CACS-205
Web Technology
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HTML Special Tags

- <pre> tag

- <tt> tag

- <meta> tag

- <audio> tag

- <video> tag

- <canvas> tag

<pre> Tag

- The <pre> tag defines preformatted text

- Text in a <pre> element is displayed in a fixed-width font (usually Courier)

- it preserves both spaces and line breaks

- **Tip:** Use the <pre> element when displaying text with unusual formatting, or some sort of computer code

<pre> Tag

```
<!DOCTYPE html>
<html>
  <body>
    <pre>
      Text in a pre
      element
      is displayed in a
      fixed-width
      font, and it preserves
      both       spaces and
      line breaks
    </pre>
  </body>
</html>
```

```
Text in a pre
element
is displayed in a
fixed-width
font, and it preserves
both       spaces and
line breaks
```

<tt> Tag

- used for marking up keyboard input

- not supported in HTML5

```
<p>This text is normal.</p>
<p><tt>This text is teletype text.</tt></p>

<p><strong>Note:</strong> The tt element is not supported in
HTML5.</p>
```

This text is normal.

This text is teletype text.

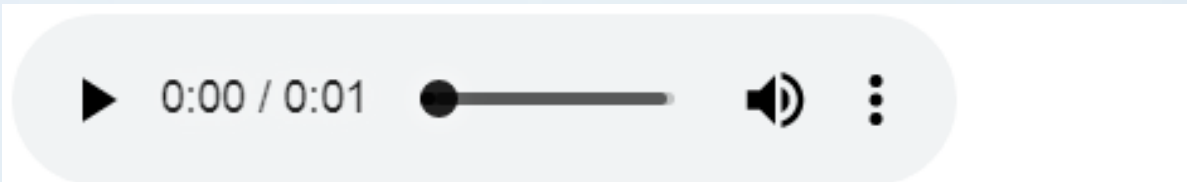**Note:** The tt element is not supported in HTML5.

<meta> Tag

```
<!DOCTYPE html>
<html>
<head>
  <meta charset="UTF-8">
  <meta name="description" content="Free Web tutorials">
  <meta name="keywords" content="HTML,CSS,XML,JavaScript">
  <meta name="author" content="John Doe">
  <meta name="viewport" content="width=device-width,
  initial-scale=1.0">
</head>
<body>
  <p>
      All meta information goes in the head section...
  </p>
</body>
</html>
```

<meta> Tag

- Metadata is data (information) about data

- <meta> tag provides metadata about the HTML document

- Metadata will not be displayed on the page, but will be machine parsable

- Meta elements are typically used to specify page description, keywords, author of the document, last modified, and other metadata

- The metadata can be used by browsers (how to display content or reload page), search engines (keywords), or other web services

- Note: <meta> tags always go inside the <head> element

- Note: Metadata is always passed as name/value pairs

\<audio\> Tag

```
<audio controls>
  <source src="horse.ogg" type="audio/ogg">
  <source src="horse.mp3" type="audio/mpeg">
  Your browser does not support the audio element.
</audio>
<p>
    <strong>Note:</strong> The audio tag is not supported
    in Internet<br> Explorer 8 and earlier versions.
</p>
```

▶ 0:00 / 0:01 ●━━━━━━ ◀)) ⋮

Note: The audio tag is not supported in Internet Explorer 8 and earlier versions.

<audio> Tag

- The <audio> tag defines sound, such as music or other audio streams

- Currently, there are 3 supported file formats for the <audio> element: MP3, WAV, and OGG

MIME Types for Audio Formats

Format	MIME-type
MP3	audio/mpeg
OGG	audio/ogg
WAV	audio/wav

\<video\> Tag

```html
<!DOCTYPE html>
<html>
<body>

<video width="320" height="240" controls>
  <source src="movie.mp4" type="video/mp4">
  <source src="movie.ogg" type="video/ogg">
</video>

</body>
</html>
```

<video> Tag

- The <video> tag specifies video, such as a movie clip or other video streams

- Currently, there are 3 supported video formats for the <video> element: MP4, WebM, and Ogg

MIME Types for Video Formats

Format	MIME-type
MP4	video/mp4
WebM	video/webm
Ogg	video/ogg

\<canvas> Tag

```html
<!DOCTYPE html>
<html>
<body>
<canvas id="myCanvas"></canvas>
<script>
  var c = document.getElementById("myCanvas");
  var ctx = c.getContext("2d");
  ctx.fillStyle = "#FF0000";
  ctx.fillRect(0, 0, 80, 100);
</script>
</body>
</html>
```

<canvas> Tag

- The <canvas> tag is used to draw graphics, on the fly, via scripting (usually JavaScript)

- The <canvas> tag is only a container for graphics, you must use a script to actually draw the graphics

- For Details :
  - https://www.w3schools.com/graphics/canvas_intro.asp

HTML Events

- When a user clicks the mouse

- When a web page has loaded

- When an image has been loaded

- When the mouse moves over an element

- When an input field is changed

- When an HTML form is submitted

- When a user strokes a key etc

- These events are handled by javascript

Google Material Design and CSS3

- Introduction to Material Design

- CSS3 Properties

- CSS3 Transitions

- CSS3 Animation

Google Material Design

- developed in 2014 by Google

- Material Design is a unified system that combines theory, resources, and tools for crafting digital experiences

- Material is a metaphor, a system for uniting style, branding, interaction, and motion under a consistent set of principles.

- With Material we believe product teams can realize their greatest design potential

- Material Design makes more liberal use of grid based layouts, responsive animations and transitions, padding, and depth effects such as lighting and shadows

Google Material Design

Google Material Design

- Develop a single underlying system that allows for a unified experience across platforms and device sizes

- Mobile precepts are fundamental, but touch, voice, mouse, and keyboard are all first-class input methods
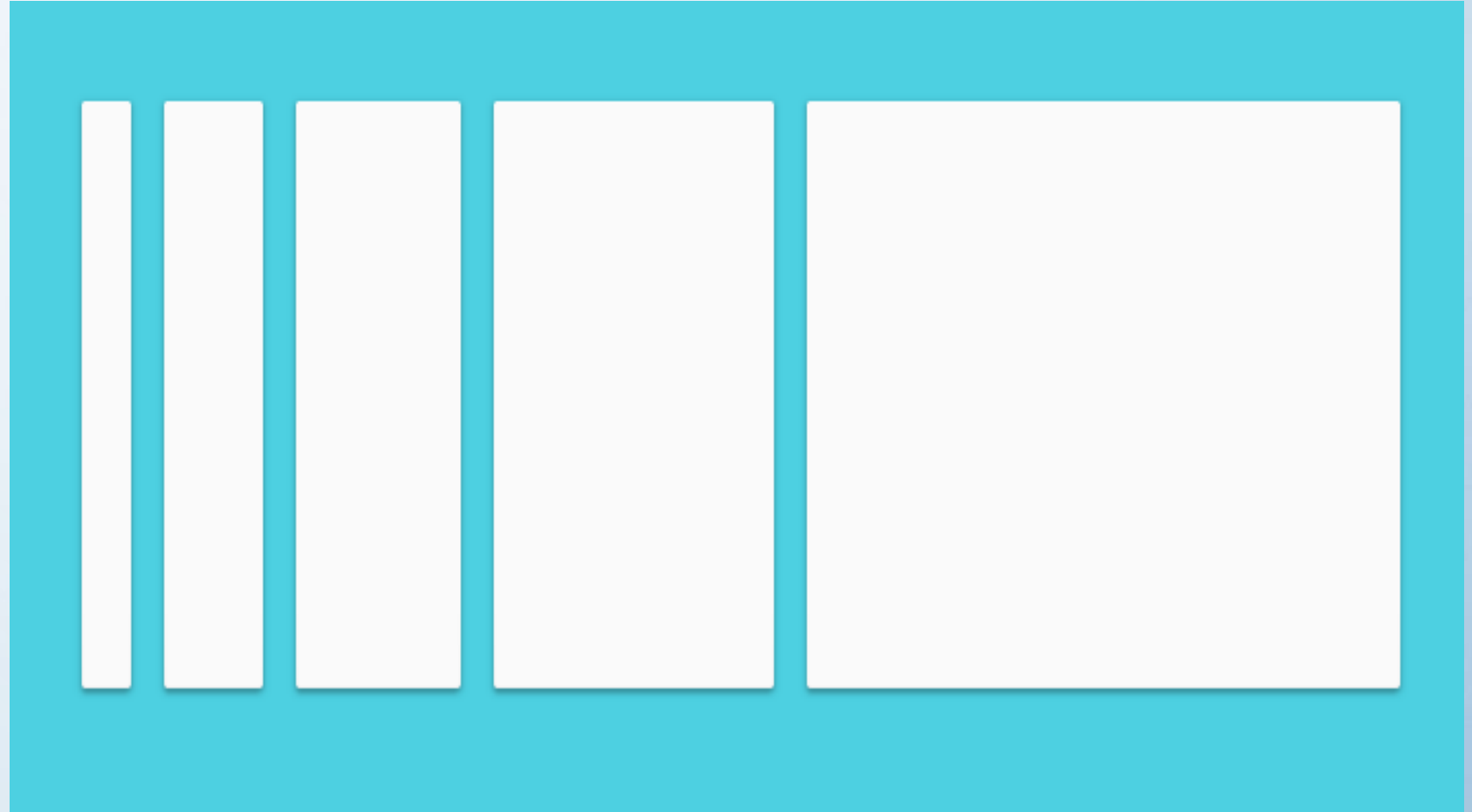
Google Material Design

Google Material Design

- Material design is a three-dimensional environment containing light, material, and cast shadows
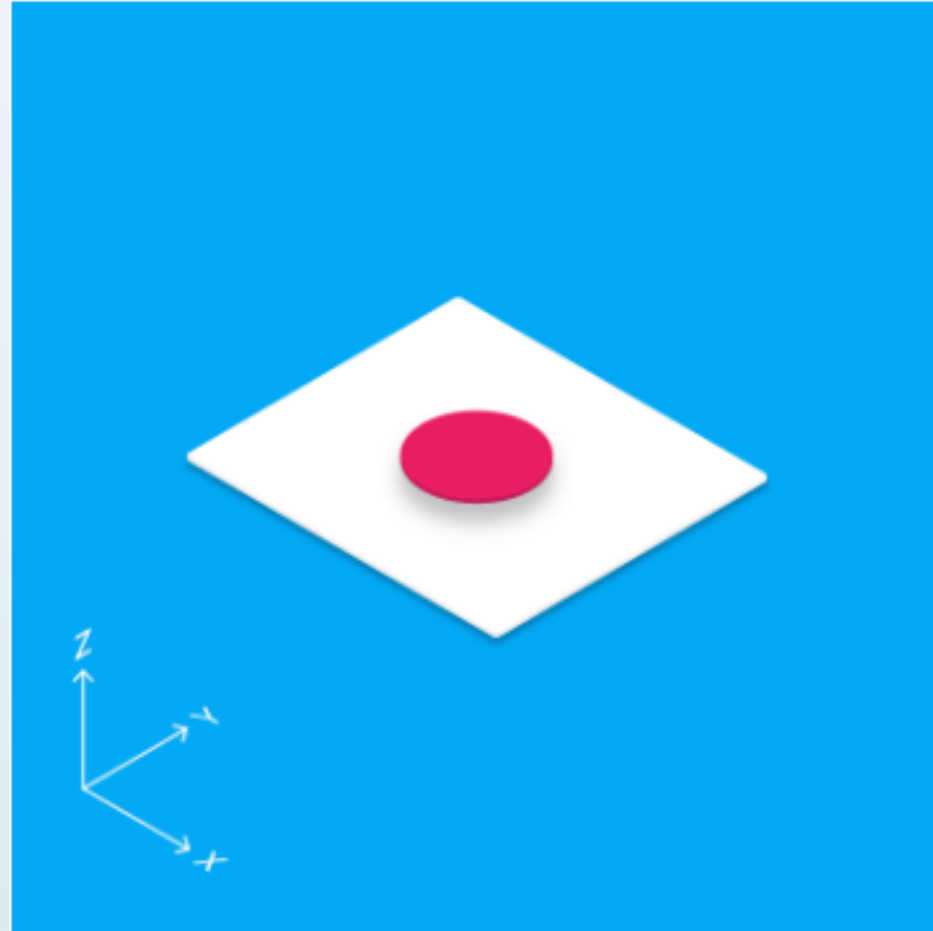
Google Material Design

- Material has certain immutable characteristics and inherent behaviors.
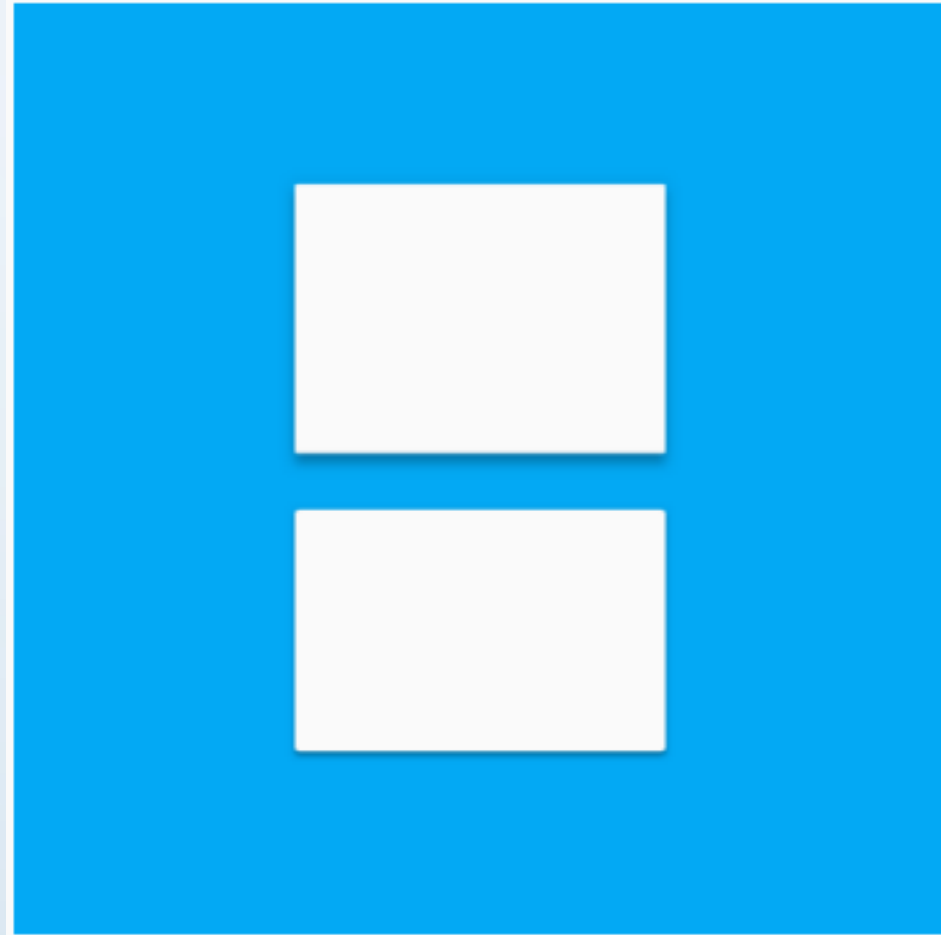
Google Material Design

DESIGN GUIDELINES

The Material Design guidelines are a living document of visual, interactive, and motion guidance.

*LAST UPDATED SEPT 2017

ICONS

Visit our library of over 900 material icons.

*41 NEW ICONS
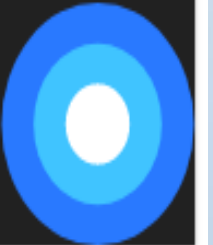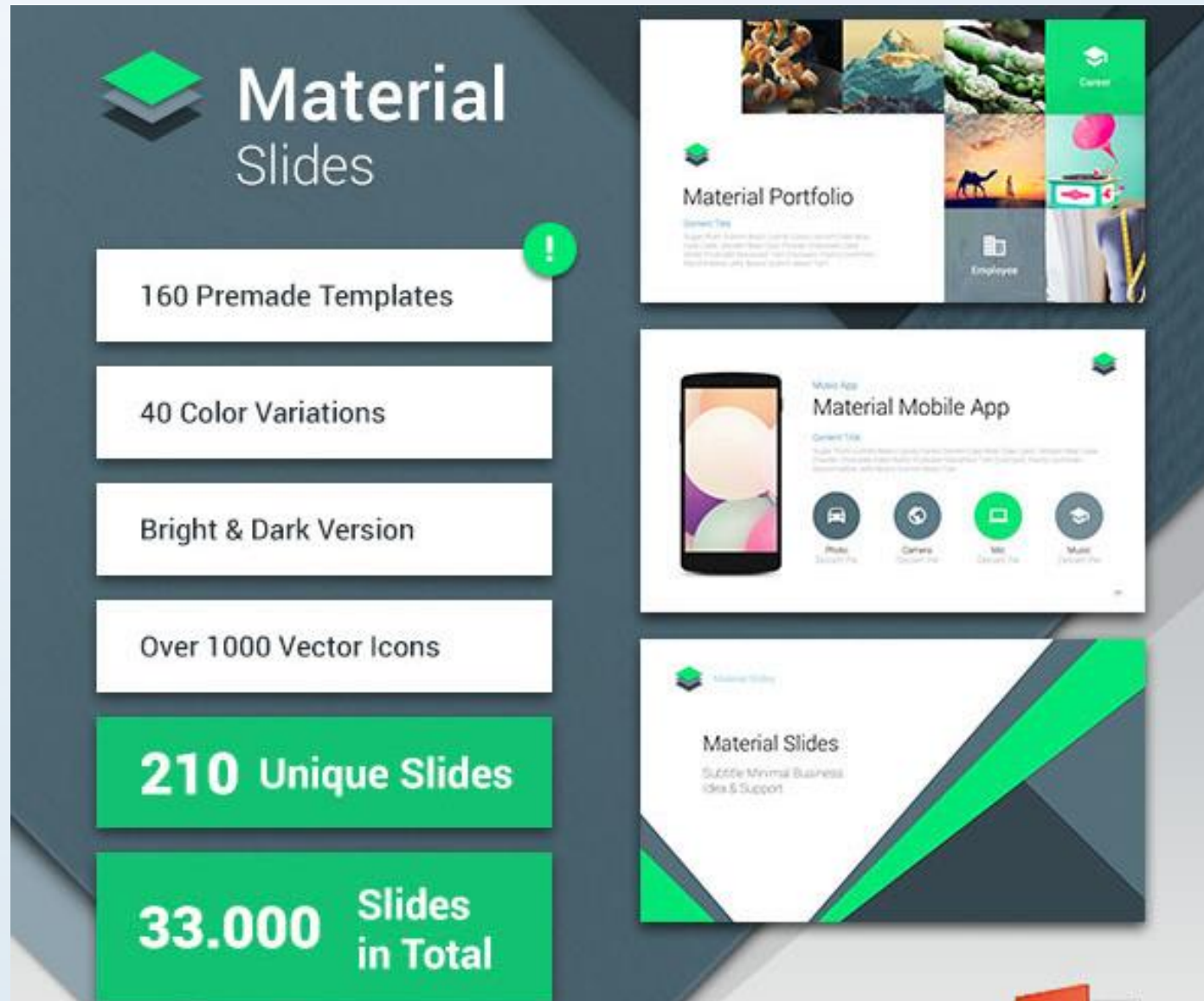
MATERIAL COMPONENTS

Create beautiful apps with modular and customizable UI components.

*NEW WEBSITE

Google Material Design

CSS3 Introduction

- Rounded Corners

- Border Images

- Backgrounds

- Colors

- Gradients

- Shadows

- Text Effects

- CSS Transform

- CSS Transitions

- CSS Animations

CSS3 Introduction

- Latest standard for CSS

- completely backwards-compatible with earlier versions of CSS

- Most of the new CSS3 properties are implemented in modern browsers

- Some of the most important CSS3 modules are

  - Selectors

  - Box Model

  - Backgrounds and Borders

  - Image Values and Replaced Content

  - Text Effects

  - 2D/3D Transformations

  - Animations

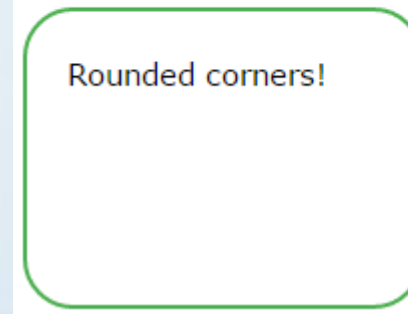 - Multiple Column Layout

  - User Interface

CSS3 Rounded Corners

- you can give any element "rounded corners"

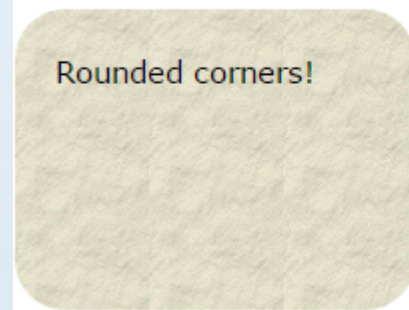- Border-radius property

1. Rounded corners for an element with a specified background color:
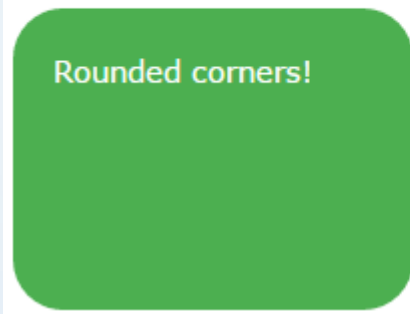
Rounded corners!

2. Rounded corners for an element with a border:

Rounded corners!

3. Rounded corners for an element with a background image:

Rounded corners!

CSS3 Rounded Corners

1. Four values - border-radius: 15px 50px 30px 5px:
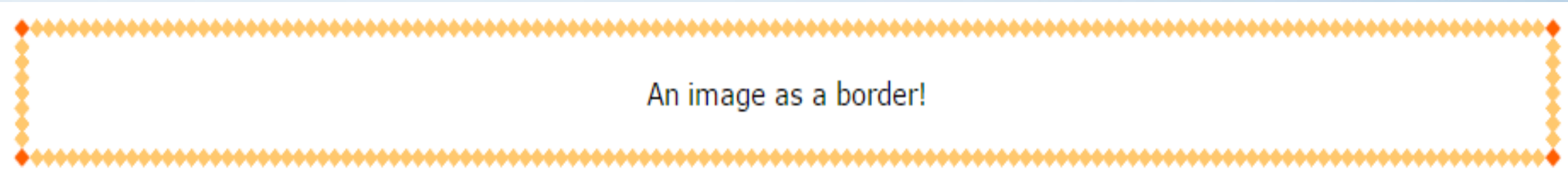
2. Three values - border-radius: 15px 50px 30px:

3. Two values - border-radius: 15px 50px:

CSS3 Border Images

- With the CSS3 border-image property, you can set an image to be used as the border around an element

- allows you to specify an image to be used instead of the normal border around an element

- The property has three parts:

    - The image to use as the border

    - Where to slice the image

   - Define whether the middle sections should be repeated or stretched

An image as a border!

CSS3 Border Images: Example

```
#borderimg {
    width:400px;
    border: 10px solid;
    padding: 15px;
    -webkit-border-image: url(border.png) 30 round;
    /* Safari 3.1-5 */
    -o-border-image: url(border.png) 30 round;
    /* Opera 11-12.1 */
    border-image: url(border.png) 30 round;
}
```
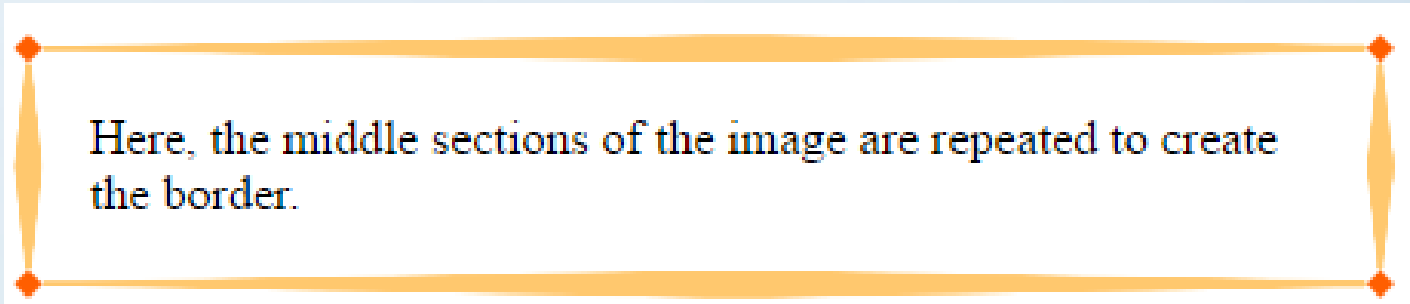
The border-image property specifies an image to be used as the border around an element:

Here, the middle sections of the image are repeated to create the border.
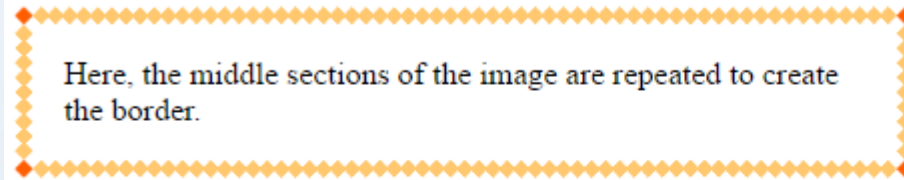
Here is the original image:

Note: Internet Explorer 10, and earlier versions, do not support the border-image property.

Here, the middle sections of the image are repeated to create the border.

CSS3 Backgrounds

- CSS3 contains a few new background properties, which allow greater control of the background element

- You will also learn about the following new CSS3 properties
  - background-size
  - background-origin
  - background-clip

- to add multiple background images for an element

- The different background images are separated by commas, and the images are stacked on top of each other, where the first image is closest to the viewer

CSS3 Backgrounds: Example1

```css
#example1 {
    width:400px;
    background-image: url(img_flwr.gif), url(paper.gif);
    background-position: right bottom, left top;
    background-repeat: no-repeat, repeat;
    padding: 15px;
}
```
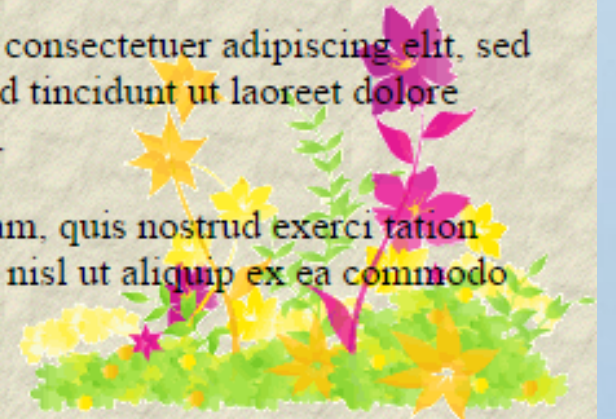
Note: Shorthand
background: url(img_flwr.gif) right bottom
no-repeat, url(paper.gif) left top repeat;

CSS3 Backgrounds: Example2 : background-size

```
#example1 {
    border: 1px solid black;
    background:url(img_flwr.gif);
    background-repeat: no-repeat;
    padding:15px;
}

#example2 {
    border: 1px solid black;
    background:url(img_flwr.gif);
    background-size: 100px 80px;
    background-repeat: no-repeat;
    padding:15px;
}
```

Original background-image:

Lorem Ipsum Dolor

Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.

Resized background-image:

Lorem Ipsum Dolor

Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.
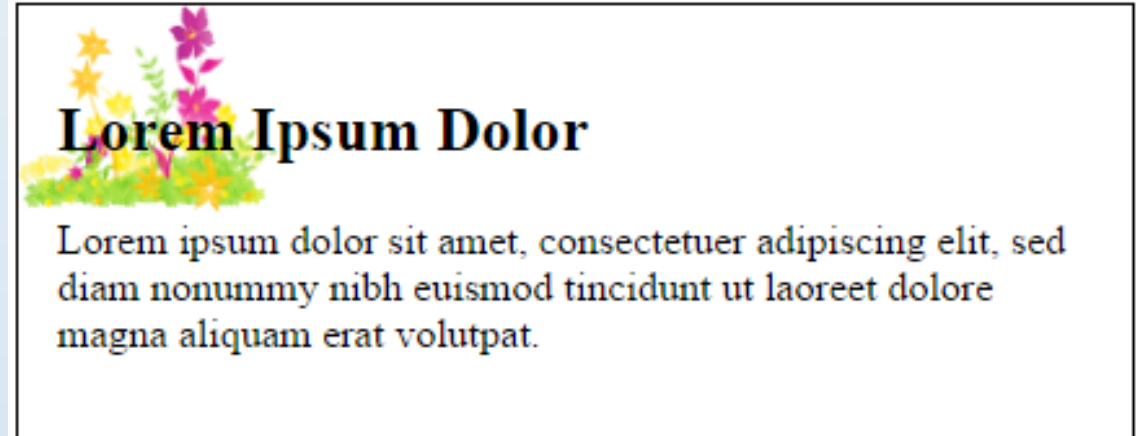
CSS3 Colors

- CSS supports color names, hexadecimal and RGB colors

- In addition, CSS3 also introduces
  - RGBA colors (Red, Green, Blue, Alpha value)
  - HSL colors (Hue, Saturation, Lightness)
  - HSLA colors (Hue, Saturation, Lightness, Alpha:opacity)
  - opacity

CSS3 Colors: RGBA

```
#p1 {background-color:rgba(255,0,0,0.3);}
#p2 {background-color:rgba(0,255,0,0.3);}
#p3 {background-color:rgba(0,0,255,0.3);}
#p4 {background-color:rgba(192,192,192,0.3);}
#p5 {background-color:rgba(255,255,0,0.3);}
#p6 {background-color:rgba(255,0,255,0.3);}
```

RGBA colors:

Red

Green

Blue

Grey

Yellow

Cerise

CSS3 Colors: Opacity

- sets the opacity for the whole element (both background color and text will be opaque/transparent)

- value must be a number between 0.0 (fully transparent) and 1.0 (fully opaque)

```
#p1 {background-color:rgb(255,0,0);opacity:1;}
#p2 {background-color:rgb(255,0,0);opacity:0.8;}
#p3 {background-color:rgb(255,0,0);opacity:0.6;}
#p4 {background-color:rgb(255,0,0);opacity:0.4;}
#p5 {background-color:rgb(255,0,0);opacity:0.2;}
#p6 {background-color:rgb(255,0,0);opacity:0;}
```

Elements with opacity:

Red

Green

Blue

Grey

Yellow

Exercise 1

- https://www.w3schools.com/css/

- Go to above link and try to implement all the css3 properties in your web page

- Note: Use Flexbox properties