Responsive Web Design and Bootstrap

the beginning of a new era in the Web

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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/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)
  - ▷ requires jQuery.js & 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

Bootstrap Template

```html
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <!--user-scalable=no-->
    <!-- The above 3 meta tags *must* come first in the head;
        any other head content must come *after* these tags -->
    <title>Bootstrap Template</title>
    <!-- Bootstrap -->
    <link href="./bootstrap4/css/bootstrap.min.css" rel="stylesheet" type="text/css" />

</head>

<body>
    <div></div>

    <!-- jQuery & popper (necessary for Bootstrap's JavaScript plugins) -->
    <script src="./js/jquery.min.js"></script>
    <script src="./js/popper.js"></script>
    <!-- Include all compiled plugins (below), or include individual files as needed -->
    <script src="./bootstrap4/js/bootstrap.min.js"></script>
</body>

</html>
```

Bootstrap5 Template

```html
<!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="sty
</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,…

| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| 4 | 4 | 4 |

| 4 | 8 |

| 6 | 6 |

| 12 |
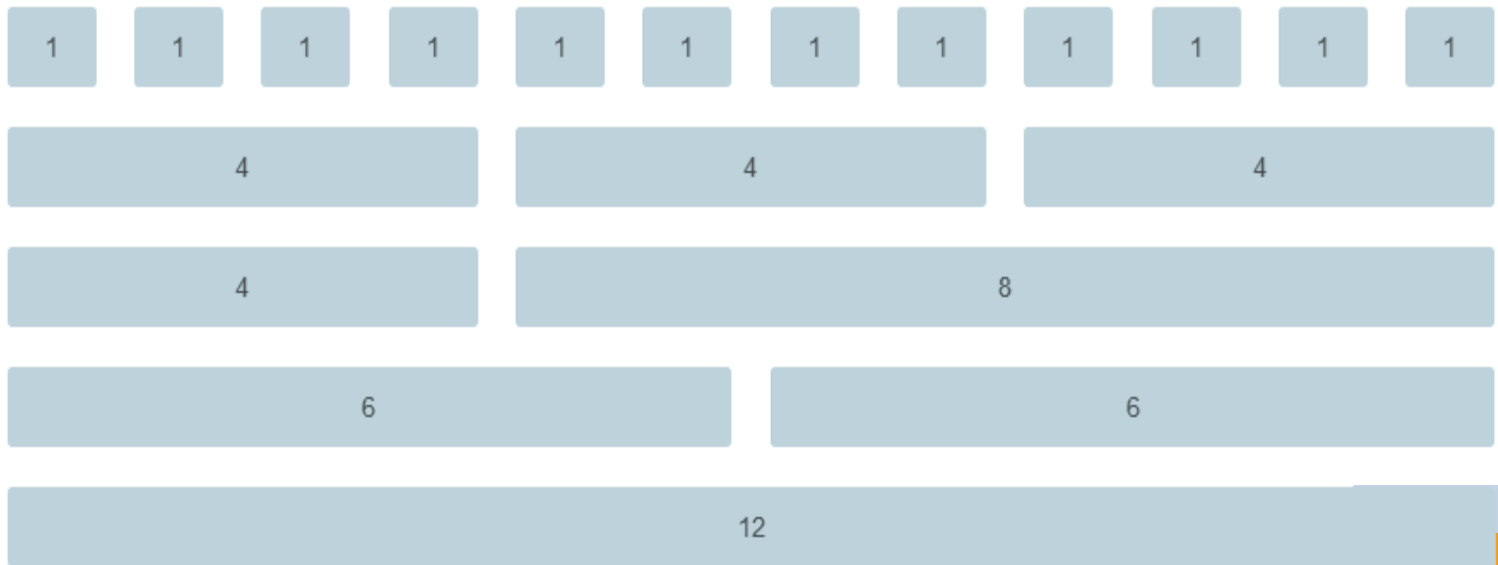
.col-{screenSize}-{numberOfCol}

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
Meduim	col-md-*	offset-md-*	768px+	tablets
Large	col-lg-*	offset-lg-*	992px+	Desktops
Extra Large	col-xl-*	offset-xl-*	1200px+	Large Desktops

ⓘ 127.0.0.1:63737/Prepared_Demos/5Typo_Glyphicons.html

Bootstrap Framework

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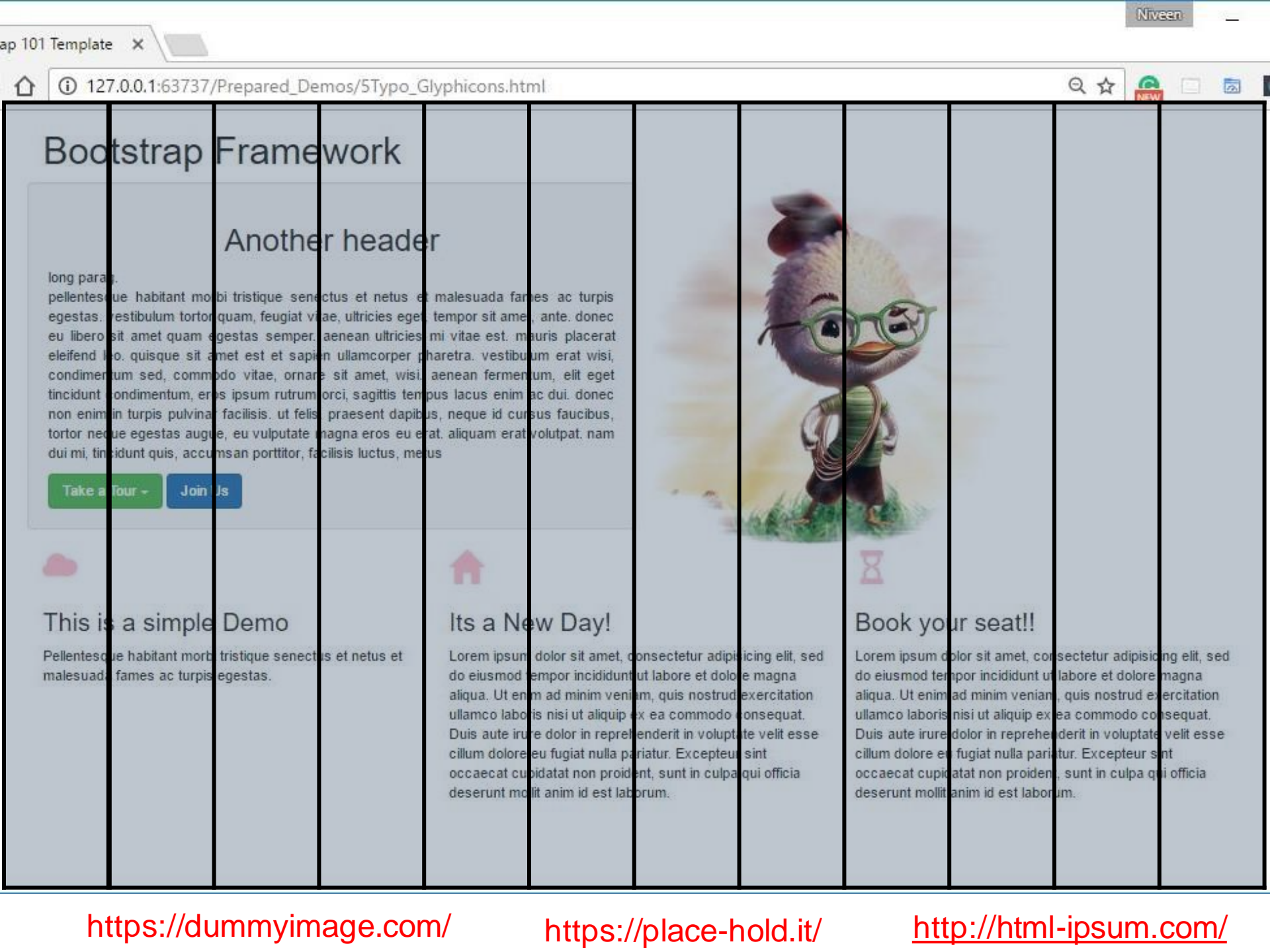Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.

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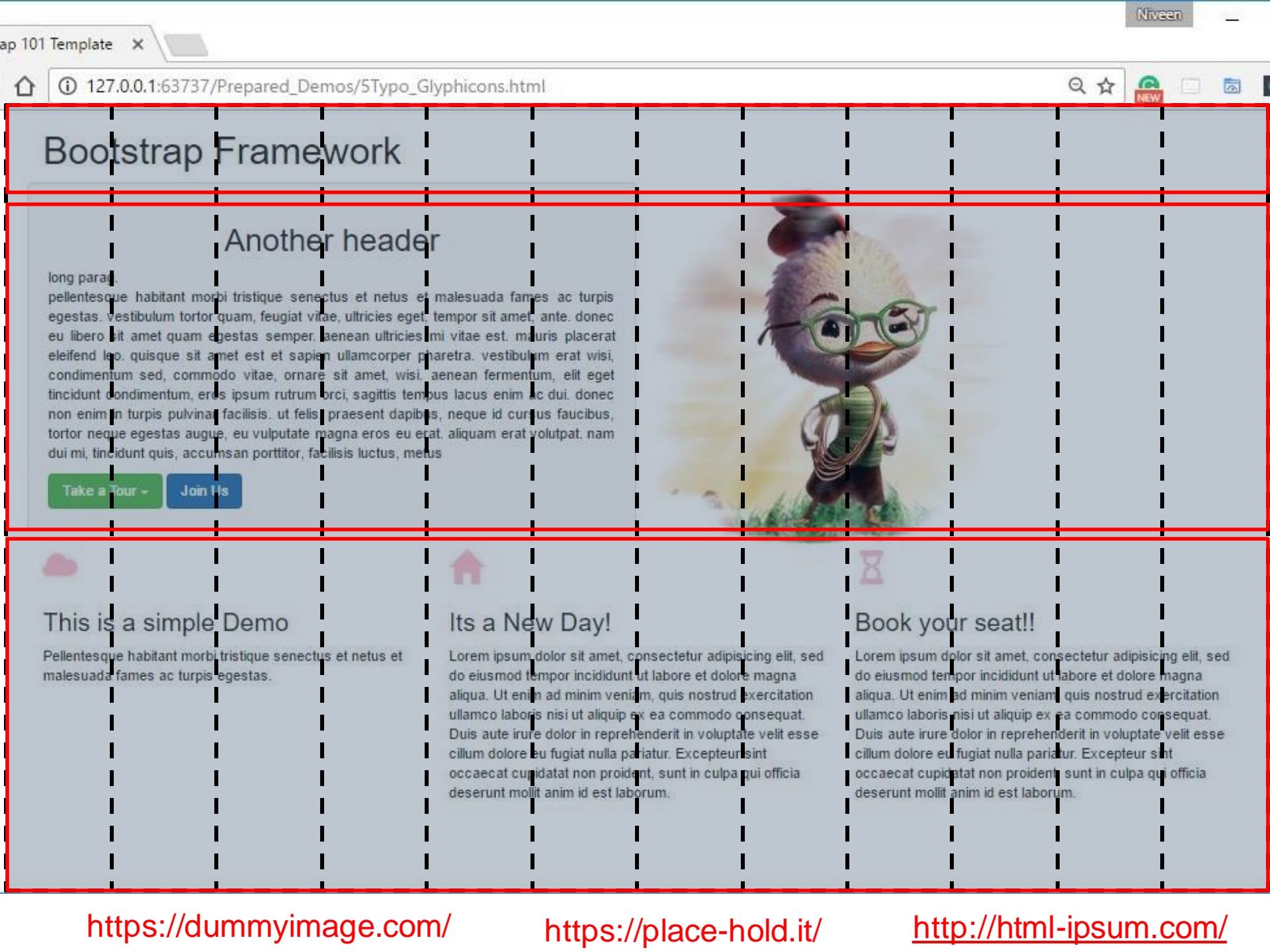
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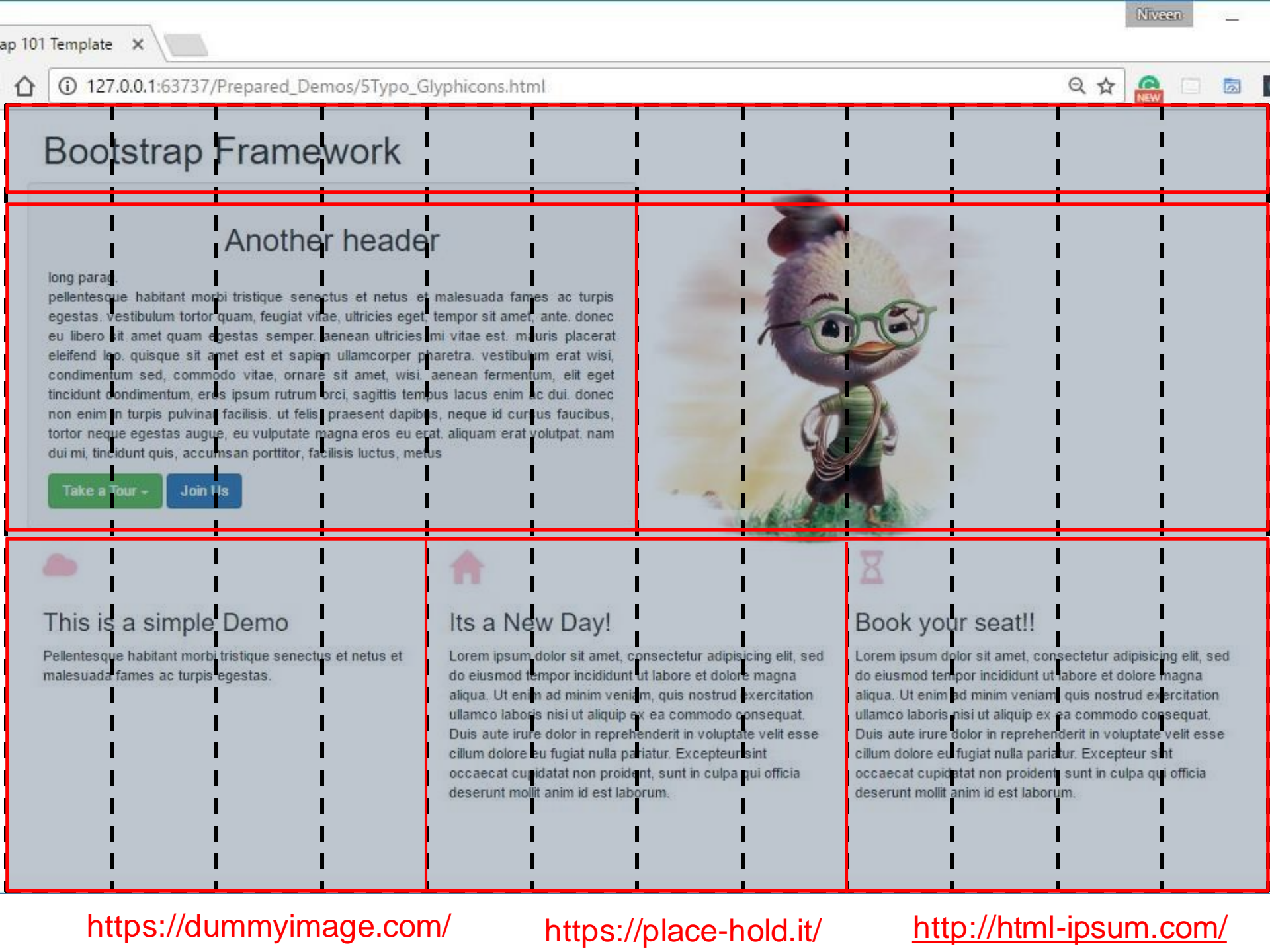[Take a Tour ▾] [Join Us]

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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">
    <img class="img-fluid" src="./images/3.jpeg">
</div>
```

https://getbootstrap.com/docs/4.0/utilities/display/#hiding-elements

Show & Hide Classes

Screen Size	Class
Hidden on all	`d-none`
Hidden only on xs	`d-none d-sm-block`
Hidden only on sm	`d-sm-none d-md-block`
Hidden only on md	`d-md-none d-lg-block`
Hidden only on lg	`d-lg-none d-xl-block`
Hidden only on xl	`d-xl-none`
Visible on all	`d-block`
Visible only on xs	`d-block d-sm-none`
Visible only on sm	`d-none d-sm-block d-md-none`
Visible only on md	`d-none d-md-block d-lg-none`
Visible only on lg	`d-none d-lg-block d-xl-none`
Visible only on xl	`d-none d-xl-block`

.lead & .jumbotron classes

- Used to make sections stands 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-justify
  - ▷ text-center
  - ▷ text-right
  - ▷ text-left
  - ▷ text-nowrap
  - ▷ 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

	Opera	Firefox	Safari	Internet Explorer	Chrome
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
- Fantacy
  - ▷ Impact
- Monospace
  - ▷ Courier New
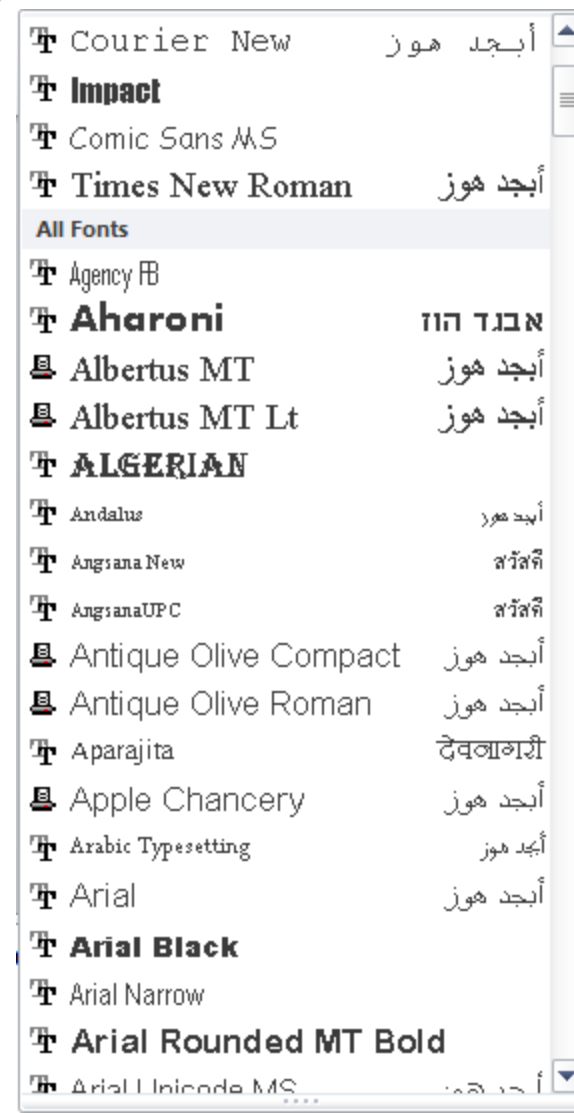
Icons and Fonts

- Earlier icons was 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/

- Use font awesome

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
    - ■ . btn-primary
    - ■ .btn-secondary
    - ■ .btn-info
    - ■ .btn-light
    - ■ .btn-success
    - ■ .btn-danger
    - ■ .btn-warning
    - ■ .btn-outline-*
    - ■ .btn-link
    - ■ .btn-block
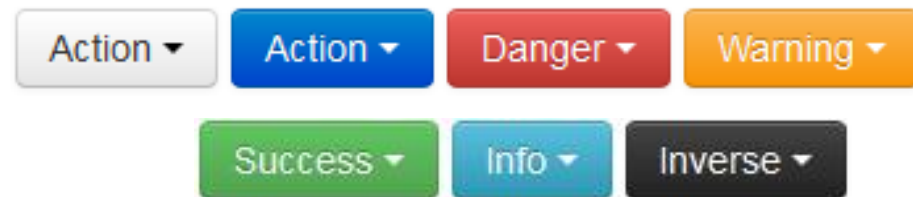
Table

- 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