

JavaScript DOM & BOM - Full Explained Summary

1. Selecting Elements from the DOM

You can select HTML elements using various DOM methods. These include selecting by ID, class name, tag name, or CSS selector. Each method has its own return type (single element, HTMLCollection, or NodeList):

```
document.getElementById("f-p"); // returns single element or null
document.getElementsByClassName("prag"); // returns HTMLCollection
document.getElementsByTagName("div"); // returns HTMLCollection
document.querySelector("div p.prag"); // returns first match
document.querySelectorAll("div p.p"); // returns NodeList
```

2. Changing Content of Elements

There are several ways to access and change the text or HTML inside elements. Use `innerHTML` for HTML content, `innerText` for visible text, and `textContent` to get/set all text including hidden:

```
let paragraph = document.getElementById("f-p");
paragraph.innerHTML = "<span style='color:green'>span</span>";
paragraph.innerText = "Just plain text";
let htmlContent = paragraph.innerHTML;
let textOnly = paragraph.innerText;
```

3. Document Properties & Links

You can interact with the document itself using properties like title and links:

```
document.title = "DOM Page Title";
console.log(document.links); // returns all <a> elements with href
```

4. Dealing with Attributes

JavaScript provides ways to get, set, check, and remove attributes on elements:

```
paragraph.getAttribute("class");
paragraph.setAttribute("class", "newClass");
paragraph.hasAttribute("class"); // true or false
paragraph.removeAttribute("class");
```

5. Manipulating Class List

classList is a useful object to add, remove, or toggle CSS classes efficiently:

```
paragraph.classList.add("newatt", "test");
paragraph.classList.remove("test");
paragraph.classList.toggle("active");
paragraph.classList.contains("prag"); // returns true or false
```

6. Changing Inline Style

You can directly update element styles using the style object:

```
paragraph.style.color = "green";
paragraph.style.fontSize = "14px";
paragraph.style.backgroundColor = "black";
```

7. Creating New Elements with JavaScript

Create new elements, set their properties, and append them to the DOM. Example below dynamically creates product cards:

```
let section = document.getElementById("section");
let heading = document.createElement("h1");
heading.innerText = "This is heading";
section.appendChild(heading);
```

8. Building Dynamic Cards from Data

A full product card is generated using document.createElement and then appended to the page:

```
function createCard(data) {
  let cardDiv = document.createElement('div');
  cardDiv.className = "card";
  cardDiv.style = "width: 18rem";

  let img = document.createElement('img');
  img.src = data.img;
  img.classList.add('card-img-top');
  img.setAttribute('alt', 'product img');

  let cardBody = document.createElement('div');
  cardBody.className = "card-body";

  let heading = document.createElement('h5');
  heading.classList.add('card-title');
```

```

heading.innerHTML = data.title;

let content = document.createElement('p');
content.className = 'card-text';
content.innerHTML = data.content;

let link = document.createElement('a');
link.href = data.linkUrl;
link.classList.add("btn", 'btn-primary');
link.innerHTML = data.linkText;

cardDiv.appendChild(img);
cardBody.appendChild(heading);
cardBody.appendChild(content);
cardBody.appendChild(link);
cardDiv.appendChild(cardBody);
return cardDiv;
}

```

9. DOM Events

You can listen to user actions using events like onclick, onfocus, onblur, onkeyup, and form submission:

```

btn.onclick = function(event) {
  btn.style.backgroundColor = "red";
};

userName.onfocus = function(event) {
  userName.style.backgroundColor = "green";
};

userName.onkeyup = function(event) {
  result.innerHTML += event.target.value;
};

form.onsubmit = function(e) {
  e.preventDefault();
  alert("Form submitted");
};

```

10. BOM - Browser Object Model

The BOM lets you interact with the browser itself including window, location, history, screen, etc:

```
window.innerHeight;  
window.innerWidth;  
window.scrollX;  
location.href = "https://developer.mozilla.org/";  
history.back(); // go to previous page  
navigator.userAgent;  
screen.width;
```