

Responsive Web Design and Bootstrap

the beginning of a new era in the Web

Eng. Niveen Nasr El-Den
SD & Gaming CoE
iTi



Day 2

Styling Frameworks

■ CSS Frameworks

- ▷ It has fixed set of basic CSS definitions
- ▷ Pre-defined css classes that makes page layout easy to implement for different screen width
- ▷ e.g. **Bootstrap**
 - It is the most popular responsive design framework for building web sites and web applications.

■ CSS Authoring Frameworks

- ▷ Help in writing your own css framework
- ▷ Where you have to write almost every CSS definition by your own it helps to write CSS rules
- ▷ e.g. **Compass**

Bootstrap

Designed for everyone, everywhere

Think Grid

Bootstrap

- The most popular HTML, CSS, and JS framework for developing responsive, mobile first projects on the web
- Started by Mark Otto and Jacob Thornton, while working at Twitter, as internal tool
- Supports all major browsers
- Current stable version is v5.0
- Easy to use

<http://getbootstrap.com>

[twitter.github.com/bootstrap](https://github.com/twbs/bootstrap)

<https://github.com/necolas/normalize.css/>

Why Bootstrap

- Popularity & Different Browser Support
- Rich CSS Features
 - ▷ Tables, Buttons Forms, Typography & Glyph Icon Set
- Layouts
 - ▷ Grid, Fluid Grid System & Responsive Design
- Components
 - ▷ Dropdowns, Navbar, Breadcrumbs, Alerts, Progress Bars..
- JavaScript Plugins (~13 plugin)
 - ▷ Popper.js
 - Modal Dialog Windows, Tabs, Carousel..
- Customization
 - ▷ Bootstrap provides a web-based customizer that allow you to generate a CSS file based on your specific needs

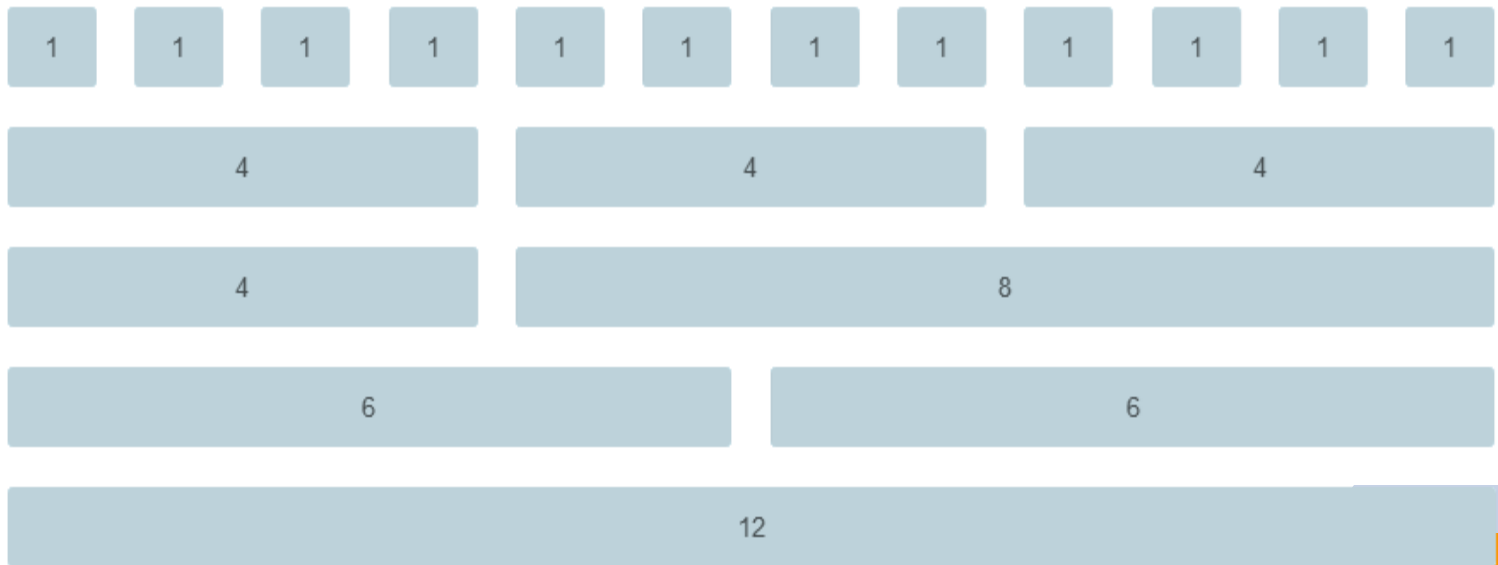
Bootstrap5 Template

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <title>Document</title>
  <link href="bootstrap-5.0.0-beta1-dist/css/bootstrap.css" rel="stylesheet">
</head>
<body>
  <script src="JS/popper.min.js"></script>
  <script src="bootstrap-5.0.0-beta1-dist/js/bootstrap.js"></script>
</body>
</html>
```

Bootstrap Grid System

Think Grid

- Bootstrap is using a grid system base on 12 columns, for creating page layouts
- Use predefined grid classes for making layouts
 - ▷ row, col-md-4, col-md-1, col-md-6,...



`.col-{screenSize}-{numberOfCol}`

Bootstrap Grid System

Think Grid

- For proper alignment and padding; rows must be placed within a

- ▷ .container (fixed-width)
- ▷ .container-fluid (full-width)

- Each row contains up to 12 columns

```
<div class="container">
  <div class="row">
    <div class="col-md-6">...</div>
    <div class="col-md-6">...</div>
  </div>
  <div class="row">
    <div class="col-sm-4">...</div>
    <div class="col-sm-4">...</div>
    <div class="col-sm-4">...</div>
    <!--<div class="col-*-*">...</div>-->
  </div>
</div>
```

Grid Size	Grid Class	Offset Class	Screen Size	Device
Extra Small	col-*	offset-*	less than 576px	portrait phones
Small	col-sm-*	offset-sm-*	576px+	landscape phones
Medium	col-md-*	offset-md-*	768px+	tablets
Large	col-lg-*	offset-lg-*	992px+	Desktops
Extra Large	col-xl-*	offset-xl-*	1200px+	Large Desktops

Bootstrap Framework

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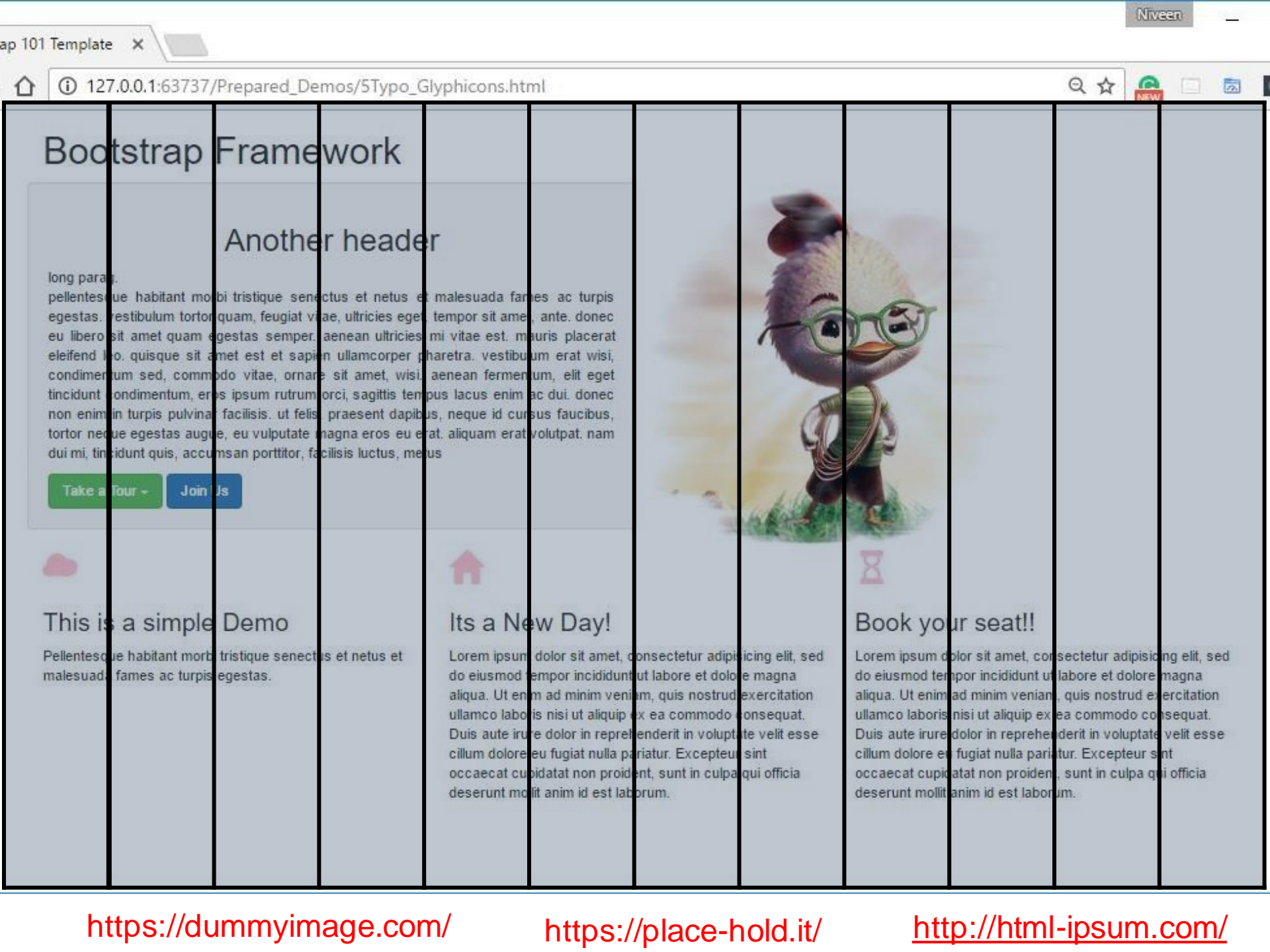
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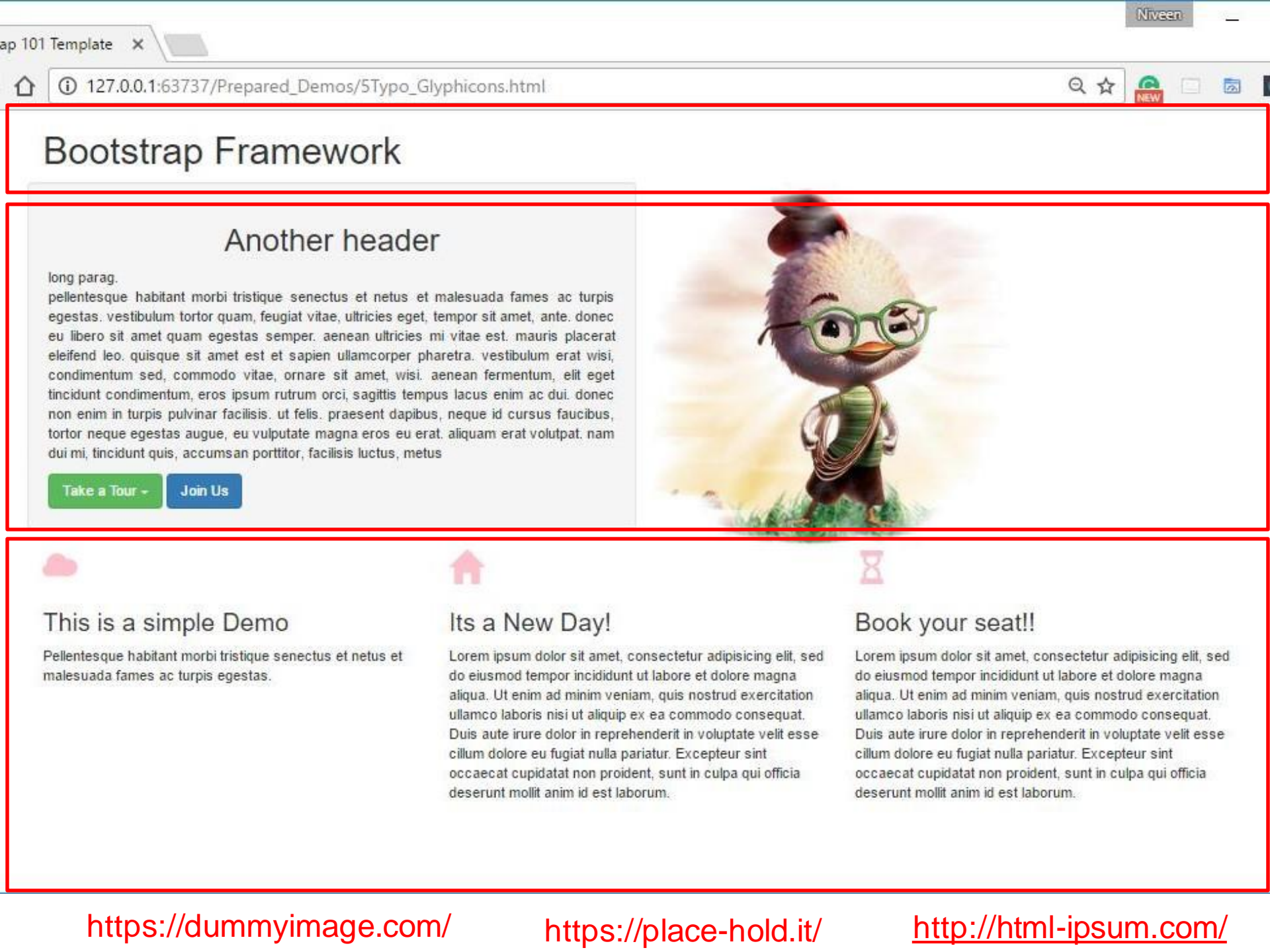
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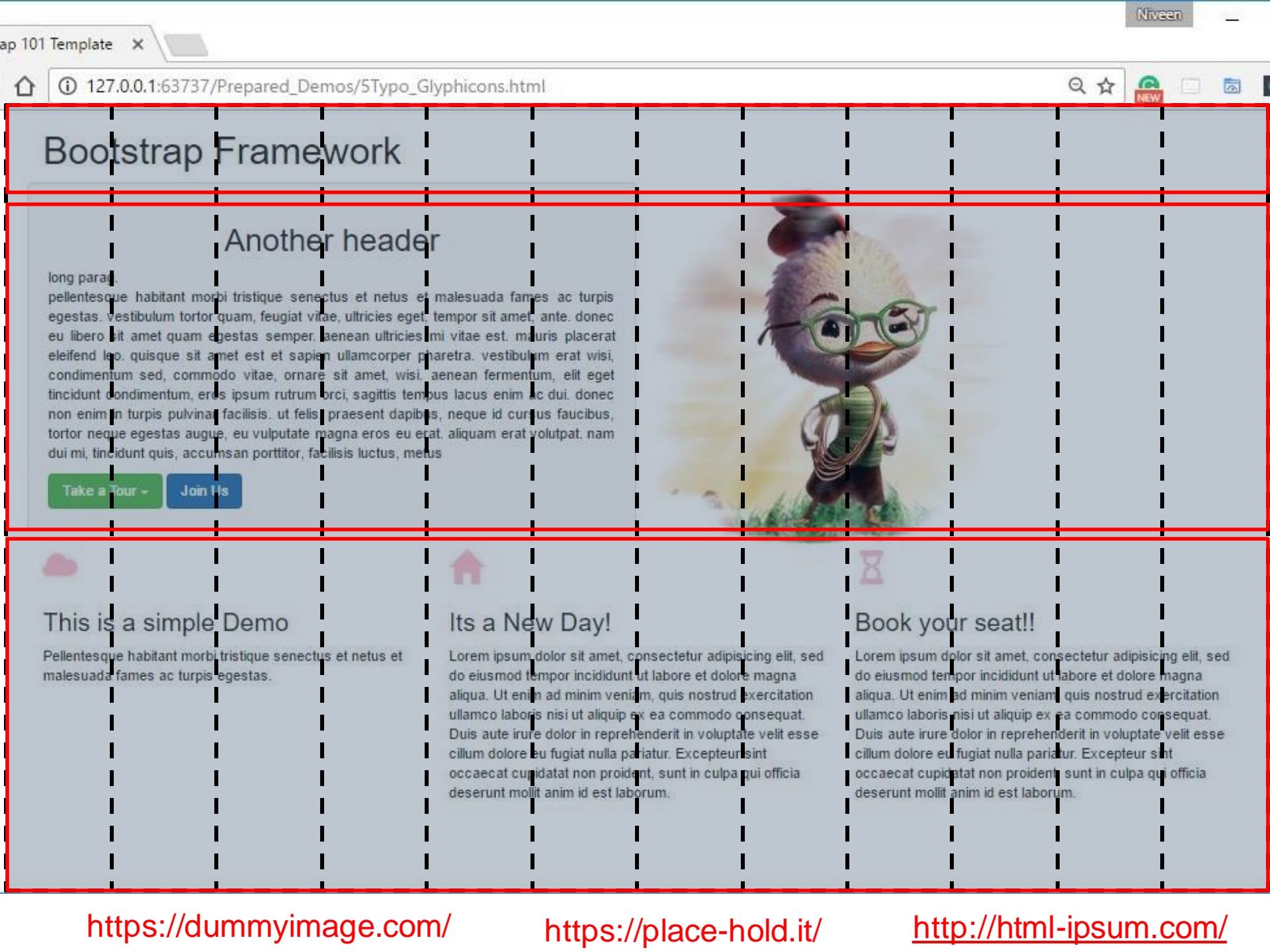
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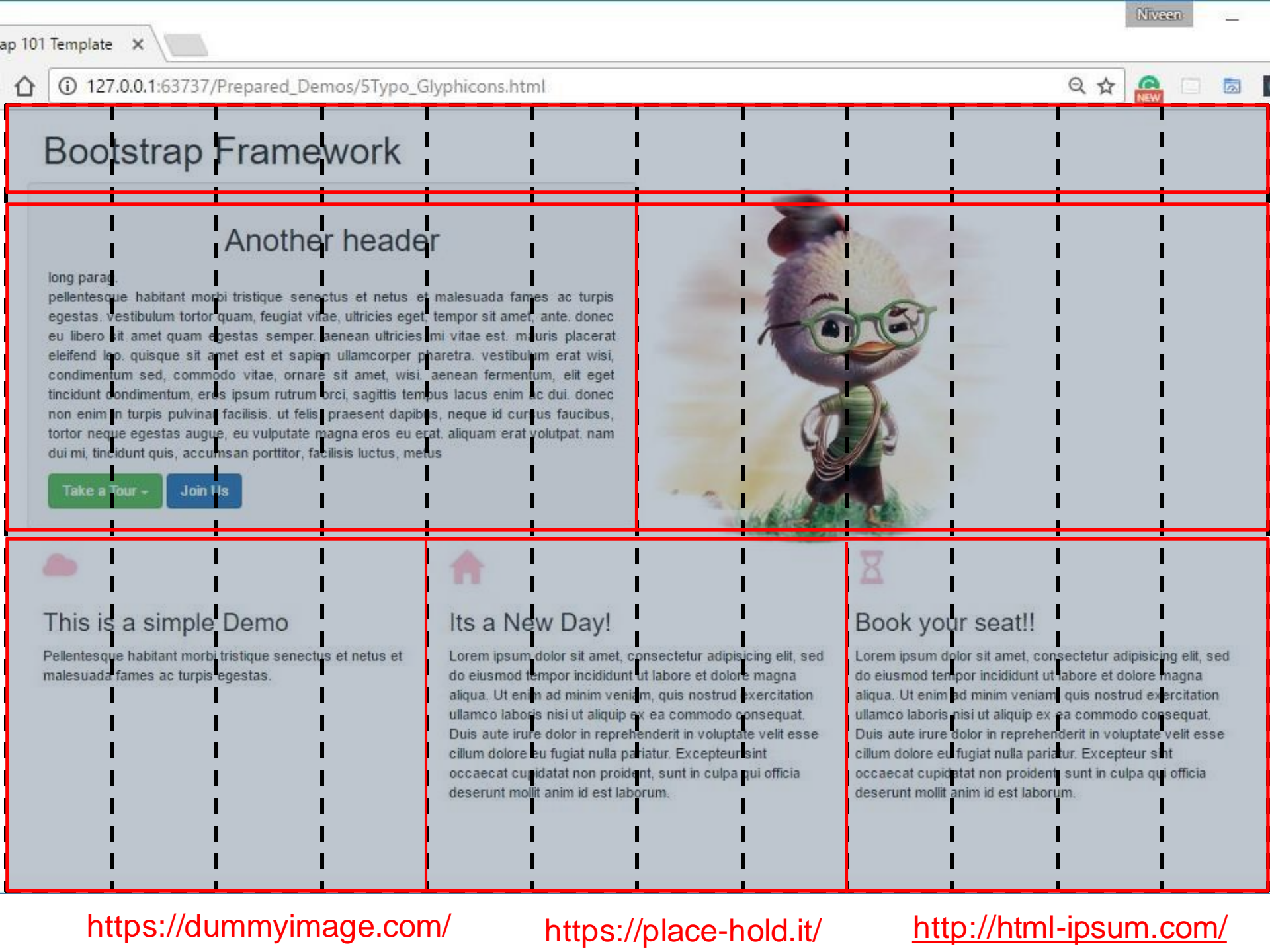
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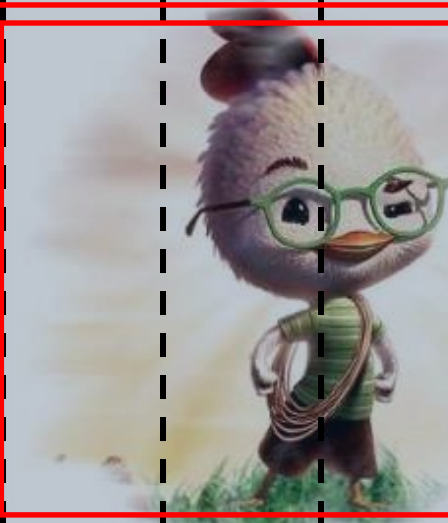
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Bootstrap Grid System Notes

- Including more than 12 cols will lead to moving into new row
- Instead of adding empty col for less cluttered appearance; use **offset-*-*** for adding left padding for a given number of cols
- For different layout & responsiveness use different grid classes & offsets
- Grid classes apply to devices with screen widths greater than or equal to the breakpoint sizes, and override grid classes targeted at smaller devices.
 - ▷ e.g. applying any **.col-md-*** class to an element will not only affect its styling on medium devices but also on large devices if a **.col-lg-*** class is not present.

Display Elements classes

- `.d-{value}`
- `.d-*- {value}`
- `*` could be either `sm`, `md`, `lg` or `xl`
- `{value}` could be `block`, `inline`, `inline-block`, etc.

content is visible
only for medium
and large resolution

```
<div class="col-md-4 d-none d-md-block">  
    
</div>
```


Show & Hide Classes

Screen Size	Class
Hidden on all	<code>d-none</code>
Hidden only on xs	<code>d-none d-sm-block</code>
Hidden only on sm	<code>d-sm-none d-md-block</code>
Hidden only on md	<code>d-md-none d-lg-block</code>
Hidden only on lg	<code>d-lg-none d-xl-block</code>
Hidden only on xl	<code>d-xl-none</code>
Visible on all	<code>d-block</code>
Visible only on xs	<code>d-block d-sm-none</code>
Visible only on sm	<code>d-none d-sm-block d-md-none</code>
Visible only on md	<code>d-none d-md-block d-lg-none</code>
Visible only on lg	<code>d-none d-lg-block d-xl-none</code>
Visible only on xl	<code>d-none d-xl-block</code>

.lead & .jumbotron classes

- Used to make sections stand out more
- **.lead** adds margins and importance appearance for the text
- **.jumbotron** adds grey background-color for gaining extra attention to text(version 4)
- The **.jumbotron** component is removed in favor of utility classes like **.bg-light** for the background color and **.p-*** classes to control padding.

Typography

- “The art and technique of arranging type to make written language most appealing”

Wikipedia

- we can create a new .css file for styling beyond what bootstrap offers
- Bootstrap offers the following Classes for text alignment:
 - ▷ text-start
 - ▷ text-end
 - ▷ text-nowrap
 - ▷ text-center
 - ▷ text-left
 - ▷ text-*.*
- Transformation classes
 - ▷ text-capitalize
 - ▷ text-lowercase
 - ▷ text-uppercase

Reminder: @rule

- At-rules are instructions or directives to the CSS parser. They can be used for a variety of purposes.
 - ▷ @charset
 - ▷ @import
 - ▷ @media
 - ▷ @page
 - ▷ @font-face
 - ▷ @namespace
 - ▷ @keyframe

Reminder: Font Style

@font-face & Different Formats



ttf



otf



svg



eot



woff



@font-face: allows specifying custom fonts

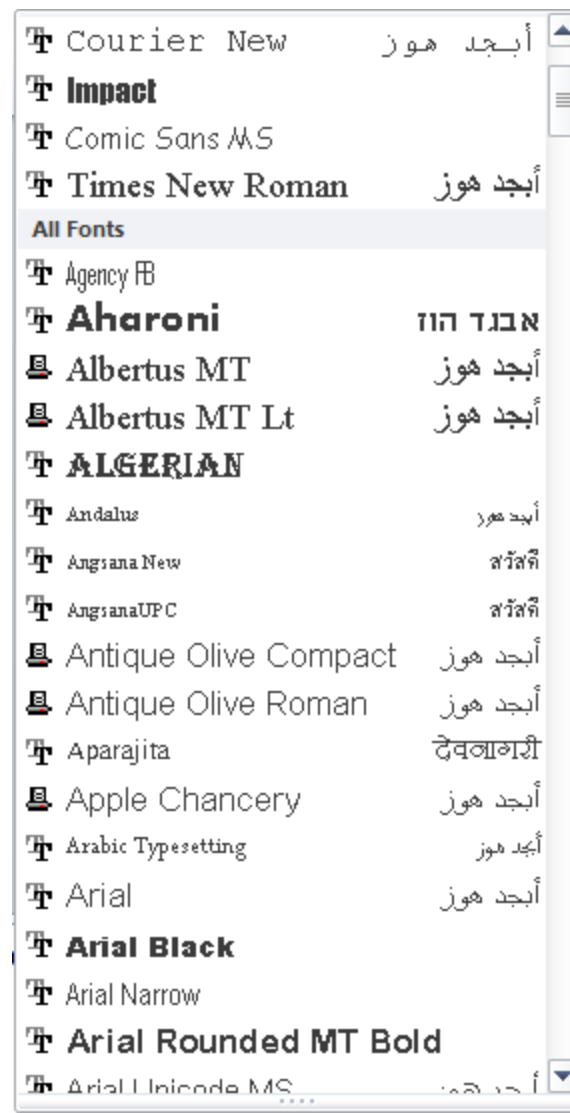
<http://fontsquirrel.com/>
<https://www.dafont.com/>

<https://fonts.google.com/>

Example!

Reminder: Font Collections

- **Serif**
 - ▷ Time New Roman
- **Sans-serif**
 - ▷ Arial
- **Cursive**
 - ▷ Comic sans
- **Fantasy**
 - ▷ **Impact**
- **Monospace**
 - ▷ Courier New



Icons and Fonts

- Earlier icons were plotted in websites using images
- Font awesome were fonts in bootstrap 4
- Its classes should be used only on elements with no content either text or element nodes
- New version of Bootstrap 5 come with library for icons

<http://fontawesome.io/>

Button Styles

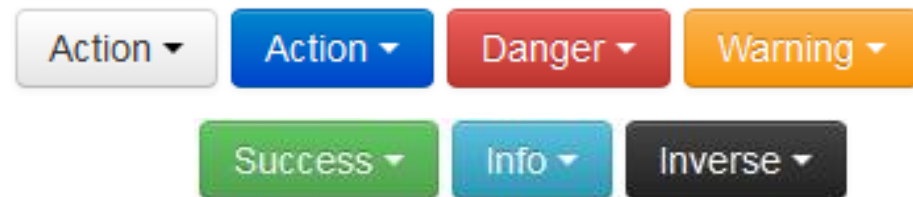
- Bootstrap standardize button style over all browsers
- Use the button classes on an `<a>`, `<button>`, or `<input>` element of type submit, reset or button.
- The `.btn` must be used, then specify styled class from the following if needed

- ▷ Classes for button size style

- `.btn-*` where `*` → sm or lg

- ▷ Classes for button color style

- | | | |
|-------------------------------|-----------------------------|-------------------------------|
| ▪ <code>.btn-primary</code> | ▪ <code>.btn-success</code> | ▪ <code>.btn-outline-*</code> |
| ▪ <code>.btn-secondary</code> | ▪ <code>.btn-danger</code> | ▪ <code>.btn-link</code> |
| ▪ <code>.btn-info</code> | ▪ <code>.btn-warning</code> | ▪ <code>.btn-block</code> |
| ▪ <code>.btn-light</code> | | |



Table

- Bootstrap has the following classes for table element:
 - ▷ .table class must be used for <table> then any of the following class according to design needs
 - table-striped
 - table-bordered
 - table-hover
 - table-responsive
 - table-responsive-*
 - table-sm
 - table-dark
 - ▷ For <thead> → <th>
 - thead-light
 - thead-dark
 - ▷ For <tr> & <td> we can add any of .table-* classes
 - Where * refers to either primary, secondary, active, success, warning, danger, info, light or dark
 - .bg-* can be used instead
 - ▷ Using <thead> and <tbody> is recommended



Assignments