

Bootstrap

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Understanding Responsive Web Design

Problem

Usha is in XII CBSE and she wants to get the sample question paper for Mathematics for the academic year 2019-20. She wants to get this from the CBSE web site <http://cbseacademic.nic.in>. She does not have a laptop and she use her mother's mobile to get the question paper.

Steps

- ❖ Open browser in your mobile phone.
- ❖ Go to the link <http://cbseacademic.nic.in/>
- ❖ The result looks, something like the below:



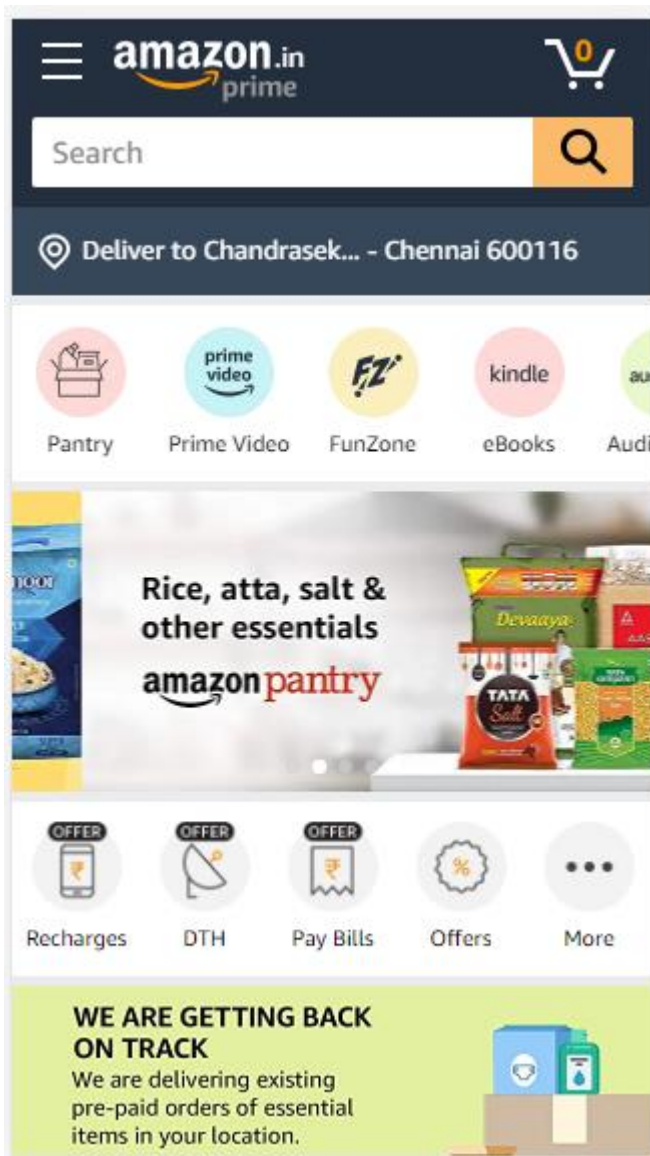
- ❖ Zoom the page to find out the "Sample Question Paper" menu item
- ❖ Select the sub menu item "SQP 2019-20" and then select "Class XII"
- ❖ Zoom the page and scroll down to find out where Mathematics is in this list.
- ❖ The click on "MSQ" link adjacent to the "Mathematics" will display the PDF of the question paper.
- ❖ Try doing the above steps in Chrome browser of a desktop.

Problem

Usha wants to order a book in amazon. She is not able to install amazon app since there isn't enough disk space in the phone. She tries ordering by accessing amazon web site in the browser available in mobile.

Steps

- ❖ Open browser in your mobile phone.
- ❖ Go to the <http://amazon.in>
- ❖ The result looks, something like the below:



- ❖ Using the search bar on the top, search for "kids books" and finds the item to buy and places the order.

Question

What differences do you see in accessing the CBSE site and amazon web site in mobile phone?

Explanation

- ❖ Responsive Web Design makes the web page look good in all devices.
- ❖ Responsive Web Design can be implemented using HTML and CSS.
- ❖ Responsive Web Design is not a program and is not related to JavaScript

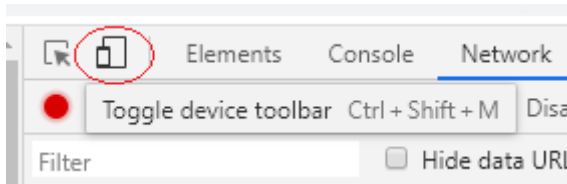
Device Emulation in Chrome Browser

Activity

Understand how to emulate display of a web page in various devices like tablets and mobile phones.

Steps

- ❖ Open <http://cbseacademic.nic.in> in desktop Chrome browser
- ❖ Open Menu (three dots in the top right corner) > More tools > Developer tools
- ❖ Click the "Toggle device toolbar" option:



- ❖ This will display the browser content as per the device selected.
- ❖ Choose specific device by clicking in the drop down available above the content display.
- ❖ Hover on the section below the device drop down to identify devices based on the resolution width.
- ❖ Change to various devices and check how the result is displayed
- ❖ Go to Amazon website and check how results are displayed

Responsive Web Design Example

Activity

Understand Responsive Web Design (RWD) based on an example.

Steps

- ❖ Open URL https://www.w3schools.com/css/css_rwd_intro.asp in browser.
- ❖ Scroll down to the section where a sample web application screen layout is displayed with heading "Chania". Observe the following aspects in the layout:
 - Header
 - Navigation items in the left-hand side
 - Main application content in the center
 - The side nav bar contains What? Where? How?
 - There is a footer in the bottom
- ❖ Open Developer Tools and select iPad as the device.
 - The side bar has come down now, rest all components remain in the same position.
 - The width of menu and main application content sections are stretched to fit the width of the device.
- ❖ Change device from iPad to iPhone 5
 - Each section is now displayed one below the other
 - First header, then menu, then content, then side bar and then the footer.

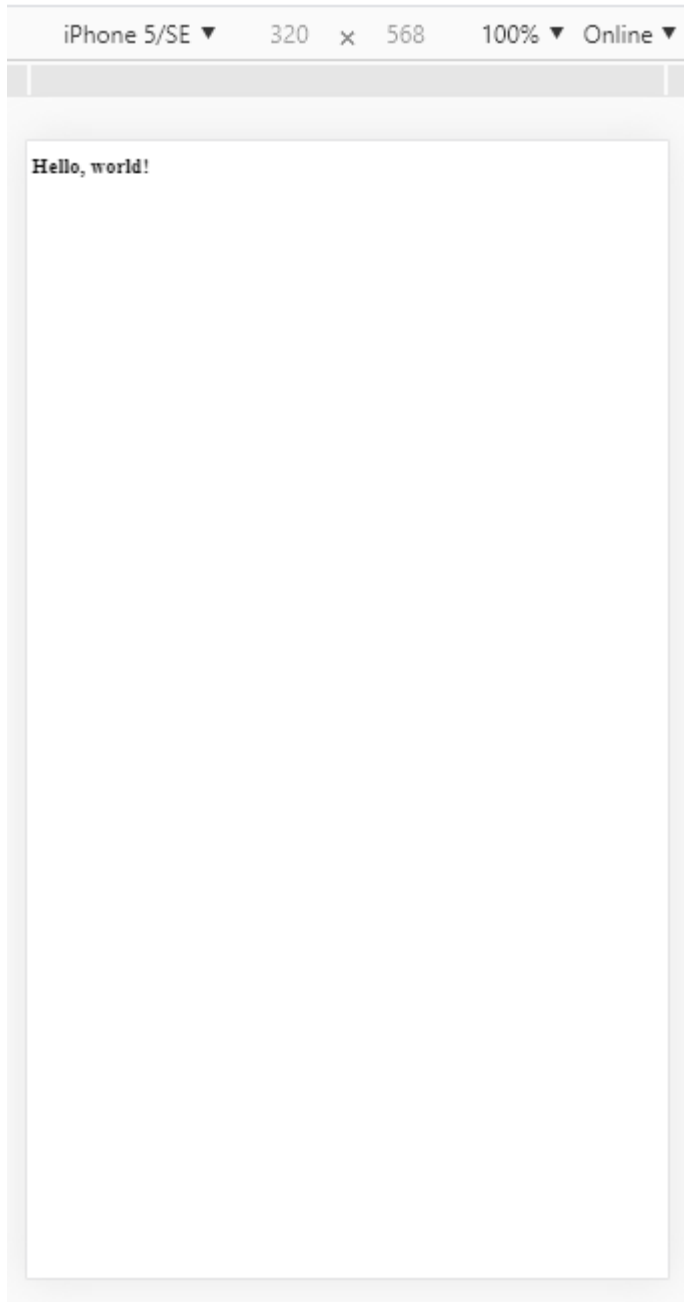
Understanding the Viewport

Activity

Demonstrate implementation of viewport in HTML.

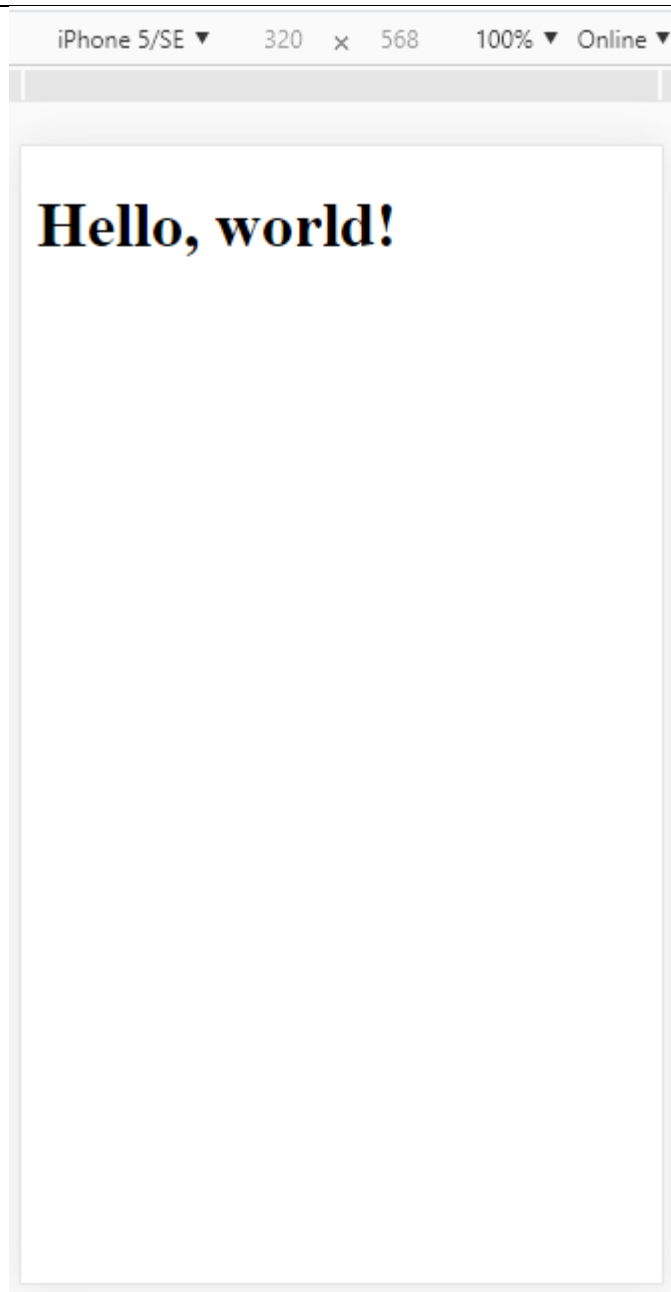
Steps

- ❖ Create a new HTML file with html, body and h1 tags
- ❖ View the page in browser in iPhone5 emulation. It should look something like the below.



- ❖ Include head tag and with the below meta tag.

```
<meta name="viewport"
      content="width=device-width, initial-scale=1, shrink-to-fit=no">
```
- ❖ Refresh the page and check the result, which should look something like the below:



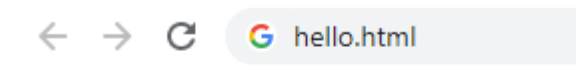
Explanation

- ❖ Assigning viewport to meta tag was included as part of HTML5.
- ❖ Viewport is the user's visible area of web page.
- ❖ width=device-width instructs the browser to follow the width of the device
- ❖ initial-scale=1 defines the initial zoom level to the actual
- ❖ shrink-to-fit=no is specific to Safari browser

Hello World using Bootstrap

Activity

Display "Hello World" in Chrome browser console using Bootstrap. Refer screen layout below.



Hello, world!

Solution

- ❖ Create a new folder named "bootstrap", which will hold all the coding related to Bootstrap.
- ❖ Create a new file named "hello.html"
- ❖ Go to <https://getbootstrap.com/>
- ❖ Click "Get Started"
- ❖ Scroll down and go to "Starter template" section
- ❖ Copy the code snippet in this section
- ❖ Paste the code snippet into a new file in Notepad++
- ❖ Save the file with name "home.html" and open the file in browser
- ❖ Check if hello world is displayed as per the screen layout provided.

Explanation

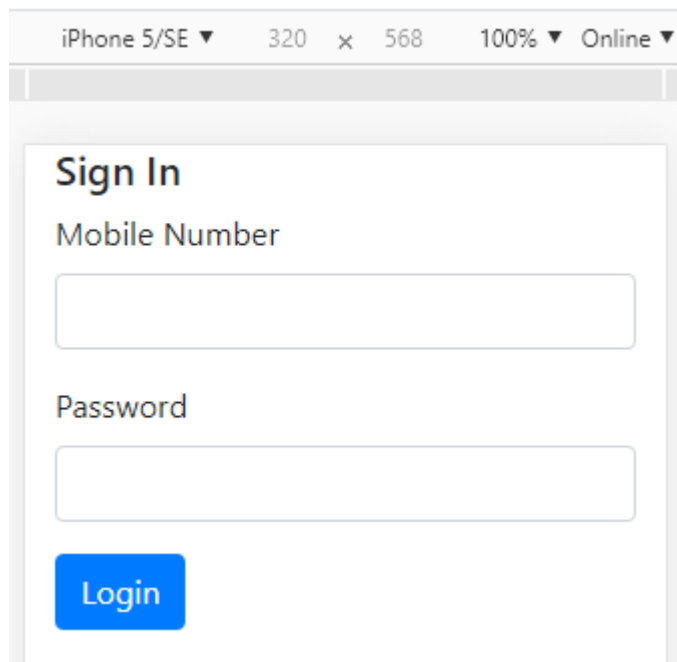
- ❖ Bootstrap is a framework for developing responsive, mobile-first websites.
- ❖ Mobile first means designing an online experience for mobile before designing for desktop, since mobile has become a primary device for using online content.
- ❖ Bootstrap 4 is the latest version.
- ❖ Bootstrap is completely free to download and use.
- ❖ Bootstrap makes web development faster and easier.
- ❖ Bootstrap also gives the ability to easily create responsive web designs.
- ❖ Bootstrap includes HTML and CSS based design templates
- ❖ Bootstrap is compatible with all modern browsers (Chrome, Firefox, IE 10, Edge, Safari and Opera)
- ❖ Viewport is defined in the meta tag
- ❖ Bootstrap CDN is defined using link
- ❖ Observe "Hello World" displayed. The style comes from bootstrap. Check using developer tools.
- ❖ Script included in the bottom is used by Bootstrap for any handling events within Bootstrap.

Create login form for mFun

Problem

mFun is a new movie ticket booking website. Create a login form for this application. Refer sample layout for mobile.

Expected Output



Solution

- ❖ Create a new file named "login.html"
- ❖ Copy and paste the bootstrap starter template code from hello.html.
- ❖ Within the body tag include the code below.

```
<div class="container-fluid">
  <div class="row">
    <div class="col-12">
      <h5>Sign In</h5>
      <form>
        <div class="form-group">
          <label for="email">Mobile Number</label>
          <input type="text" class="form-control" id="email">
        </div>
        <div class="form-group">
          <label for="password">Password</label>
          <input type="password" class="form-control" id="password">
        </div>
        <button type="submit" class="btn btn-primary">Login</button>
      </form>
    </div>
  </div>
</div>
```

- ❖ Save the file and check the result.

Explanation

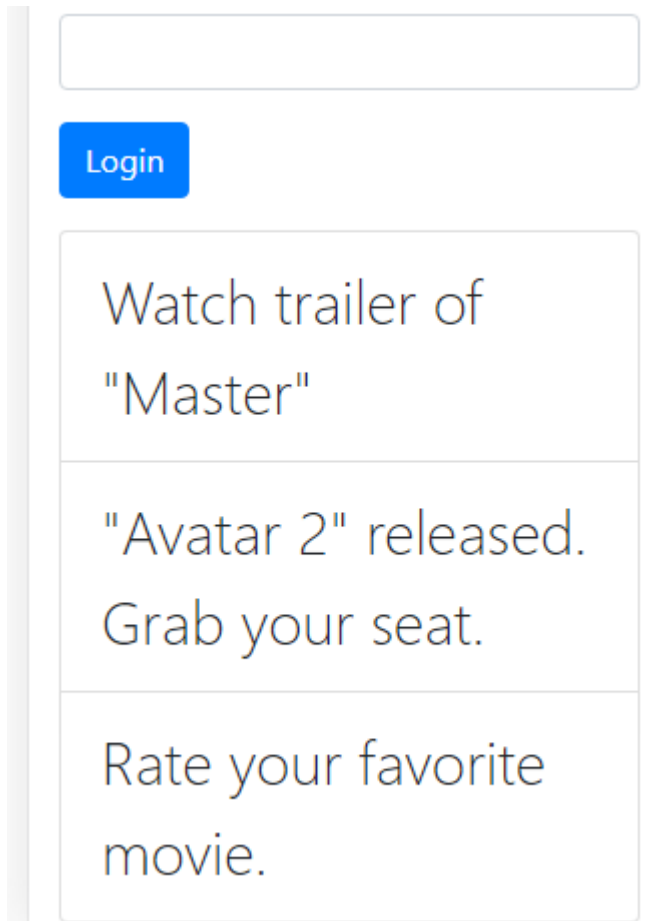
- ❖ The "container-fluid" class defines left and right-side padding and provides scope including a group of elements.
- ❖ The "row" class is used to define a row with set of elements.
- ❖ Explanation of "col-12" will be provided in the subsequent sessions.
- ❖ The class "form-group" is used to group the label and the input form field with some margin in the bottom, which creates spacing between fields.
- ❖ The class "form-control" defines various style to get the text box layout.
- ❖ The class "btn" defines the default set of styles for button.
- ❖ The class "btn-primary" defines the button with blue color. Also there is color change when hovering over the button, which is also defined as part of "btn-primary".

Display promo messages below the login form

Problem

Display promo messages below the login page to increase the curiosity of customers visiting the site.

Expected Output (mobile)



A mobile view of a login form. At the top is a text input field. Below it is a blue button labeled "Login". Underneath the button is a light gray box containing three promotional messages stacked vertically: "Watch trailer of 'Master'", "'Avatar 2' released. Grab your seat.", and "Rate your favorite movie."

Solution

- ❖ Open "login.html"
- ❖ Include the below code after the div where col-2 was defined earlier.

```
<div class="col-12 mt-3">
  <ul class="list-group">
    <li class="list-group-item promo-text">
      Watch trailer of "Master"
    </li>
    <li class="list-group-item promo-text">
      "Avatar 2" released. Grab your seat.
    </li>
    <li class="list-group-item promo-text">
      Rate your favorite movie.
    </li>
  </ul>
</div>
```

- ❖ Create a new file "styles.css" in a new folder named "css" with below specified content.

```
.promo-text {  
  font-family: Segoe UI Light;  
  font-size: 30px;  
}
```

- ❖ Link this CSS file in login.html

```
<link rel="stylesheet" type="text/css" href="css/styles.css">
```

- ❖ Save the files and check the result.

Explanation

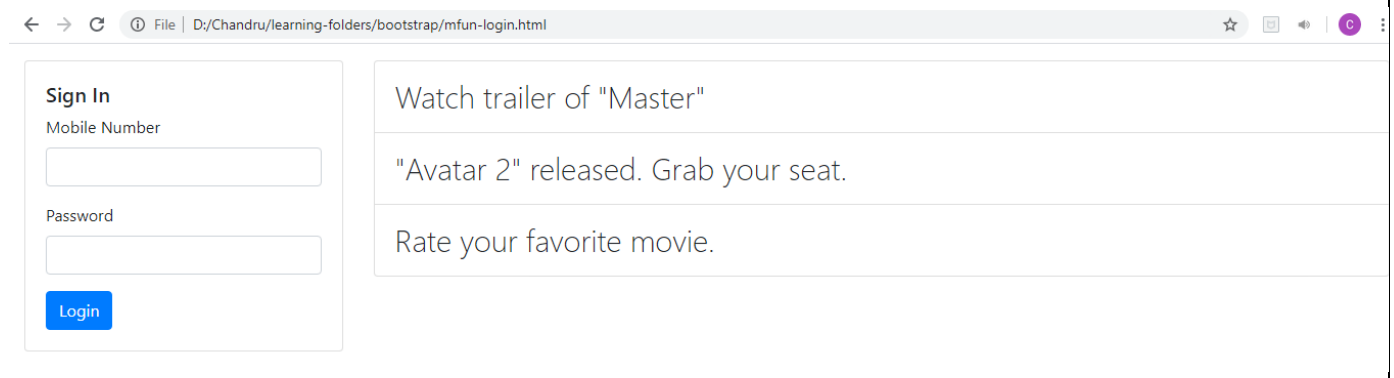
- ❖ The class "mt-3" defines some margin in the top
- ❖ The classes "list-group" and "list-group-item" are pre-defined styles in bootstrap and changes the look and feel of list items.
- ❖ The class "promo-text" is a style that we have added to display larger fonts.

Display promo messages adjacent to login form in desktop

Problem

Currently login form and promo messages are displayed one below the other in the desktop. Modify this to display adjacent to each other. The login form should occupy $\frac{1}{4}$ of the screen and promo message should occupy $\frac{3}{4}$ of the screen in desktop, but the current layout of one below the other should be maintained in the mobile view. Also include a border for login form.

Expected Output (desktop)



Solution

- ❖ Open "login.html"
- ❖ Modify the div of login form as specified below:

```
<div class="col-12 col-lg-3 mt-3">
```
- ❖ Modify the div of promo message section with below class definitions.

```
<div class="col-12 col-lg-9 mt-3">
```
- ❖ Enclose the form tag within the below div tags. Include appropriate closing div tags after form.

```
<div class="card">  
  <div class="card-body">
```
- ❖ Save the file and check the result.

Explanation

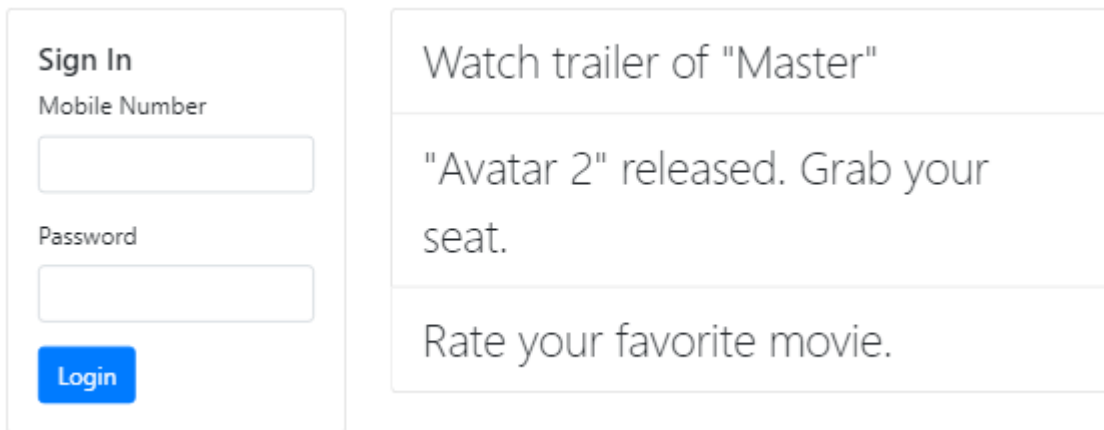
- ❖ In bootstrap, each "row" can be divided into 12 equal sections.
- ❖ If a content wants to occupy the entire row then 12 should be used.
- ❖ If a content wants to occupy half of the row then 6 should be used.
- ❖ If a content wants to occupy $\frac{1}{4}$ th of the row then 3 should be used.
- ❖ If a content wants to occupy $\frac{3}{4}$ th of the row then 9 should be used.
- ❖ If a content wants to occupy $\frac{1}{3}$ rd of the row then 4 should be used.
- ❖ This is how grids and screen device widths are managed by bootstrap:
<https://getbootstrap.com/docs/4.4/layout/grid/#grid-options>
- ❖ The "card" is used to define card kind of a layout
- ❖ The "card-body" defines the primary content of the card.

Manage login page display for iPad tablet

Problem

The login form and promo message does not display as expected in iPad. It gets displayed one below the other. Modify the layout to align in iPad.

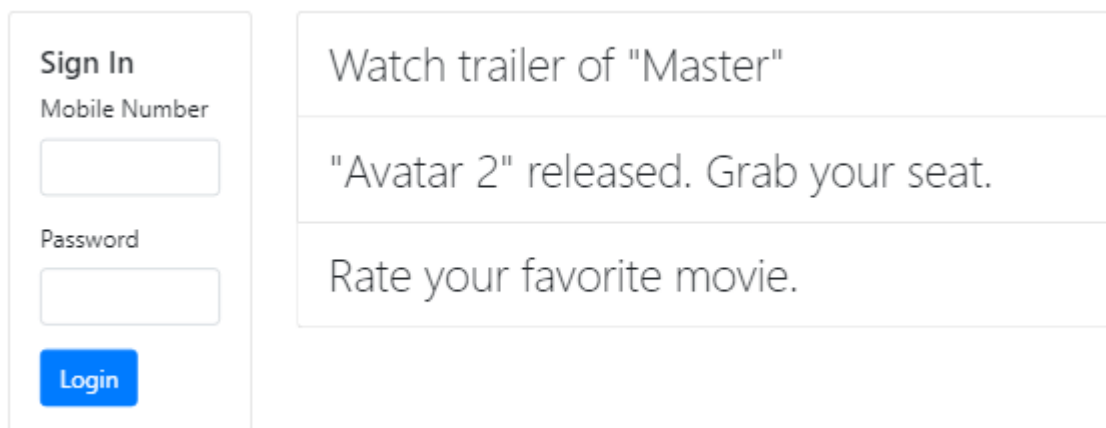
Expected Output



The image shows a mobile layout for an iPad. On the left is a 'Sign In' form with a 'Mobile Number' input field, a 'Password' input field, and a blue 'Login' button. On the right is a promo message section with three stacked boxes: 'Watch trailer of "Master"', '"Avatar 2" released. Grab your seat.', and 'Rate your favorite movie.'

Solution

- ❖ Open "login.html"
- ❖ Modify the div of login form as specified below:
`<div class="col-12 col-md-3 col-lg-3 mt-3">`
- ❖ Modify the div of promo message section with below class definitions.
`<div class="col-12 col-md-3 col-lg-3 mt-3">`
- ❖ After the above changes the layout looks something like the below:



This image is identical to the 'Expected Output' image, showing the login form and promo message stacked vertically on an iPad layout.

- ❖ Now login form looks cramped. Change column specification as **col-md-4** and **col-md-8**.
- ❖ Now save and check if layout looks fine in iPhone 5, iPad and desktop.

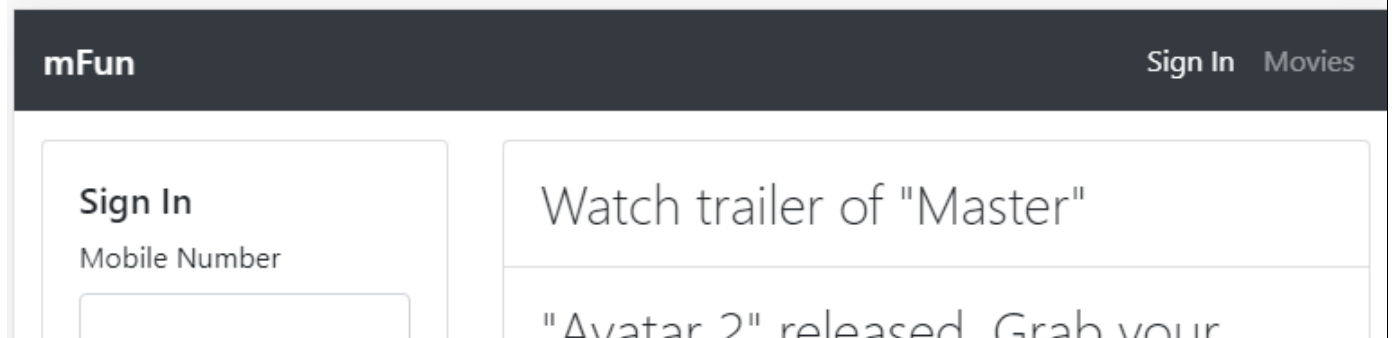
Include navigation bar for login page

Problem

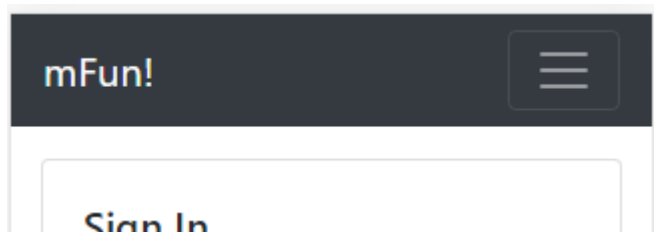
Include navigation bar for login page. The navigation items should get into an expandable and collapsible menu. Refer layouts below.

Expected Output

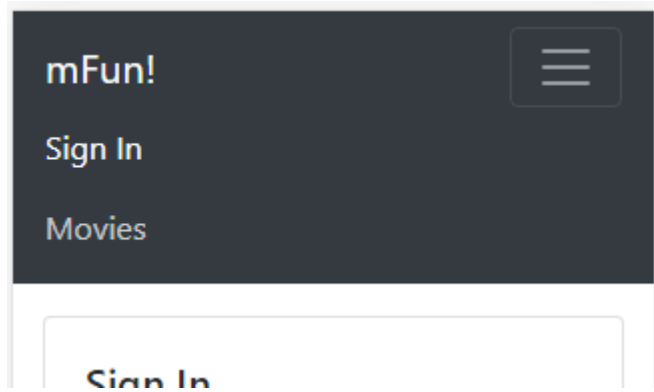
Desktop



Mobile (Collapsed)



Mobile (Expanded after clicking in hamburger menu)



Solution

- ❖ Go to [getbootstrap.com > Documentation > Components > Navbar > Supported Content](https://getbootstrap.com/docs/5.0/components/navbar/) and copy the code snippet in this section by clicking the "Copy" option.
- ❖ Open "login.html" in Notepad++
- ❖ Paste the copied code immediately after the body tag.
- ❖ Remove the third and fourth tags.
- ❖ Remove the form tag.
- ❖ Remove the span tag with class "sr-only".
- ❖ Correct the indentation.
- ❖ Change the text "Navbar" to "mFun!"
- ❖ Change "Home" to "Sign In" and href to "login.html"

- ❖ Change "Link" to "Movies" and href to "movies.html"
- ❖ Change "navbar-light" to "navbar-dark"
- ❖ Change "bg-light" to "bg-dark"
- ❖ Change "mr-auto" to "ml-auto"

Design card for displaying a Movie

Problem

Design a card for displaying details about a movie. There should be a Edit button. Sample layout for a card provided below.

Expected Output



The Lord of the Rings: The Fellowship of the Ring (2001)

Action, Adventure, Drama

PG-13 ★8.8 ⌚ 178m

Budget: \$887,800,000

A meek Hobbit from the Shire and eight companions set out on a journey to destroy the powerful One Ring and save Middle-earth from the Dark Lord Sauron.

Edit

Solution (including the movie poster)

- ❖ Create a new file named movies.html
- ❖ Copy and paste the entire content of login.html into movies.html
- ❖ Retain the navigation bar and remove the login form section and promo messages section
- ❖ Include the following code to place a card.

```

<div class="container-fluid mt-3">
  <div class="row">
    <div class="col-12 col-md-4 col-lg-3 mb-3">
      <div class="card">
        </div>
      </div>
    </div>
  </div>
</div>

```

- ❖ Include image before the card within the card class div. Use the source URL below
https://upload.wikimedia.org/wikipedia/en/8/8a/The_Lord_of_the_Rings_The_Fellowship_of_the_Ring_%282001%29.jpg
- ❖ Check if the image is displayed.

Solution (including the movie title and year)

- ❖ Below the image tag, include the card body.

```

<div>
  <span class="movie-title">
    The Lord of the Rings: The Fellowship of the Ring
  </span>
  <span class="movie-year">(2001)</span>
</div>

```

- ❖ Include the following styles in styles.css

```

.movie-title {
  font-size: 19px;
  font-weight: 500;
}

.movie-year {
  font-size: 14px;
  color: grey;
  font-weight: 500;
}

```

- ❖ Save the files and check the result.

Solution (including the movie genre)

- ❖ Include div for displaying movie genre

```

<div class="movie-genre">Action, Adventure, Drama</div>

```

- ❖ Include the following styles in styles.css

```

.movie-genre {
  font-size: 12px;
  font-weight: bold;
  color: green;
}

```

- ❖ Save the files and check the result.

Solution (including the MPAA rating)

- ❖ Include span for displaying MPAA Rating

```

<span class="badge badge-info">PG-13</span>

```

- ❖ Save the files and check the result.

Solution (including the materials icon and rating)

- ❖ Include link for Google Materials Icon in <head> tag after bootstrap CSS link and before the styles.css link:

```
<link href="https://fonts.googleapis.com/icon?family=Material+Icons" rel="stylesheet">
```

- ❖ Including the rating section after MPAA rating span.

```
<span class="badge badge-success"><i class="material-icons rating">grade</i>8.8</span>
```

- ❖ Include the following styles in styles.css

```
.rating {  
    vertical-align: top;  
    font-size: 12px  
}
```

- ❖ Save the files and check the result.

Explanation

- ❖ Google Material Icon is a free icon library available for use in web pages.
- ❖ The reference and documentation for this library is available at <https://material.io/resources/icons/?style=baseline>
- ❖ Scroll down to view all the icons available
- ❖ Use the search option to find a specific icon
- ❖ The class "material-icons" is part of this icon library
- ❖ The content "grade" within the <i></i> tag is the one that defines the name of the specific icon.

Solution (including duration, budget and movie summary)

- ❖ Include the below code to include duration, budget and summary

```
<span class="duration">  
    <i class="material-icons duration">schedule</i> 178m  
</span>  
<div class="budget">Budget: $887,800,000</div>  
<div class="movie-summary">  
    A meek Hobbit from the Shire and eight companions set out on a  
    journey to destroy the powerful One Ring and save Middle-earth  
    from the Dark Lord Sauron.  
</div>
```

- ❖ Use text below for movie summary:

A meek Hobbit from the Shire and eight companions set out on a journey to destroy the powerful One Ring and save Middle-earth from the Dark Lord Sauron.

- ❖ Include the following styles in styles.css

```
.duration {  
  color: grey;  
  font-size: 13px;  
  vertical-align: text-bottom;  
}  
  
.budget {  
  color: grey;  
  font-weight: bold;  
  font-size: 12px;  
  vertical-align: text-bottom  
}  
  
.movie-summary {  
  font-size: 11px  
}
```

- ❖ Save the files and check the result.

Solution (including footer and book ticket button)

- ❖ Include the below code for Edit button

```
<div class="card-footer">  
  <a class="btn btn-primary" href="edit-movie.html">Edit</a>  
</div>
```

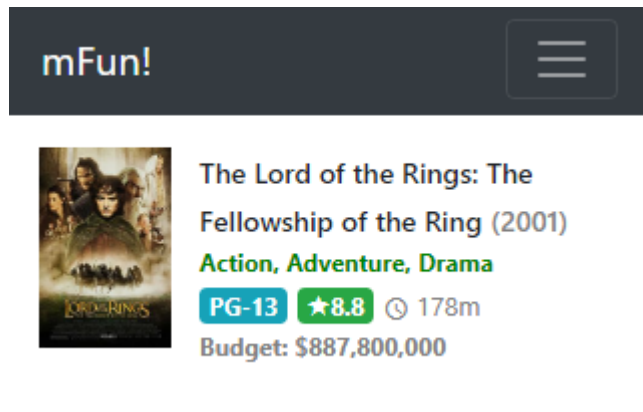
- ❖ Save the files and check the result.

Addressing display issue for small devices

Problem

In mobile view, at any given point of time only one move can be viewed. Modify the layout similar to the one specified below. This should be applicable only for the mobile layout.

Expected Output



Solution

- ❖ Create new file named "movies-mobile-variant.html" with code copied from movies.html.
- ❖ Modify the existing div of column grid definition as specified below:

```
<div class="d-none d-md-block d-lg-block col-md-4 col-lg-3 mb-3">
```

- ❖ In a new div below the current div with the following code:

```
<div class="d-block d-md-none d-lg-none col-12 mb-3">
  <div class="row">
    <div class="col-3">
    </div>
    <div class="col-9">
    </div>
  </div>
</div>
```

- ❖ Include image tag within the col-3 div. Replace "src" with actual image reference:

```

```

- ❖ Include style in style.css:

```
.poster-mobile {
  width: 66px;
  height: 100px;
}
```

- ❖ Reduce the font size of title with a new CSS style with font-size 14px.
- ❖ Copy and paste the div and span sections from Title to Budget and paste in col-9 div.
- ❖ Save all files and check if the code appears as expected in mobile device. Also check if the existing layout is retained for tablet and desktop.

Displaying list of Movies

Problem

Display movie cards for 7 other movies. Movie details are available in the link given below.

https://docs.google.com/spreadsheets/d/1GRTDdExc2a_L1wZuOmRsdo5cFfu0jGxPphj1Bv4ZhBs/edit?usp=sharing

Solution

- ❖ Open movies.html in Notepad++
- ❖ Copy and paste the below div section to create a new movie card.
`<div class="col-12 col-md-4 col-lg-3 mb-3">`
- ❖ Refer the provided excel sheet to change the movie details.
- ❖ Save the file and check if the movie is added correctly.
- ❖ Repeat the above three steps for each of the seven movies.

Create form to edit movie details

Problem

Create form to edit movie details. Refer layout below.

Expected Output

Desktop

mFun!

Sign InMovies

Edit Movie

Title

The Lord of the Rings: The Fellowship of the Ring

Summary

A meek Hobbit from the Shire and eight companions set out on a journey to destroy the powerful One Ring and save Middle-earth from the Dark Lord Sauron.

Duration (mins)

178

MPAA Rating

PG-13

Release Date (dd/mm/yyyy)

19/12/2001

Budget

887800000

Released

Yes

No

Genre

☒ Action

☒ Adventure

☒ Drama

☐ Comedy

☐ Thriller

☐ Horror

Save

mFun!

Edit Movie

Title

The Lord of the Rings: The Fellowship of the Ring

Summary

A meek Hobbit from the Shire and eight companions set out on a journey to destroy the powerful One Ring and save Middle-earth from the Dark Lord Sauron.

Duration (mins)

178

MPAA Rating

PG-13

Release Date (dd/mm/yyyy)

19/12/2001

Budget

887800000

Released

Yes

No

Genre

☒ Action

☒ Adventure

☒ Drama

☐ Comedy

☐ Thriller

☐ Horror

Save

Mobile

Before Scrolling	After Scrolling
<div><div>mFun!</div><div><h1>Edit Movie</h1><p>Title</p><div>The Lord of the Rings: The Fellowship</div><p>Summary</p><div>A meek Hobbit from the Shire and eight companions set out on a</div><p>Duration (mins)</p><div>178</div><p>MPAA Rating</p><div>PG-13</div><p>Release Date (dd/mm/yyyy)</p><div>19/12/2001</div></div></div>	<div><p>Duration (mins)</p><div>178</div><p>MPAA Rating</p><div>PG-13</div><p>Release Date (dd/mm/yyyy)</p><div>19/12/2001</div><p>Budget</p><div>887800000</div><p>Released</p><p><input checked="" type="radio"/> Yes <input type="radio"/> No</p><p>Genre</p><p><input checked="" type="checkbox"/> Action <input checked="" type="checkbox"/> Adventure <input checked="" type="checkbox"/> Drama <input type="checkbox"/> Comedy <input type="checkbox"/> Thriller <input type="checkbox"/> Horror</p><div>Save</div></div>

Solution

- ❖ Create new file edit-movie.html
- ❖ Copy the code from movies.html and paste in this new file.
- ❖ Change the title to "Edit Movie"
- ❖ Remove the container div and include the following container and heading after the navigation bar.

```
<div class="container mt-3">
  <h1>Edit Movie</h1>
</div>
```

- ❖ After the heading include the title text box as specified below:

```
<div class="form-group col-12">
  <label for="title">Title</label>
  <input type="text" class="form-control" id="title"
    value="The Lord of the Rings: The Fellowship of the Ring">
</div>
```

- ❖ Copy and paste the above code and convert it into textarea. Change the id and refer text below to include the value.

A meek Hobbit from the Shire and eight companions set out on a journey to destroy the powerful One Ring and save Middle-earth from the Dark Lord Sauron.

- ❖ Copy and paste the div for title and create the textbox for duration. Include class col-lg-2 along with form-group.

```
<div class="form-group col-12 col-lg-2">
  <label for="duration">Duration (min)</label>
  <input type="text" class="form-control" id="duration" value="178">
</div>
```

- ❖ Copy and paste the above code for MPAA Rating drop down. Modify input text with select text. Copy and paste code from the movie-edit.html implemented in HTML learning. Include form-control class after pasting the code or refer code below:

```
<select class="form-control" id="mpaaRating">
  <option>G</option>
  <option>PG</option>
  <option selected>PG-13</option>
  <option>R</option>
  <option>NC-17</option>
</select>
```

- ❖ Copy and paste the duration textbox code and make appropriate changes for Release Date. Define col-lg-3 class.

```
<div class="form-group col-12 col-lg-3">
  <label for="releaseDate">Release Date (dd/mm/yyyy)</label>
  <input type="text" class="form-control" id="releaseDate" value="19/12/2001">
</div>
```

- ❖ Similar to duration include the text box for budget.

```
<div class="form-group col-12 col-lg-3">
  <label for="budget">Budget</label>
  <input type="text" class="form-control" id="budget" value="887800000">
</div>
```

- ❖ Include code below for Released radio buttons:

```
<div class="form-group col-12 col-lg-2">
  <div><label for="released">Released</label></div>
  <div class="form-check form-check-inline">
    <input class="form-check-input" checked type="radio"
      name="released" id="releasedYes" value="Y">
    <label class="form-check-label" for="releasedYes">Yes</label>
  </div>
  <div class="form-check form-check-inline">
    <input class="form-check-input" type="radio"
      name="released" id="releasedNo" value="N">
    <label class="form-check-label" for="releasedNo">No</label>
  </div>
</div>
```

- ❖ Refer code below to include a single check box. Based on this create check boxes for all genres Action, Adventure, Drama, Comedy, Thriller and Horror.

```

<div class="form-group col-12">
  <div><label for="genre">Genre</label></div>
  <div class="form-check form-check-inline">
    <input class="form-check-input" checked type="checkbox"
      name="genre" id="action" value="1">
    <label class="form-check-label" for="action">Action</label>
  </div>
</div>

```

- ❖ Include Save button using the code specified below.

```

<div class="col-12">
  <button type="submit" class="btn btn-primary">Save</button>
</div>

```

- ❖ To make the labels slightly bolder include the following style in styles.css:

```

label {
  font-weight: 500
}

```

- ❖ Modify the columns to handle tablet layout.
- ❖ Fix the links and check if the navigation flow works.


Implement date picker for Release Date

Problem

As a convenience for user implement date picker for Release Date field.

Expected Output

Release Date (dd/mm/yyyy)



< December 2001 >

S	M	T	W	T	F	S
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

Solution

- ❖ Open edit-movie.html in Notepad++
- ❖ Include CSS for third party library within head tag:

```
<link href="https://unpkg.com/gijgo@1.9.13/css/gijgo.min.css"
      rel="stylesheet" type="text/css"/>
```

- ❖ Include the script reference for third part library and include code to assign it to release date.

```
<script src="https://unpkg.com/gijgo@1.9.13/js/gijgo.min.js"
      type="text/javascript"></script>
<script>
    $('#releaseDate').datepicker({
        uilibrary: 'bootstrap4',
        format: 'dd/mm/yyyy'
    });
</script>
```

- ❖ Save the file and check the result.


Implement message display using alerts

Problem

Implement appropriate messaging for the following scenarios:

1. Display message "Invalid user / password" when login fails
2. Display message "Movie details saved successfully" after saving movie details in edit-movie.html

Expected Output

Login	Movie save success message
<div><h3>Sign In</h3><div>Invalid User / Password</div><div>Mobile Number</div><input type="text"/><div>Password</div><input type="password"/><div>Login</div></div>	<div><div>mFun!</div><div>Movie details saved successfully.</div></div>

Solution

- ❖ Open login.html in Notepad++
- ❖ Include the below code after `<h5>Sign In</h5>`

```
<div class="alert alert-danger" role="alert">
  Invalid User / Password
</div>
```
- ❖ Include below code after the container div of movies.html:

```
<div class="alert alert-success" role="alert">
  Movie details saved successfully.
</div>
```

Implement validation messages in edit movie form

Problem

Include the following validation error messages for Title field of edit movie form.

1. "Title is required" – This message needs to be displayed when Title field is empty
2. "Title should not exceed 250 characters" – This message needs to be displayed when Title field is entered with characters more than 250.

NOTE: The JavaScript coding is not required. Just create a separate page with validation messages. Refer layout below.

Expected Layout

Title

The Lord of the Rings: The Fellowship of the Ring

Title is required.

Title should not exceed 250 characters.

Solution

- ❖ Create a new file named edit-movie-validation.html
- ❖ Copy the content of edit-move.html and paste the code in this new file.
- ❖ Include the following div tags for validation displaying validation error messages:

```
<input type="text" class="form-control" id="title"
      value="The Lord of the Rings: The Fellowship of the Ring">
<div class="validation-message">Title is required.</div>
<div class="validation-message">Title should not exceed 250 characters.</div>
```

- ❖ Include the following style for validation message in styles.css:

```
.validation-message {
    color: red;
    font-size: 12px;
}
```

Bootstrap Templates

Activity

Get to know about the bootstrap templates available, which can be used as reference for building web application layout.

Bootstrap Theme websites

- ❖ <https://startbootstrap.com/>
- ❖ <https://bootstrapmade.com/>

Walkthrough the Lumia template as an example to help understand how to go about using it.

Miscellaneous Topics in Bootstrap

To have a walkthrough regarding each topic in Bootstrap documentation:

- ❖ Breadcrumbs
- ❖ Buttons
- ❖ Button group
- ❖ Carousel
- ❖ Collapse
- ❖ Dropdowns
- ❖ Input group
- ❖ Jumbotron
- ❖ List group
- ❖ Modal
- ❖ Pagination
- ❖ Popovers
- ❖ Progress
- ❖ Tooltips
- ❖ Borders
- ❖ Flex
- ❖ Spacing
- ❖ Text
- ❖ Vertical Alignment

Best Bus Case Study

Best Bus is a new private bus operator company based out of Bangalore. Currently they operate buses to Hyderabad and Chennai. Build a web site to manage the bus schedule and online ticket booking. Find below the scheduled routes that they are operating:

From	To	Departure	Arrival
Bengaluru	Chennai	11:20 PM	6:05 AM
Bengaluru	Chennai	10:35 PM	5:15 AM
Chennai	Bengaluru	11:20 PM	6:05 AM
Chennai	Bengaluru	10:35 PM	5:15 AM
Bengaluru	Hyderabad	6:20 PM	4:35 AM
Hyderabad	Bengaluru	7:35 PM	6:05 AM

#	As a	I want to	so that
BB01	Admin/User	login into the application using my Mobile Number and Password	I can access the Best Bus application
BB02	Admin/User	display message "Invalid User / Password" when either the Mobile Number or Password is wrongly entered	I can know the reason for failure to login
BB03	Admin	view the list of bus schedule with start location, destination, departure time and arrival time with activated or deactivated status	I can find and edit the details of a bus schedule that require changes.
BB04	Admin	deactivate a bus schedule	I can disallow bookings when a bus is not available on a specific day
BB05	Admin	edit a bus schedule for start location, destination, departure time and arrival time	I can modify details when there are changes in schedule
BB06	Admin	display appropriate validation error messages when adding or editing a bus schedule	I can avoid human errors when entering the bus schedule details.
BB07	Admin/User	logout of the application	I can avoid unauthorized access
BB08	User	view the list of active bus schedules with start location, destination, departure time and arrival time	I can identify the right schedule for the journey
BB09	User	book tickets for a bus schedule, travel date and number of tickets	I can book tickets for my journey

Add / Edit Bus Schedule Validation Messages

Field	Validation Messages
Start Location	Select one city
Destination	Select one city
Departure Time	Enter time in hh:mm format Enter time in 24 hours format
Arrival Time	Enter time in hh:mm format Enter time in 24 hours format

Book Ticket Validation Messages

Field	Validation Messages
Travel Date	Enter date in (dd/mm/yyyy) format
Number of Tickets	Enter numbers only Booking restricted only for 5

Guidelines

1. Develop static web pages for the above user stories using Bootstrap.
2. Developed web pages should be responsive
3. Build the page with good user experience
4. For login, have two HTML pages one for admin login (login-admin.html) and another for user login (login-user.html). This is to differentiate the flow for admin and user logins.
5. Suggested order for developing the screens:
 - a. Admin Login
 - b. View Bus Schedule list
 - c. Edit Bus Schedule
 - d. User Login
 - e. View Bus Schedule list
 - f. Book Tickets

Check your understanding with Interview Questions and Cheat Sheet

Interview Questions

1. What is RWD? Where is it applied?
2. What is Bootstrap?
3. What are the benefits of Bootstrap?
4. What do you understand by a Bootstrap container?
5. List the grid layout classification in Bootstrap 4 for various devices.
6. What are the classes involved in creating a grid structure?
7. How to create navigation bar using Bootstrap?
8. What is the purpose of alerts in Bootstrap?
9. What is the purpose of modal in Bootstrap?
10. What is a carousel in Bootstrap?
11. How does cards in Bootstrap help?

Cheat Sheet

<https://hackerthemes.com/bootstrap-cheatsheet/>

Answer Keys for Interview Questions

1. What is Bootstrap?

Bootstrap is a mobile-first CSS framework for faster web application development.

2. What are the benefits of Bootstrap?

- ❖ Helps in mobile-first design.
- ❖ Implement Responsive Web Design
- ❖ Collection of CSS templates for quicker implementation

3. What do you understand by a Bootstrap container?

Container is a place holder for grouping a set of HTML elements. There are two types of container, one is container and another is container-fluid. The class "container" applies some margin in the left and right side. The class container-fluid does not allow any margin at all.

4. List the grid layout classification in Bootstrap 4 for various devices.

- ❖ Extra Small
- ❖ Small
- ❖ Medium
- ❖ Large
- ❖ Extra Large

5. What are the classes involved in creating a grid structure?

- ❖ row
- ❖ col-
- ❖ col-sm
- ❖ col-md
- ❖ col-lg
- ❖ col-xl

6. How to create navigation bar using Bootstrap?

Using following classes:

- ❖ navbar
- ❖ navbar-expand-lg
- ❖ navbar-brand
- ❖ navbar-toggler
- ❖ collapse
- ❖ navbar-collapse

7. What is the purpose of alerts in Bootstrap?

Used for displaying prominent messages to the user

8. What is the purpose of modal in Bootstrap?

To display a overlay window with the background greyed out. This

layout helps to bring attention to the user on a focused area.

9. What is a carousel in Bootstrap?

This feature helps in implementing a slide of items in an animated fashion. This component is very useful for promoting multiple messages to the application user in an intuitive way.

10. How does cards in Bootstrap help?

Cards help in defining a smaller section of content which contains a group of HTML elements.