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What is CDN? How it helps in setting up Bootstrap framework?

A CDN, as a system of distributed servers, delivers Webpages to a user as per the geographic location of the server and the user. The closer the server, the faster is the content sent to the user. CDN aims at accelerating the delivery of Web content for sites with global reach and high traffic. Therefore, using Bootstrap CDN provides the benefit of faster loading time. Alternatively, Web developers can include Bootstrap from a CDN. This is the option for those developers who do not intend to host the framework by themselves.

What are containers in Bootstrap? Explain its types.

In Bootstrap, all site contents and a grid system exist within a container, which is a containing element. There are two containers namely, fixed and fluid.

Fixed Width Responsive Container:

The fixed container has a preset width in pixels with respect to the whole page's layout (viewport). It remains the same across different screens and browsers. Such a layout is easier to use and personalize in terms of design. It also eliminates the need to specify the minimum and maximum widths, which some browsers do not support. To create a fixed container, a Web developer needs to use the `.container` class in `<div>`.

Fluid Width Responsive Container:

This container spans across the width of the whole viewport. In simple words, it stretches to cover the available width for fitting to the window regardless of how wide it gets. The viewport's width changes even if there is a smallest change in the size of the browser or screen. It continuously resizes as the browser's width changes such that there is no additional empty space on the sides, unlike a fixed width container. To create a fluid container, a Web developer should use the `.container-fluid` class in `<div>`.

What are the layout components of Bootstrap? Specify the base class and element used for each component.

The layout components of Bootstrap are as follows:

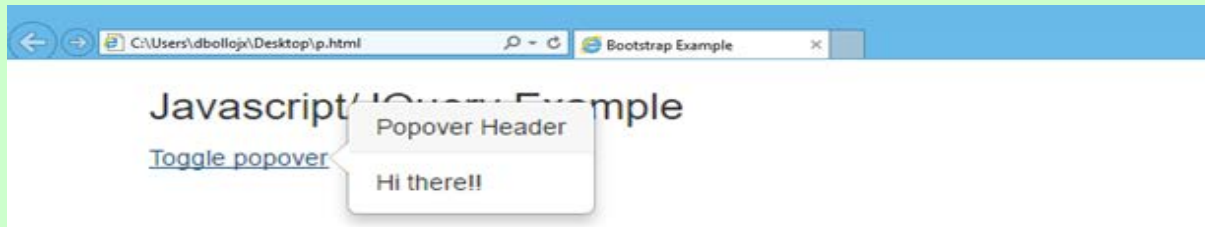
- Glyphicons – The base class used is 'glyphicon' with `` tag.
- Navbars – The base class used is 'navbar' with `<nav>` tag.
- Input Groups – The base class used is '.input-group' with `<div>` tag.
- Pagination – The base class used is '.pagination' with `` tag.
- Page Headers – The base class used is '.page-header' with `<div>` tag.
- Badges – The base class used is '.badge' with `` tag.
- Panels – The base class used is '.panel' with `<div>` tag.
- List Groups – The base class used is '.list-group' with `` tag.
- Progress Bar – The base class used is '.progress' with `<div>` tag.

What are popovers? Explain in detail.

In Bootstrap, a popover is analogous to a tooltip. It refers to a pop-up dialog box appearing on clicking an element. However, unlike a tooltip, a popover can display much more content. It is not CSS-only plugin due to which it is essential to initialize it through jQuery.

The `data-toggle='popover'` initializes a popover for the Toggle popover link. The `title` attribute specifies the popover's header text, while the `data-content` attribute holds the text that the popover should display in its body.

The jQuery statement, `$('[data-toggle='popover']').popover()`, selects the element that has the `data-toggle` property set to `popover` and invokes the `popover()` method.



Given figure shows the output when a user clicks the toggle popover link.



What are events and explain event delegation in jQuery with an example?

An event denotes the exact moment when an action from a user occurs. A few examples of events include loading a Webpage, clicking an element, selecting a check box, and hovering the mouse over an element.

When an event is raised, an event listener, which is associated with source of event, listens to it and notifies the handler. An event handler, which is associated with the event, is usually a custom function that conveys what to do for handling the event. In jQuery, event delegation enables a Web developer to assign a single listener to a parent element, which will listen for all descendants corresponding to a selector.

For example, let's assume that there is a parent `` element with 50 child elements. Something should happen when a user clicks any child element. For this, a Web developer may add a distinct event listener to each `` element. However, a problem arises when the developer frequently tends to add and remove these child elements. In this case, adding and removing the listeners would be a tedious job and may lead to performance issues. So, it would be much better to add a listener to the parent element.

What are the benefits of jQuery over JS?

There are many JS frameworks available but jQuery is perhaps the most extendable one. Following are the benefits of using jQuery over JS or other JS libraries:

- **Unobtrusive JS:** jQuery helps in designing Webpages through unobtrusive JS, an approach that separates functionality between the presentation and structure of a Webpage. In other words, inserting an event code in the script tag keeps the behavior separate from the Webpage's structure or content.
- **Lightweight:** The reduced library size is in Kilobytes (KB), which is perhaps smaller than that of a digital photo file. The jQuery version 2.x is smaller than the version 1.x. The browser needs to download it once and cache it for using it in all Webpages of a site. In case a Web developer relies upon a Content Delivery Network (CDN), the browser tends to cache the library across several Websites instead of downloading for each.
- **Ease of Use:** This is due to the simple yet robust syntax and significantly reduced lines of JS code. The syntax makes it simple to select the page elements that need a change. For this, the library uses CSS3 selector specification, which eliminates the need to learn the jQuery syntax.
- **Big and Focused Library:** Unlike other JS libraries, Web developers can perform a variety of functions. Further, to make JS tasks easier, jQuery offers several utility functions. With these functions, Web developers can parse data, trim strings, and search for array elements based on a filter. However, the library is focused, which means it contains only essential features. A Webpage downloads only those features that it requires.
- **Extensibility:** jQuery comes with a plugin framework due to which it is simple to extend jQuery. The framework includes both third-party and official plugins. Therefore, if a feature does not exist in the library, a Web developer may include it through a plugin.

- **Browser Compatibility:** Just as in few other JS libraries, jQuery flawlessly resolves cross-browser issues. JS implementations tend to vary amongst browsers, which can take much time of Web developers to get the code working across browsers. However, the makers of jQuery have already implemented the code to display Webpages seamlessly across all major browsers.
- **Strong Community:** Although a new library, jQuery has an exclusive community through which the dedicated developers tend to improve its functionality. Through this community, there are several plugins available to accelerate the Web development process. Most of the plugins are secured and efficient.
- **AJAX Support:** jQuery easily allows creating AJAX templates for gaining the benefits of smoother interfaces and efficient loading. A user can perform an action on a Webpage without reloading the whole page.
- **Comprehensive Documentation:** Official Website of jQuery has in-depth documentation and tutorials, which helps even a beginner in programming to start easily.

What is a callback in jQuery?

A callback function runs once the current jQuery effect such as hide, fade, or slide, is over. Usually, in JS, execution occurs line by line. Nevertheless, when there is an effect to display, the next code line can execute even if the former is not over. This can lead to errors. To keep this risk away, a Web developer defines a callback function.

Its syntax is:

```
$(selector).hide(speed,callback);
```

where,

- speed: Is optional and indicates the speed of hiding an element in milliseconds or as fast or slow.
- callback: Is optional and indicates the name of a callback function to run after hide() executes completely.



What are the differences between POST and GET methods in jQuery?

The differences between POST and GET methods of jQuery are as follows:

S.No	Point of Distinction	\$.get()	\$.post()
1	Functionality	Is mainly for obtaining data from a Web server although it can send data.	Is mainly for changing data on a Web server although it can send data.
2	Caching	Is capable of caching the requested data and returning it.	Does not cache data.
3	Method of Sending Data	Appends data to the URL as a query string.	Includes the data in the message body.
4	Limitation on Data to be Sent	Puts a limit on the amount of data to be sent because of the limit on the length of the data passed to an URL.	Has no such limitation.

What are predefined grid classes in Bootstrap?

Bootstrap 3 provides predefined grid classes for designing responsive layouts quickly for different devices. There are four such classes that form the four tiers of the grid system, which are as follows:

- xs, which is for extra small screens
- sm, which is for small screens
- md, which is for medium-sized screens
- lg, which is for large screens

A Web developer can use one or more of these classes to design a more dynamic and fluid layout.

What are grids for different devices? Explain each in brief.

A grid system differs as per the devices in terms of layout. In simple words, for each type of device, the grid system has a distinct split percentage for columns in a row. Following are the four types of grids, each suitable for different devices:

1. **Stacked or horizontal** - This grid system loads as a stack on small devices such as mobile phones prior to being horizontal on medium or large devices.
2. **Grid Layout for Small Devices** - Small devices possess a screen whose width is between 768 and 991 pixels. For these devices, Web developers should use the .col-sm-* classes.
3. **Grid Layout for Medium Devices** - These possess a screen whose width is between 992 and 1199 pixels. For these devices, a Web developer should specify the .col-md-* classes.
4. **Grid Layout for Large Devices** - Their screens is at least 1200 pixels. For these devices, a Web developer should specify the .col-lg-* classes.

What are HTML tables in Bootstrap? Brief each type of table.

An HTML table displays data in a grid layout that consists of rows and columns. Bootstrap helps in improving the appearance of an HTML table by providing built-in CSS classes. A basic Bootstrap table features distinct appearance in terms of only horizontal splitters and slight padding of 8 pixels. For applying this basic style, Bootstrap offers the `.table` class.

The types of tables in Bootstrap are as follows:

1. **Stripped Rows Table** - A Web developer can create a table with alternate rows having a background color differing from its previous one. It gives an appearance of zebra stripes. To give this effect to a table, Bootstrap offers the `.table-striped` class, which a Web developer needs to add to the `.table` base class.
2. **Bordered Table** - By default, a Bootstrap table only has horizontal dividers. This means that there are only horizontal borders. However, Bootstrap enables adding borders on all sides of a table. It does so by offering the `.table-bordered` class, which should be added to the base class.
3. **Hover Effect on Rows Table** - Bootstrap allows Web developers to apply a hover effect to table rows. The row on which a user moves the mouse shows a gray background. To apply a hover effect, Bootstrap offers the `.table-hover` class, which should be added to the base class.
4. **Condensed or Compact Table** - Bootstrap allows making a table more condensed by reducing cell padding by half. This saves space around the cells. To make a table more compact, Bootstrap offers the `.table-condensed` class, which should be added to the base class.
5. **Emphasis on Table Rows** - Bootstrap offers a few contextual classes for emphasizing a cell or a complete row. They indicate success, warning, info, or danger by changing the color of the background of a row or a cell.
6. **Responsive Table** - Bootstrap 3 activates horizontal scrolling on a small device whose screen width is not more than 768 pixels. Nevertheless, the same table on other devices with a larger screen will not show any difference. Bootstrap offers the `.table-responsive` class for making a table responsive.



What do you mean by Bootstrap Wells?

In Bootstrap, a well is a container component to apply an inset style to a block-level element or sunken effect to its content. It is useful when a Web developer intends to insert content inside a box such that it stands apart from the other contents on that Webpage.

To define a well, a Web developer needs to wrap the content with a `<div>` containing the `.well` class. This class applies a rounded border with some padding and a gray background color.

It is also possible to change the well's size by controlling its padding. This is done with the help of two modifier classes namely, `.well-lg` and `.well-sm`. These optional classes work by modifying the default padding and size of the base class, `.well`. They render a well smaller or larger depending on the class a Web developer specifies with the base class.



---End of FAQ---