Bootstrap

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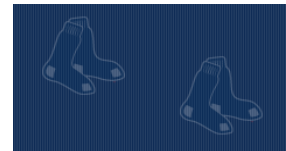
What is Bootstrap?

- ☐ Bootstrap is a free front-end framework for faster and easier web development.

- ☐ Bootstrap includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many other.

- ☐ Bootstrap also gives you the ability to easily create responsive web designs (RWD).

- ☐ Bootstrap 5 is the new version:

  - ▣ https://getbootstrap.com/docs/5.0/getting-started/introduction/

  - ▣ https://www.w3schools.com/bootstrap5/index.php

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Bootstrap 5

□ Bootstrap 5 (BS5), released 2021, is the newest version of Bootstrap (released 2013).

□ Bootstrap 5 supports the latest, stable releases of all major browsers and platforms.

◘ However, Internet Explorer 11 and down is not supported.

□ The main differences between Bootstrap 5 and Bootstrap 3 & 4, is that Bootstrap 5 has switched to vanilla JavaScript instead of jQuery.

□ CheatSheet for BS5:

◘ https://getbootstrap.com/docs/5.0/examples/cheatsheet/

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Advantages of Bootstrap

- ☐ Easy to use

- ☐ Responsive features

- ☐ Mobile-first approach

- ☐ Browser compatibility

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First Bootstrap Example

```
<div class="container-fluid p-5 bg-primary text-white text-center">
  <h1>My First Bootstrap Page</h1>
  <p>Resize this responsive page to see the effect!</p>
</div>

<div class="container mt-5">
  <div class="row">
    <div class="col-sm-4">
      <h3>Column 1</h3>
      <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit...</p>
      <p>Ut enim ad minim veniam, quis nostrud exercitation ullamco
laboris...</p>
    </div>
    …
    </div>
  </div>
</div>
```

Where to Get Bootstrap 5?

- There are two ways to start using Bootstrap 5 on your own web site.

- You can:

  - Include Bootstrap 5 from a CDN

    ```html
    <!-- Latest compiled and minified CSS -->
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.3/dist/css/bootstrap.min.css" rel="stylesheet">

    <!-- Latest compiled JavaScript -->
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.3/dist/js/bootstrap.bundle.min.js"></script>
    ```

  - Download Bootstrap 5 from getbootstrap.com

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Two Basic Bootstrap 5 Pages

☐ Container Example

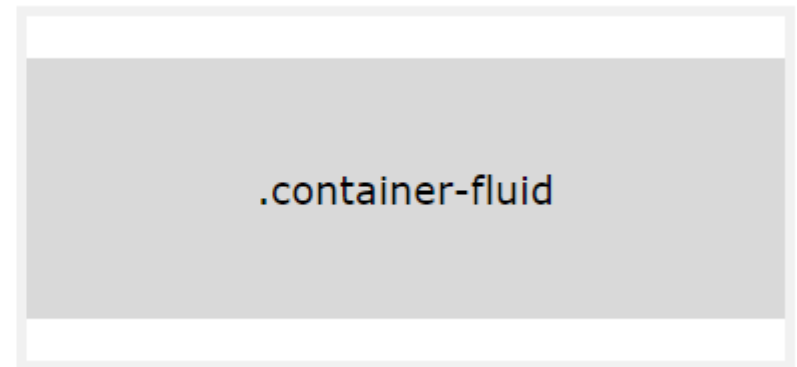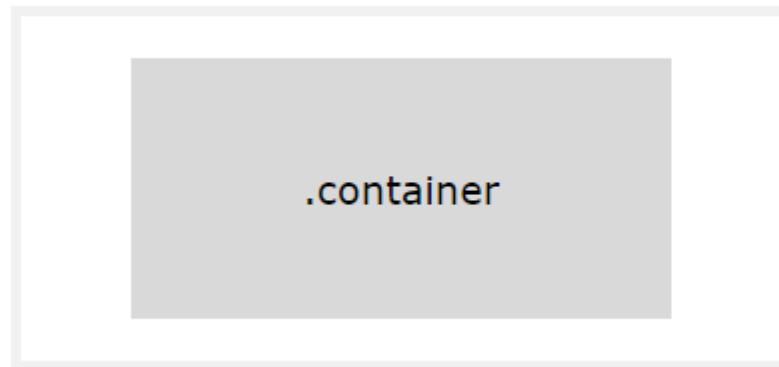◧ https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_gs_container&stacked=h

☐ Container Fluid Example

◧ https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_gs_container-fluid&stacked=h

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Containers

- Containers are used to pad the content inside of them, and there are two container classes available:
  - The .container class provides a responsive fixed width container
  - The .container-fluid class provides a full width container, spanning the entire width of the viewport

.container

.container-fluid

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Fixed Container

□ Use the .container class to create a responsive, fixed-width container.

□ Note that its width (max-width) will change on different screen sizes:

	Extra small <576px	Small ≥576px	Medium ≥768px	Large ≥992px	Extra Large ≥1200px	XXL ≥1400px
max-width	100%	540px	720px	960px	1140px	1320px

Example:
https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_default&stacked=h

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Fluid Container

□ Use the .container-fluid class to create a full width container, that will always span the entire width of the screen (width is always 100%):

Example:
https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_gs_container-fluid&stacked=h

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Container Padding[1]

- By default, containers have left and right padding, with no top or bottom padding.

- We often use spacing utilities, such as extra padding and margins to make them look even better.

  - For example, .pt-5 means "add a large top padding".

  - Spacing Rules:
    https://getbootstrap.com/docs/5.0/utilities/spacing/#gap

  - Example:
    https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_container_padding&stacked=h

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Container Padding$_2$

- Size rule:
  - 0 - for classes that eliminate the margin or padding by setting it to 0
  - 1 - (by default) for classes that set the margin or padding to $spacer * .25
  - 2 - (by default) for classes that set the margin or padding to $spacer * .5
  - 3 - (by default) for classes that set the margin or padding to $spacer
  - 4 - (by default) for classes that set the margin or padding to $spacer * 1.5
  - 5 - (by default) for classes that set the margin or padding to $spacer * 3
  - auto - for classes that set the margin to auto

預設$space: 1 rem
rem (root-level em) 是指root層級的em (大小比較穩定)

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Container Border and Color

- Other utilities, such as borders and colors, are also often used together with containers.
    - Example: https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_container_color&stacked=h

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Responsive Containers

- You can also use the .container-sm|md|lg|xl classes to create responsive containers.

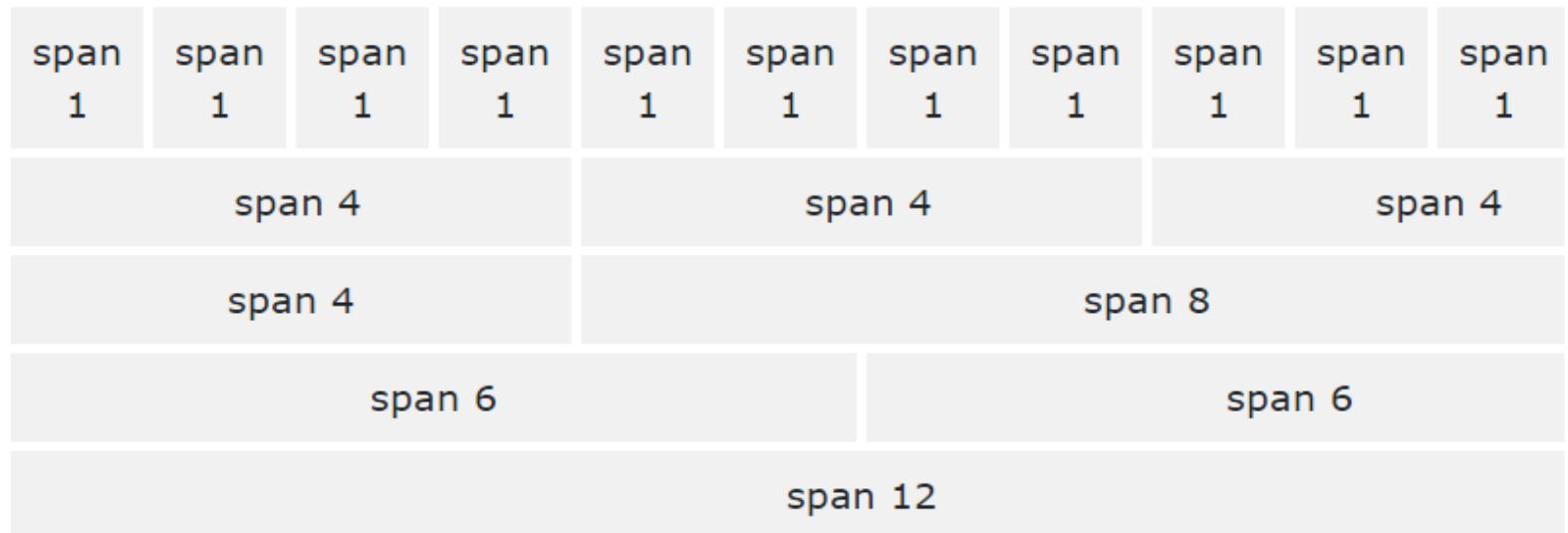- The max-width of the container will change on different screen sizes/viewports.

Class	Extra small <576px	Small ≥576px	Medium ≥768px	Large ≥992px	Extra large ≥1200px	XXL ≥1400px
.container-sm	100%	540px	720px	960px	1140px	1320px
.container-md	100%	100%	720px	960px	1140px	1320px
.container-lg	100%	100%	100%	960px	1140px	1320px
.container-xl	100%	100%	100%	100%	1140px	1320px
.container-xxl	100%	100%	100%	100%	100%	1320px

https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs _container_resp&stacked=h

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Bootstrap 5 Grid System

- Bootstrap's grid system is built with **flexbox** and allows up to 12 columns across the page.

- If you do not want to use all 12 columns individually, you can group the columns together to create wider columns.

span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1
span 4				span 4				span 4			
span 4				span 8							
span 6						span 6					
span 12											

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Grid Classes

- The Bootstrap 5 grid system has five classes:

  - *.col- (extra small devices - screen width less than 576px)*

  - *.col-sm- (small devices - screen width equal to or greater than 576px)*

  - *.col-md- (medium devices - screen width equal to or greater than 768px)*

  - *.col-lg- (large devices - screen width equal to or greater than 992px)*

  - *.col-xl- (xlarge devices - screen width equal to or greater than 1200px)*

- Each class scales up, so if you wish to set the same widths for *sm* and *md*, you only need to specify *sm*.

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Basic Structure of a Bootstrap 5 Grid

```html
<!-- Control the column width, and how they should appear on
different devices -->
<div class="row">
  <div class="col-*-*"></div>
  <div class="col-*-*"></div>
</div>
<div class="row">
  <div class="col-*-*"></div>
  <div class="col-*-*"></div>
  <div class="col-*-*"></div>
</div>

<!-- Or let Bootstrap automatically handle the layout -->
<div class="row">
  <div class="col"></div>
  <div class="col"></div>
  <div class="col"></div>
</div>
```

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Examples of Grid System

- Three equal width columns:
  - https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_grid_ex&stacked=h
- Responsive Columns:
  - https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_grid_ex1&stacked=h
  - On mobile phones or screens that are less than 576px wide, the columns will automatically stack on top of each other.
- Two Unequal Responsive Columns:
  - https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_grid_ex2&stacked=h

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Bootstrap 5 Colors

This text is muted.

This text is important.

This text indicates success.

This text represents some information.

This text represents a warning.

This text represents danger.

Secondary text.

Dark grey text.

Body text.

☐ Bootstrap 5 has some contextual classes that can be used to provide "meaning through colors".

☐ The classes for text colors are: *.text-muted, .text-primary, .text-success, .text-info, .text-warning, .text-danger, .text-secondary, .text-white, .text-dark, .text-body (default body color/often black) and .text-light.*

https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_txt_colors&stacked=h

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Bootstrap 5 Background Colors

- The classes for background colors are: .bg-primary, .bg-success, .bg-info, .bg-warning, .bg-danger, .bg-secondary, .bg-dark and .bg-light.

  - https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_txt_bgcolors&stacked=h

Bootstrap 5 Table[1]

□ A basic Bootstrap 5 table has a light padding and horizontal dividers.

 ◪ https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_table_basic&stacked=h

□ The .table-striped class adds zebra-stripes to a table.

 ◪ https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_table_striped&stacked=h

□ The .table-bordered class adds borders on all sides of the table and cells.

 ◪ https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_table_bordered&stacked=h

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Bootstrap 5 Table₂

□ The .table-responsive class adds a scrollbar to the table when needed (when it is too big horizontally).

  ◘ https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_table_responsive

  ◘ You can also decide when the table should get a scrollbar, depending on screen width.

    ■ https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_table_responsive_sm (留意瀏覽器和頁面的scrollbar)

Class	Screen width
.table-responsive-sm	< 576px
.table-responsive-md	< 768px
.table-responsive-lg	< 992px
.table-responsive-xl	< 1200px

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Bootstrap 5 Image

Rounded Corners:

Circle:

Thumbnail:

https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_img_rounded&stacked=h

https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_img_circle&stacked=h

https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_img_thumbnail&stacked=h

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Responsive Images

- Responsive images automatically adjust to fit the size of the screen.
    - Create responsive images by adding an .img-fluid class to the <img> tag. The image will then scale nicely to the parent element.
    - The .img-fluid class applies max-width: 100%; and height: auto; to the image.

    Example:
    https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_img_responsive&stacked=h

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Bootstrap 5 Jumbotron

- A jumbotron (大橫幅) indicates a big grey box for calling extra attention to some special content or information.

  - Inside a jumbotron you can put nearly any valid HTML, including other Bootstrap elements/classes.

Example of Jumbotron

Jumbotron Example

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat..

https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_jumbotron&stacked=h

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Bootstrap 5 Alerts

☐ Bootstrap 5 provides an easy way to create predefined alert messages.

> **Success!** This alert box indicates a successful or positive action. ✕
>
> **Info!** This alert box indicates a neutral informative change or action. ✕
>
> **Warning!** This alert box indicates a warning that might need attention. ✕
>
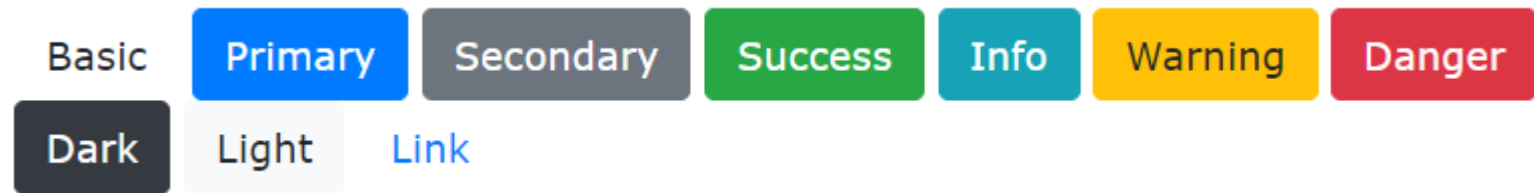> **Danger!** This alert box indicates a dangerous or potentially negative action. ✕

☐ Example of Closing Alerts:

◘ https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_alerts_dismissible&stacked=h

◘ https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_alerts_fade&stacked=h

◘ HTML自訂屬性：https://developer.mozilla.org/zh-TW/docs/Web/HTML/Global_attributes/data-*

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Bootstrap 5 Buttons

☐ Bootstrap 5 provides different styles of buttons.

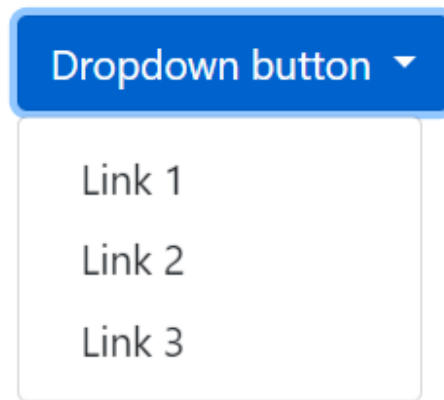| Basic | Primary | Secondary | Success | Info | Warning | Danger |
| Dark | Light | Link |

- https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_button_styles&stacked=h
- https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_spinners_buttons&stacked=h

☐ Bootstrap 5 allows you to group a series of buttons together (on a single line) in a button group.

- Nesting Button Groups & Dropdown Menus: https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_button_group&stacked=h

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Bootstrap 5 Dropdowns

☐ A dropdown menu is a toggleable menu that allows the user to choose one value from a predefined list.

Example:
https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_dropdown-menu&stacked=h

Bootstrap 5 Badges[1]

□ Badges are used to add additional information to any content.

  ⬚ Use the .badge class together with a contextual class (like .badge-secondary) within <span> elements to create rectangular badges.

Example:
https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_badges&stacked=h

Badges

Example heading `New`

Example heading `New`

Example heading `New`

Example heading `New`

Example heading `New`

Example heading `New`

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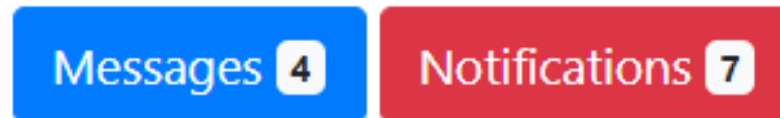
Bootstrap 5 Badges2

Badge inside an Element:

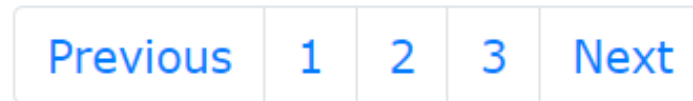https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_badges_button&stacked=h

Bootstrap 5 Pagination₁

□ If you have a web site with lots of pages, you may wish to add some sort of pagination to each page.

▫ To create a basic pagination, add the .pagination class to an <ul> element. Then add the .page-item to each <li> element and a .page-link class to each link inside <li>.

| Previous | 1 | 2 | 3 | Next |

Example:
https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_pagination&stacked=h

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Bootstrap 5 Pagination₂

□ Another form for pagination, is breadcrumbs:

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▣ The .breadcrumb and .breadcrumb-item classes indicates the current page's location within a navigational hierarchy.

Example:
https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_breadcrumbs&stacked=h

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Bootstrap 5 List Groups

- The most basic list group is an unordered list with list items.

  - To create a basic list group, use an <ul> element with class .list-group, and <li> elements with class .list-group-item.

| First item |
| Second item |
| Third item |

Example:
https://www.w3schools.com/bootstrap4/tryit.asp?filename=trybs_list_group&stacked=h

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Bootstrap 5 Cards

- A card in Bootstrap 5 is a bordered box with some padding around its content.

  - It includes options for headers, footers, content, colors, etc.

  - Card header and footer: https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_card_header&stacked=h

- Add .card-img-top or .card-img-bottom to an <img> to place the image at the top or at the bottom inside the card.

  - https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_card_image&stacked=h

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Bootstrap 5 Collapse

- Collapsibles are useful when you want to hide and show large amount of content.
  - The .collapse class indicates a collapsible element (a <div> in our example)
    - This is the content that will be shown or hidden with a click of a button.
  - To control (show/hide) the collapsible content
    - Add the data-bs-toggle="collapse" attribute to an <a> or a <button> element.
    - Add the data-bs-target="#id" attribute to connect the button with the collapsible content (<div id="demo">).

  Example:
  https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_collapsible&stacked=h

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Bootstrap 5 Navs

☐ If you want to create a simple horizontal menu, add the .nav class to a <ul> element, followed by .nav-item for each <li> and add the .nav-link class to their links.

Example:
https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_nav&stacked=h

Example of Tab:
https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_nav_tabs&stacked=h

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Bootstrap 5 Forms

- Form controls automatically receive some global styling with Bootstrap:
  - All textual <input>, <textarea>, and <select> elements with class .form-control have a width of 100%.

- Standard rules:
  - Add class .form-control to all textual <input>, <textarea>, and <select> elements
    - https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_form&stacked=h

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Bootstrap 5 Carousel[1]

- The Carousel (輪播) is a slideshow for cycling through elements.

Bootstrap 5 Carousel2

Example: https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_carousel

Class	Description
.carousel	Creates a carousel
.carousel-indicators	Adds indicators for the carousel. These are the little dots at the bottom of each slide (which indicates how many slides there are in the carousel, and which slide the user are currently viewing)
.carousel-inner	Adds slides to the carousel
.carousel-item	Specifies the content of each slide
.carousel-control-prev	Adds a left (previous) button to the carousel, which allows the user to go back between the slides
.carousel-control-next	Adds a right (next) button to the carousel, which allows the user to go forward between the slides
.carousel-control-prev-icon	Used together with .carousel-control-prev to create a "previous" button
.carousel-control-next-icon	Used together with .carousel-control-next to create a "next" button
.slide	Adds a CSS transition and animation effect when sliding from one item to the next. Remove this class if you do not want this effect

Bootstrap 5 Modal

□ The Modal plugin is a dialog box/popup window that is displayed on top of the current page.

Example:
https://www.w3schools.com/bootstrap5/tryit.asp?filename=trybs_modal&stacked=h

- data-bs-toggle="modal" opens the modal window
- data-bs-target="#myModal" points to the id of the modal
- The .modal-header class is used to define the style for the header of the modal.
- The .modal-body class is used to define the style for the body of the modal.
- The .modal-footer class is used to define the style for the footer of the modal.

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Any Question?