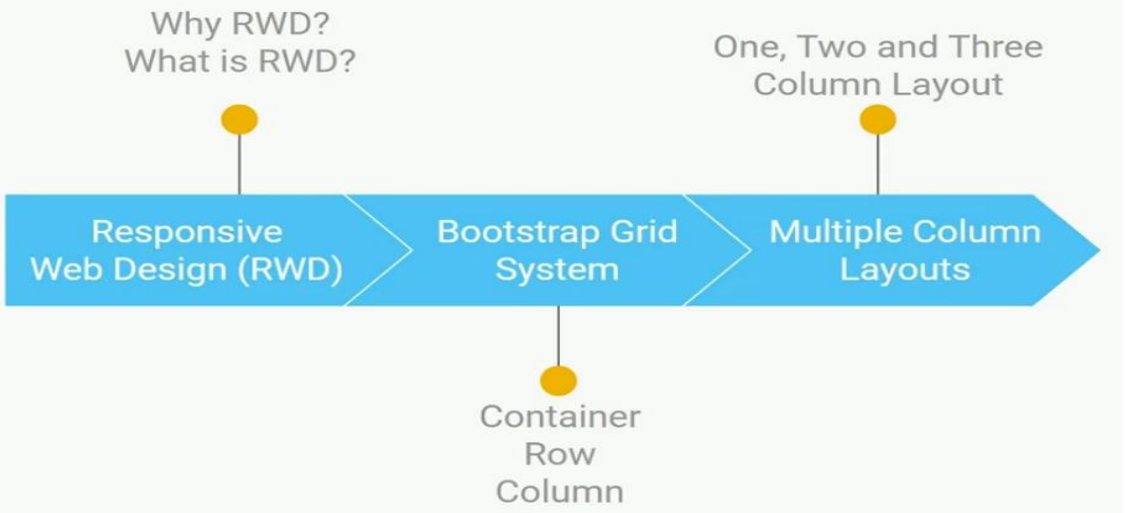
Introduction to

Responsive Web Design

Agenda

Introduction to Responsive Web Design



Let's see how

AMAZON

website looks on a mobile

amazon

Amazon Website

Mobile Version

Amazon Website

Mobile Version in Desktop

Amazon Website

Desktop Version

Devices

Wide Variety of Sizes

How to Create Websites with Best User Experience Across all The Devices?

Responsive Web Design

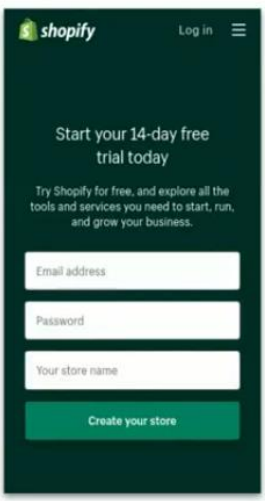
Responsive Web Design

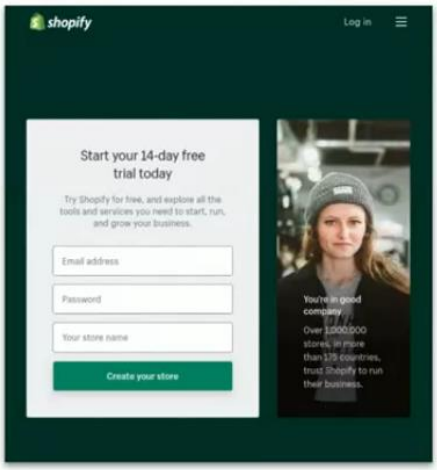
What is Responsive Web Design?

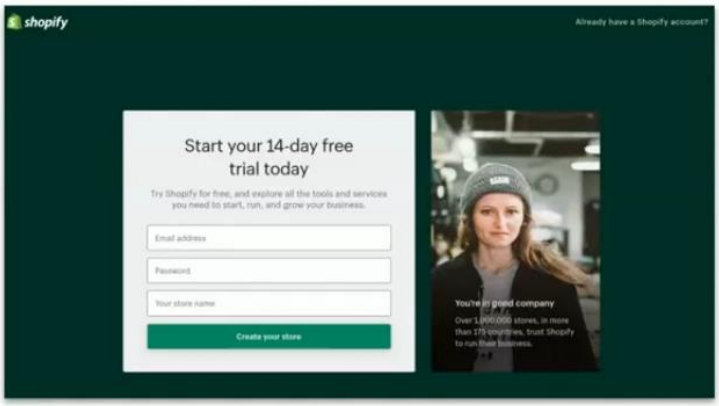
Responsive Web Design (RWD) is an approach to make web pages give best user experience in all the devices.

Responsive Web Design

shopify.in





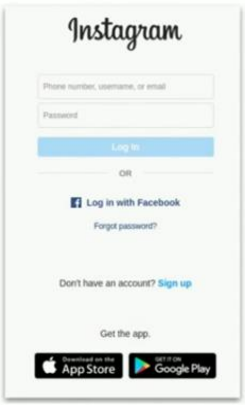


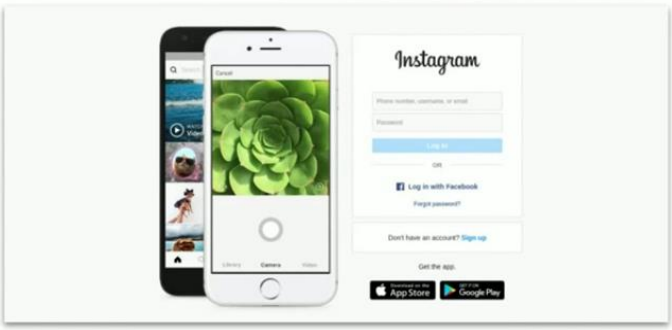
Responsive Web Design

apple.com

Responsive Web Design

Instagram.com





Responsive Web Design

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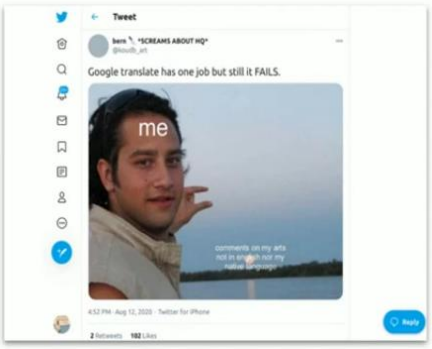
twitter.com



How to Build Responsive Websites?

Bootstrap
Grid System

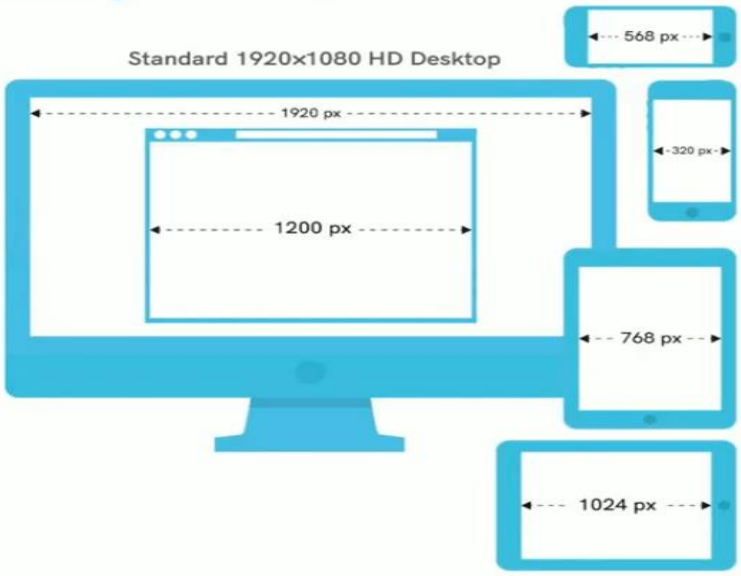
Bootstrap

Grid System

A collection of
Reusable Code Snippets
to create **Responsive Layouts**

Devices

Wide Variety of Sizes



Bootstrap

Five Responsive Tiers

To make websites responsive ,
Bootstrap categorises devices into
Five Responsive Tiers

These are known as **Responsive Breakpoints**

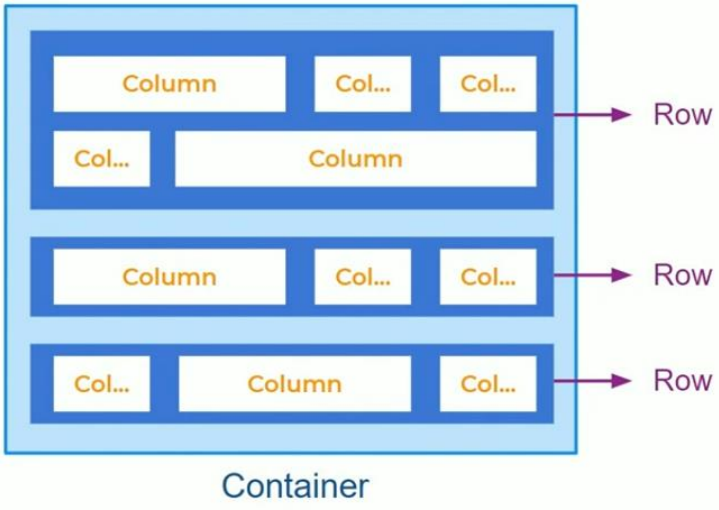
Device	Device Size(width)
Extra small devices	< 576px
Small devices	>= 576px
Medium devices	>= 768px
Large devices	>= 992px
Extra large devices	>= 1200px

Bootstrap Grid System

How it works

Bootstrap Grid system is made up of 3 things:

- Container
- Rows
- Columns

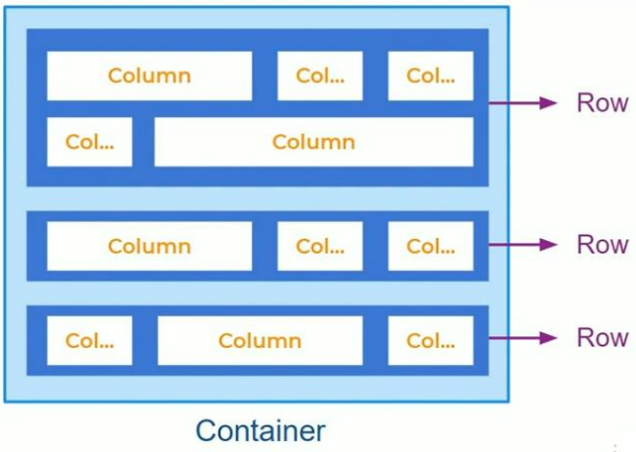


Bootstrap Grid System

How it works

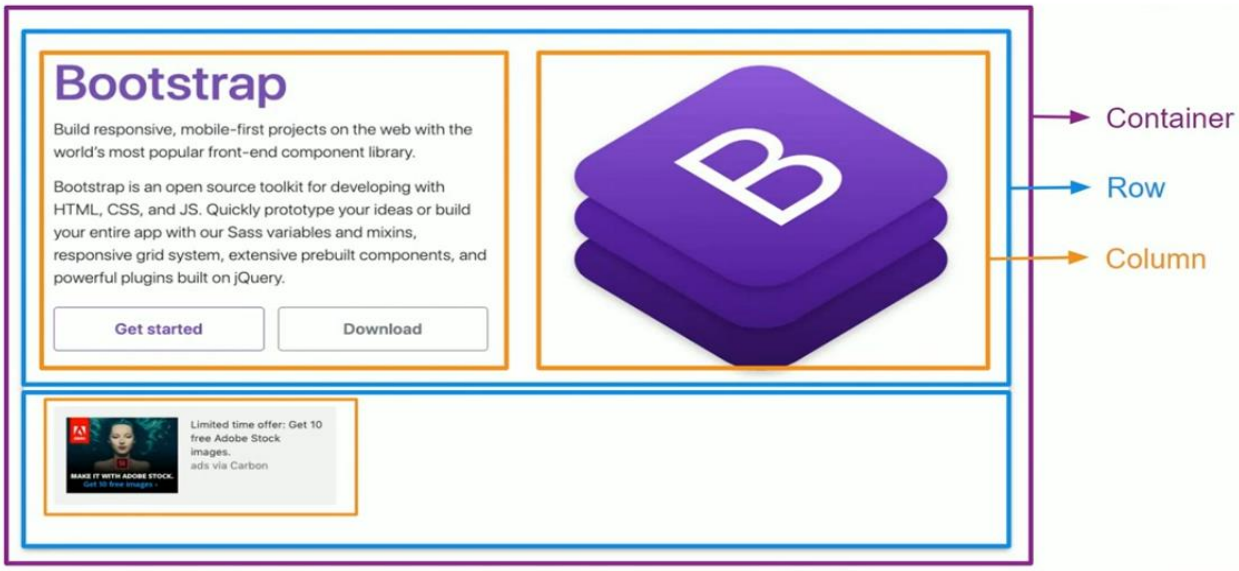
A **Container** consists of Rows and Columns

All the **Content** should be placed inside these Columns



Bootstrap Grid System

How it works



Bootstrap

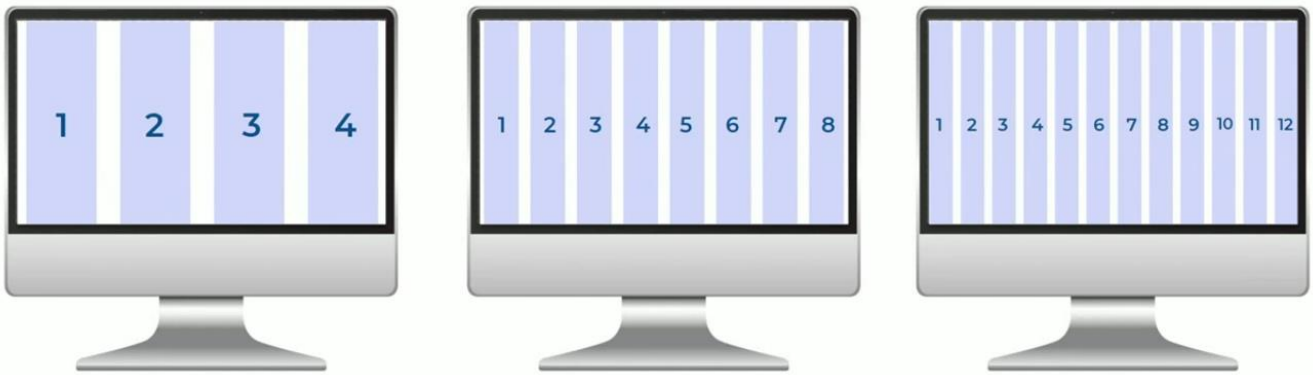
Grid System

Bootstrap Grid System uses **12 column system** for layouting.

We can create up to **12 columns** across the page.

Grid System

Different Column Systems



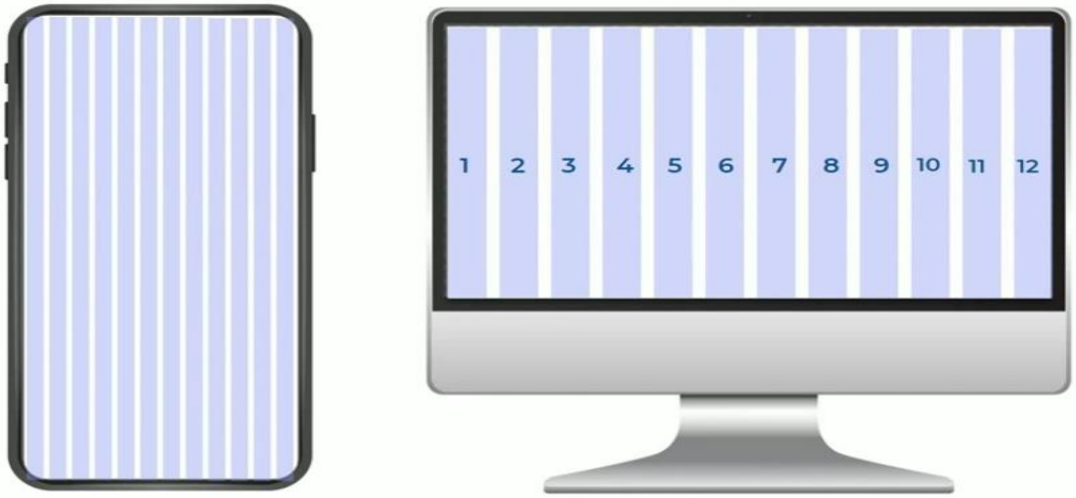
4 Column System

8 Column System

12 Column System

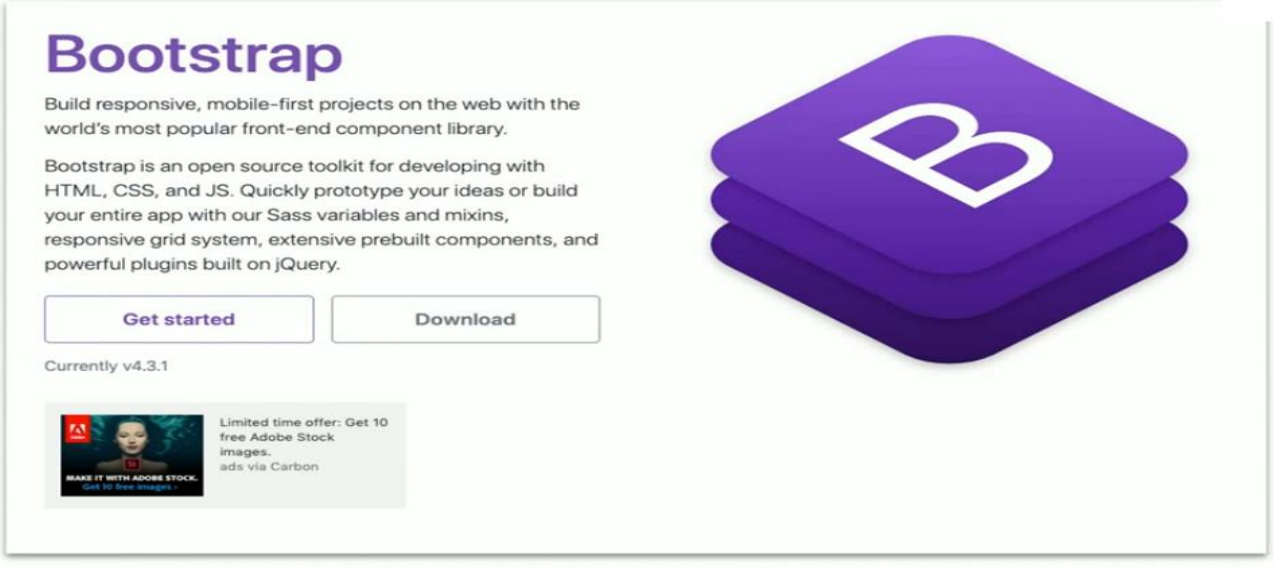
Bootstrap Grid System

12 Column System



Example Website - Desktop Version

getbootstrap.com

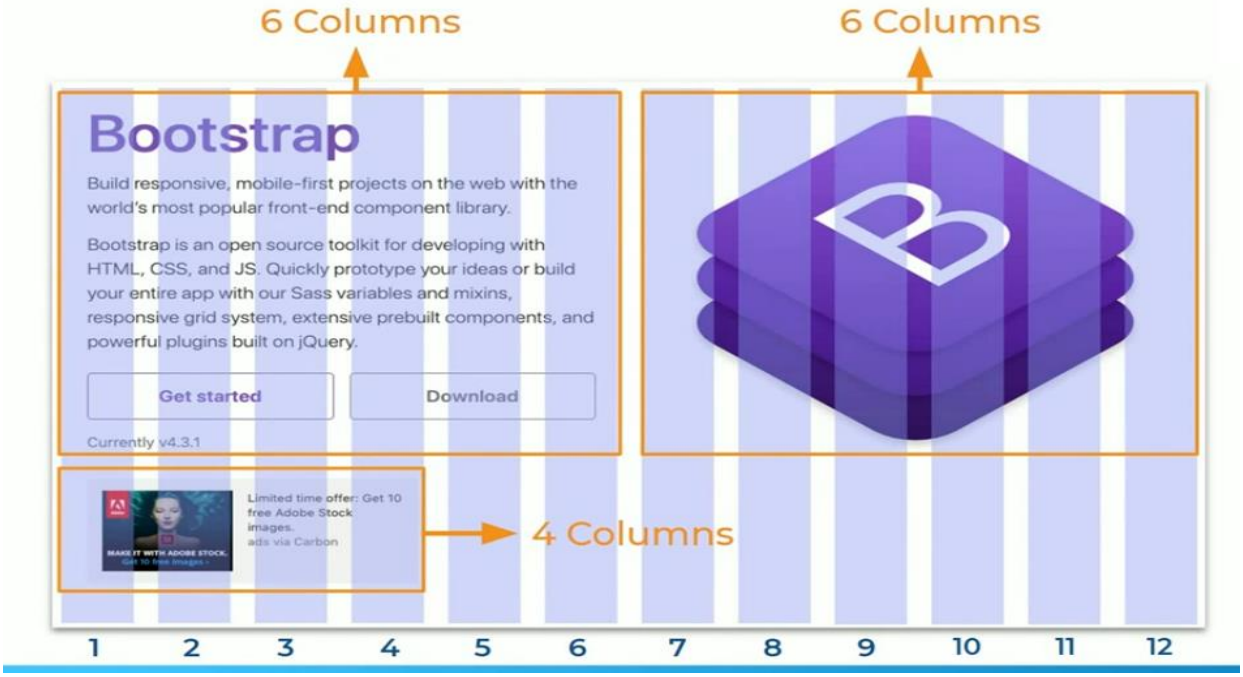


Bootstrap Grid System

Columns Representation

Bootstrap Grid System

Columns Representation

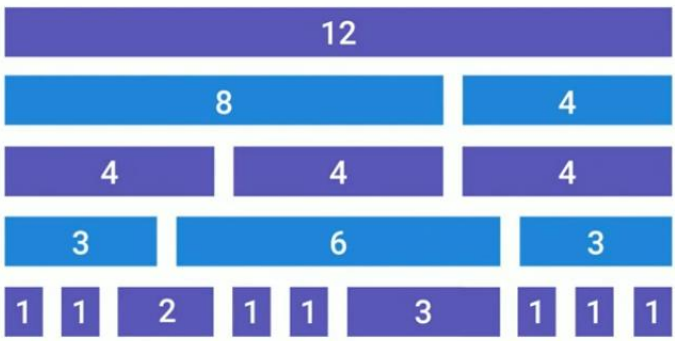


Bootstrap Grid System

Specifying number of Columns

We can specify number of columns our content should occupy in any device

The number of columns we specify should be **any number** in range of **1** to **12**



How to Create a Layout Using Bootstrap Grid System?

Bootstrap Grid System

Container

A **Container** is a div Element with a classname **container**

The purpose of the Container is to **hold** Rows and Columns

```
<div class="container">
    ...
</div>
```

Bootstrap Grid System

Row

A **Row** is a div Element with a classname **row**

The purpose of Row is to **wrap** all the Columns

```
<div class="container">
  <div class="row">
    ...
  </div>
</div>
```

Bootstrap Grid System

Column

A **Column** is a div Element with a classname **col-***

We place all our **content** inside this Column

```
<div class="container">
  <div class="row">
    <div class="col-12">
      I'm your content inside the grid!
    </div>
  </div>
</div>
```

Creating Multiple Column Layouts

Bootstrap Grid System

One Column Layout

HTML

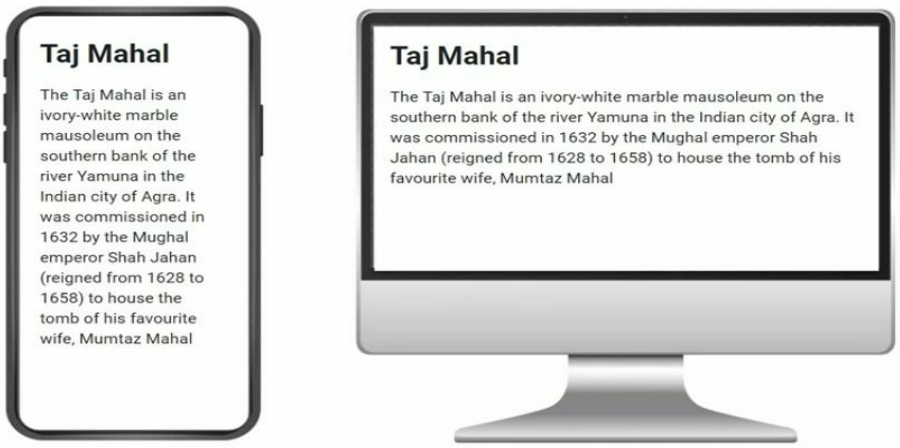
```
<div class="container">
  <div class="row">
    <div class="col-12">
      <h1 class="heading">Taj Mahal</h1>
      <p>
         The Taj Mahal is an ivory-white...
      </p>
    </div>
  </div>
</div>
```

CSS

```
.heading{
  font-size: 24px;
  font-weight: bold;
}
```

Output in different Devices

One Column Layout



Bootstrap Grid System

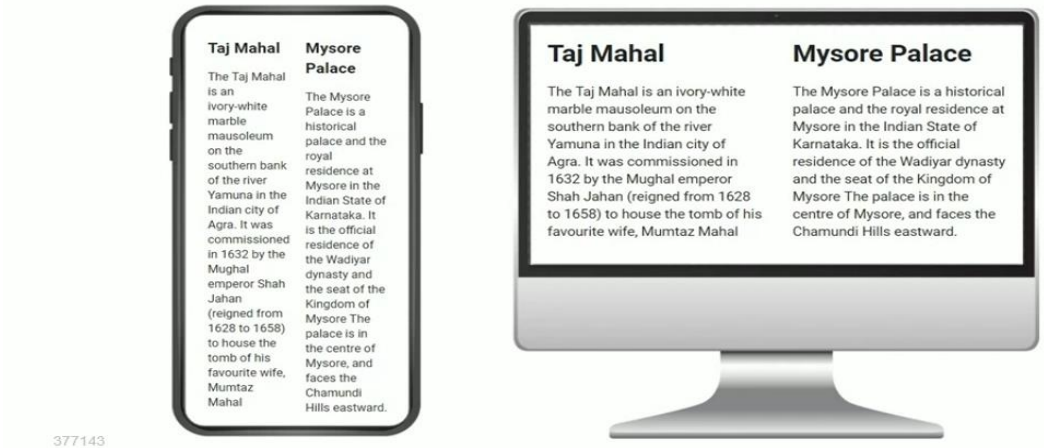
Two Column Layout

HTML

```
<div class="container">
  <div class="row">
    <div class="col-6">
      ...
    </div>
    <div class="col-6">
      ...
    </div>
  </div>
</div>
```

Output in different Devices

Two Column Layout



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Bootstrap Grid System

Three Column Layout

HTML

```
<div class="container">
  <div class="row">
    <div class="col-4">...</div>
    <div class="col-4">...</div>
    <div class="col-4">...</div>
  </div>
</div>
```

Three Column Layout

Output

Taj Mahal

The Taj Mahal is an ivory-white marble mausoleum on the southern bank of the river Yamuna in the Indian city of Agra. It was commissioned in 1632 by the Mughal emperor Shah Jahan (reigned from 1628 to 1658) to house the tomb of his favourite wife, Mumtaz Mahal

Mysore Palace

The Mysore Palace is a historical palace and the royal residence at Mysore in the Indian State of Karnataka. It is the official residence of the Wadiyar dynasty and the seat of the Kingdom of Mysore The palace is in the centre of Mysore, and faces the Chamundi Hills eastward.

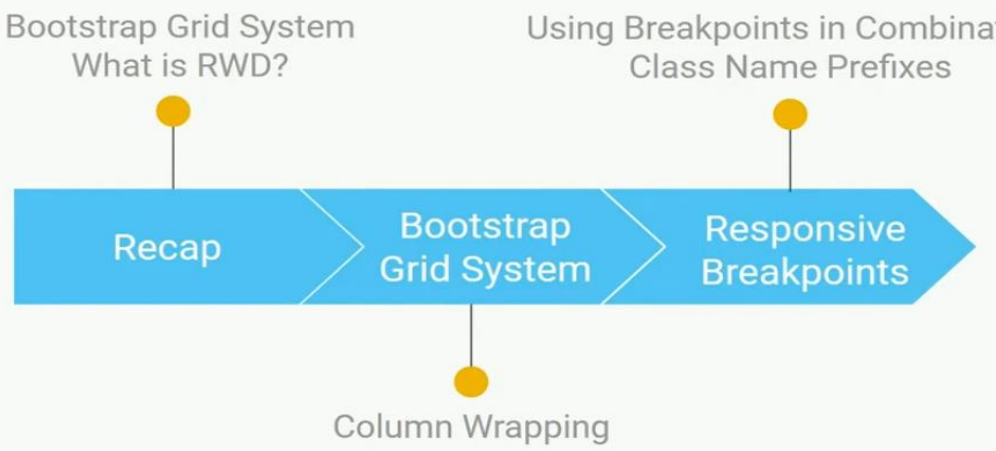
Golden Temple

The Mysore Palace is a historical palace and the royal residence at Mysore in the Indian State of Karnataka. It is the official residence of the Wadiyar dynasty and the seat of the Kingdom of Mysore The palace is in the centre of Mysore, and faces the Chamundi Hills eastward.

Bootstrap Grid System

Agenda

Bootstrap Grid System



Responsive Web Design

What is Responsive Web Design?

An approach to make web pages give best user experience in all the devices

How it works

Bootstrap Grid System

Bootstrap Grid system is made up of 3 things:

- Container
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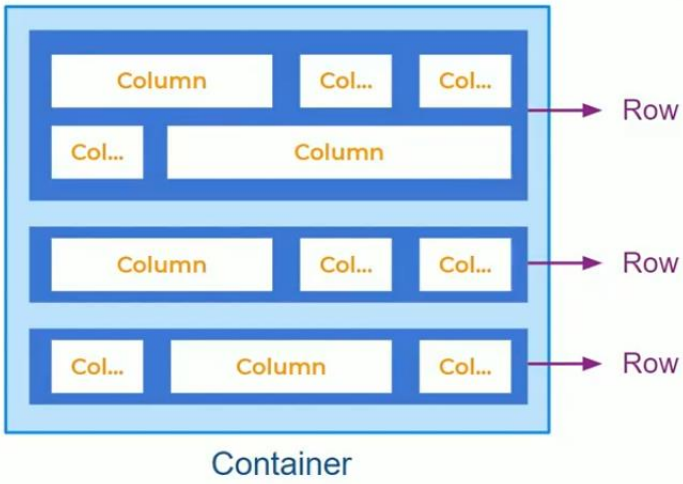
- Columns

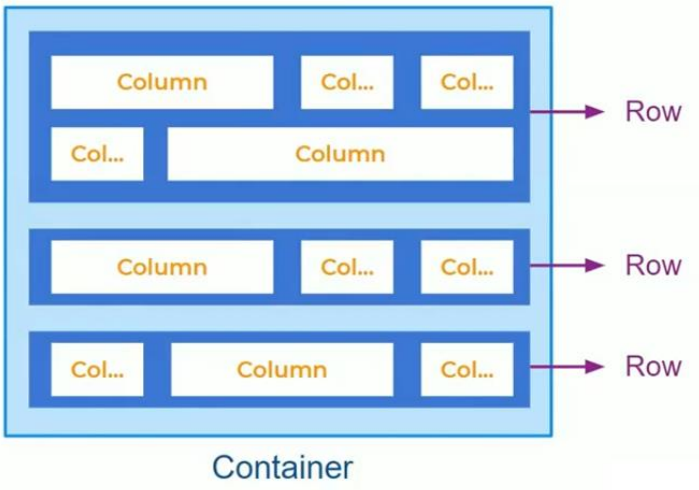


Bootstrap Grid System

How it works

A **Container** consists of Rows and Columns

All the **Content** should be placed inside these Columns



Bootstrap

Five Responsive Tiers

To make websites responsive, Bootstrap categorises devices into **Five Responsive Tiers**

These are known as **Responsive Breakpoints**

Device	Device Size(width)
Extra small devices	< 576px
Small devices	>= 576px
Medium devices	>= 768px
Large devices	>= 992px
Extra large devices	>= 1200px

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Bootstrap

Grid System

Bootstrap Grid System uses **12 column system** for layouting

We can create up to **12 columns** across the page.

Bootstrap Grid System

12 Column System

Let's add the Fourth Bootstrap Grid Column

Bootstrap Grid System

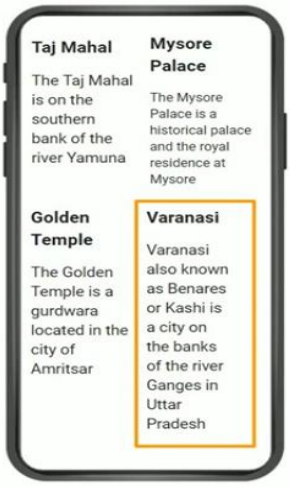
Adding Bootstrap Grid Column

HTML

```
<div class="container">
 <div class="row">
   <div class="col-6">...</div>
   <div class="col-6">...</div>
   <div class="col-6">...</div>
   <div class="col-6">
     <h1 class="heading">Varanasi</h1>
     <p>Varanasi also known as ...</p>
   </div>
 </div>
</div>
```

Bootstrap Grid System

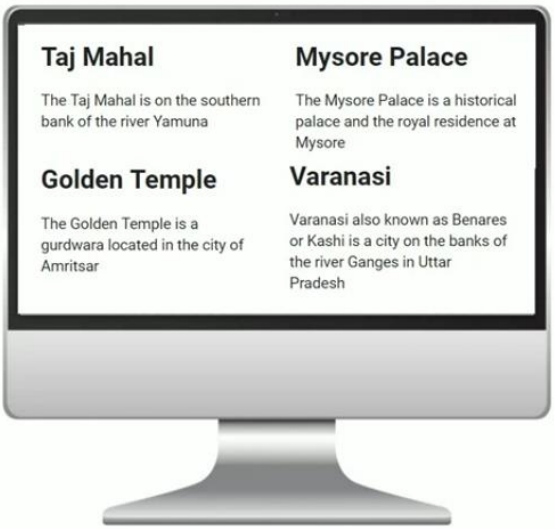
Output



How to Achieve Different Layouts in Different Responsive Breakpoints?

Responsive Breakpoints

Layout in Different Breakpoints



Bootstrap Grid System

Responsive Breakpoints

Bootstrap provides different column **class name prefixes** for Five Responsive Tiers (Responsive Breakpoints)

Device	Device Size(width)	Class Name Prefix
Extra small devices	< 576px	col-
Small devices	>= 576px	col-sm-
Medium devices	>= 768px	col-md-
Large devices	>= 992px	col-lg-
Extra large devices	>= 1200px	col-xl-

Bootstrap Grid System

Responsive Breakpoints

If we define the behaviour of the column in a particular device, a similar behaviour is guaranteed in all devices with **larger sizes**

Device	Device Size(width)	Class Name Prefix
Extra small devices	< 576px	col-
Small devices	>= 576px	col-sm-
Medium devices	>= 768px	col-md-
Large devices	>= 992px	col-lg-
Extra large devices	>= 1200px	col-xl-

Bootstrap Grid System

Responsive Breakpoints

A column with class name **col-6** will behave similarly in all the devices with larger sizes

HTML

```
<div class="container">
 <div class="row">
   <div class="col-6">
     The Taj Mahal is on the ...
   </div>
 </div>
</div>
```

Let's achieve this Responsive Layout

Responsive Breakpoints

Using Class Names in Combination

Use a combination of different class names for Breakpoints

Device	Class Name Prefix
Extra small devices	col-
Small devices	col-sm-
Medium devices	col-md-
Large devices	col-lg-
Extra large devices	col-xl-

Responsive Breakpoints

Extra Small and Larger Devices

HTML

```
<div class="container">
 <div class="row">
   <div class='col-12">...</div>
   <div class='col-12">...</div>
   <div class='col-12">...</div>
   <div class='col-12">...</div>
 </div>
</div>
```

Extra Small and Larger Devices

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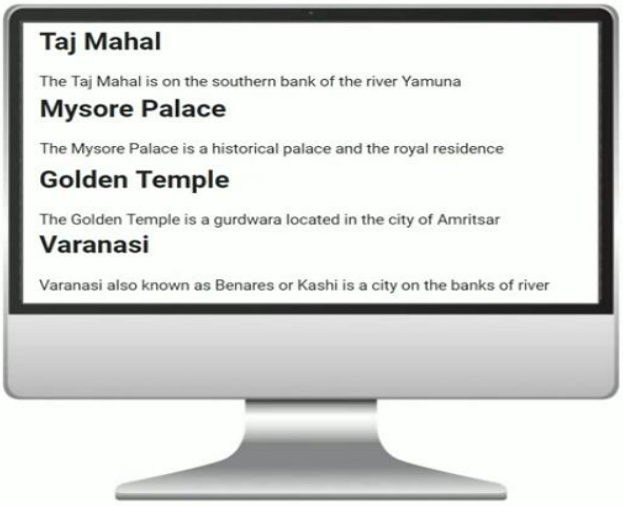
Output



Bootstrap

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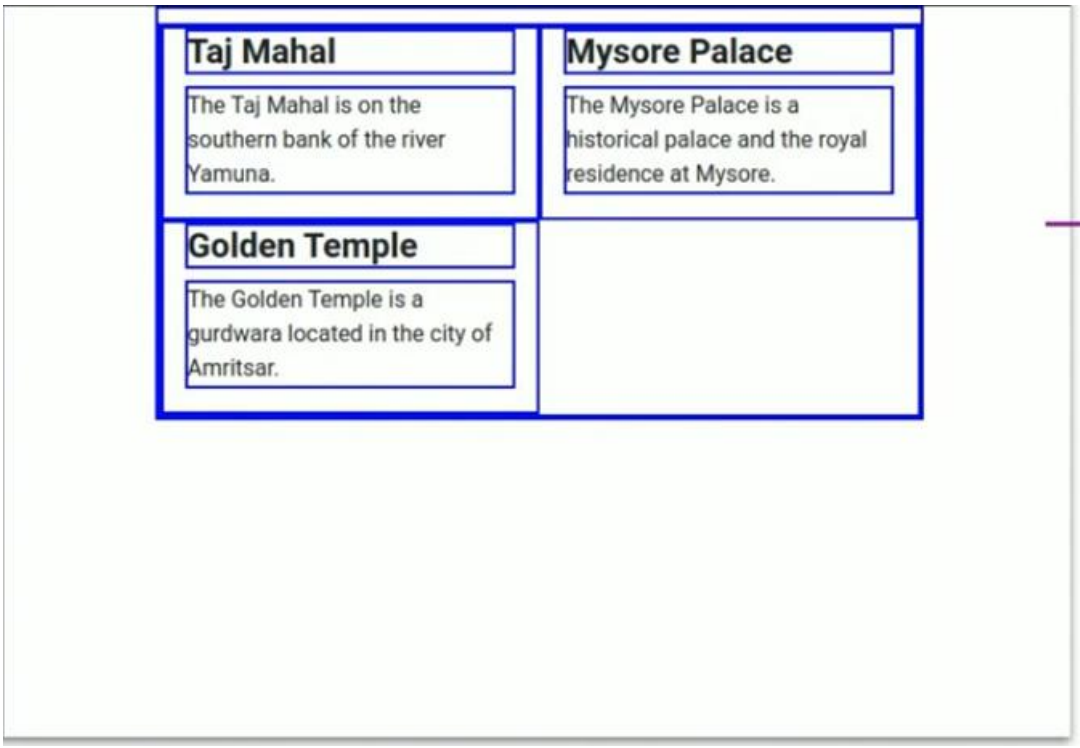
Mobile First Approach

Bootstrap follows

Mobile First Approach

First design the layout of mobile version

This will be adopted by devices with larger sizes



Key Takeaways

- Responsive Web Design
- Bootstrap Grid System
  - Five Responsive Tiers
  - Container
  - Row
  - Column
- 12 Column System

Key Takeaways

- Column Wrapping
- Bootstrap Responsive Breakpoints
  - Class name prefixes for different Breakpoints
  - Using class name prefixes in combination