are not affected by the top, bottom, left and right properties. The elements with static position are not really "positioned" at all in the CSS sense.

10) Write a short note on element visibility, dynamic content, stacking elements.

A. 1) Element visibility- The document element can be specified to be visible or hidden using the visibility property in the CSS style. The visibility property can take two values: visible or hidden. If the visibility is set to visible, then the element will be displayed. If the visibility is set to hidden, then the element will not be displayed in the document using which we can control the appearance or disappearance of any element.

2) Dynamic content- We can also change the contents of XHTML element dynamically. We know that we can get the value of any element using value property of the element. Similarly, we can assign the new value to any XHTML. When the user is filling out the form, we can provide some helper boxer. The content of the helper box will change dynamically when control gets focus. The purpose of the helper box is to inform the user about what needs to be filled in the form.

3) Stacking elements- When we move elements using absolute or relative positioning, there are chances of overlapping of the elements. So, it follows that multiple positioned elements have the potential to stack up on one another. By default, elements stack up in the order in which they appear in the document, but we can change the stacking order with the Z-index property.