



前端網絡開發人員證書

(一) 前端網絡開發

# 9. CSS: Advanced IV

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## Learning outcomes



- In this lesson, you are going to learn:
  - ✓ grids
  - ✓ border images
  - ✓ backgrounds



## 9.1 Grids



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## 9.1 Grids



- It is similar to DIV
- We need to define a big section to place another small sections in it.

## 9.1 Grids example

```
<body>
  <div class="grid-container">
    <div class="grid-item">1</div>
    <div class="grid-item">2</div>
    <div class="grid-item">3</div>
    <div class="grid-item">4</div>
    <div class="grid-item">5</div>
    <div class="grid-item">6</div>
    <div class="grid-item">7</div>
    <div class="grid-item">8</div>
    <div class="grid-item">9</div>
  </div>
</body>
```



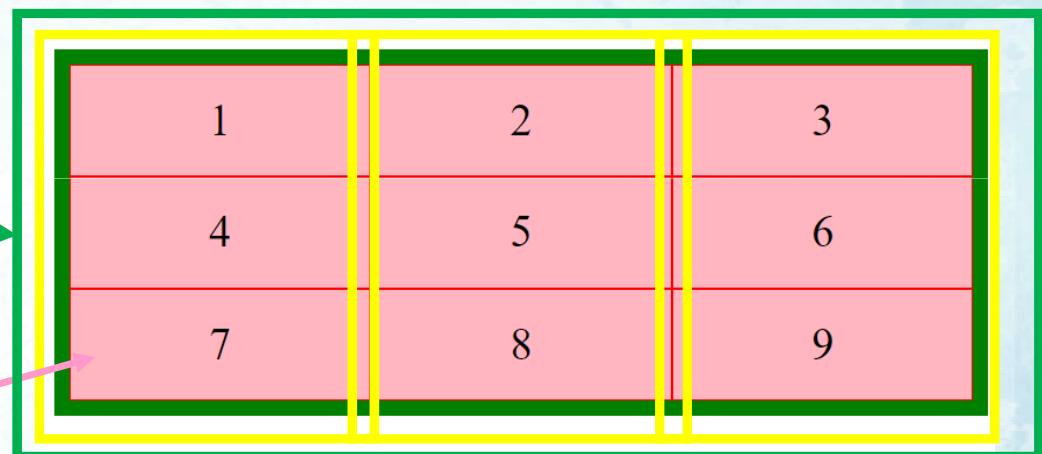
As show below, we can define different elements to display like a grid

1	2	3
4	5	6
7	8	9

## 9.1 Grids example



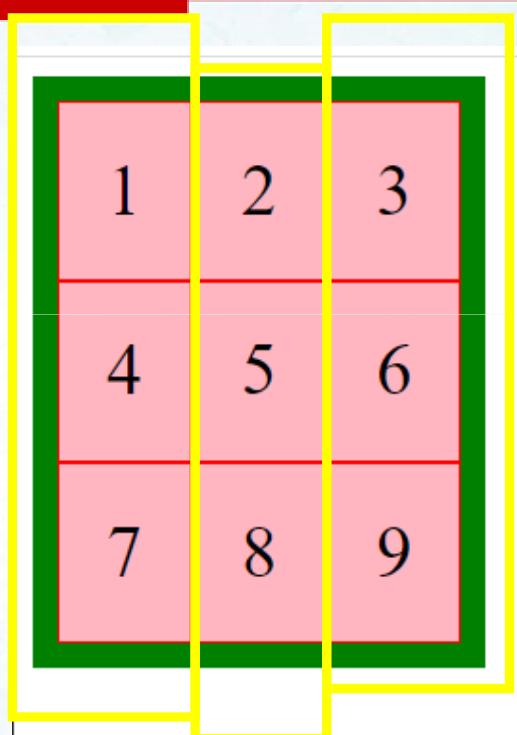
```
<style>
.grid-container {
  display: grid;
  grid-template-columns: auto auto auto;
  background-color: green;
  padding: 10px;
}
.grid-item {
  background-color: lightpink;
  border: 1px solid red;
  padding: 20px;
  font-size: 30px;
  text-align: center;
}
```



We can specify the number of columns though "grid-template-columns"

## 9.1 Grids example

```
<style>
.grid-container {
  display: inline-grid;
  grid-template-columns: auto auto auto;
  background-color: green;
  padding: 10px;
}
.grid-item {
  background-color: lightpink;
  border: 1px solid red;
  padding: 20px;
  font-size: 30px;
  text-align: center;
}
</style>
```



Different kind  
of display will  
show different  
result

## 9.1 Grids



For grid, there are different properties:

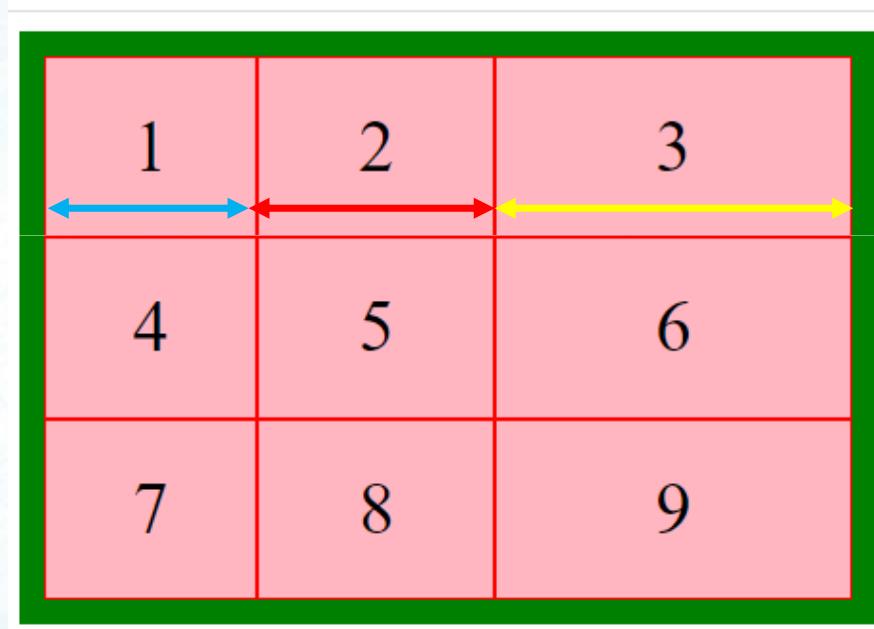
- Grid column
- Grid row
- Grid gap
- Grid line

## 9.1 Grids example(grid columns)



We can specify the width of the column

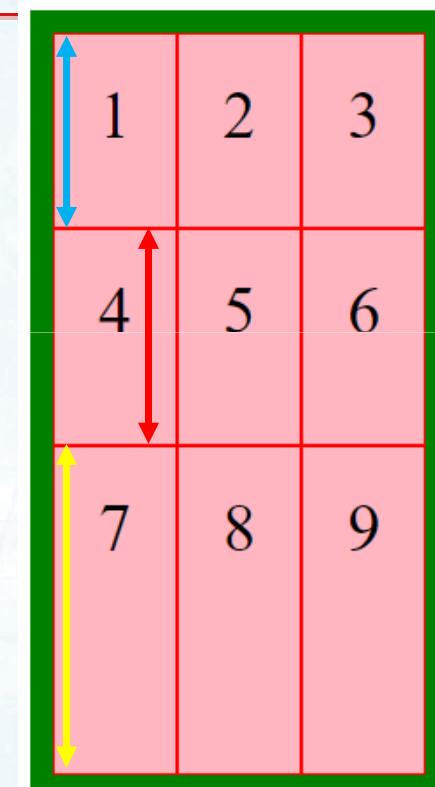
```
.grid-container {  
    display: inline-grid;  
    grid-template-columns: 90px 100px 150px;  
    background-color: green;  
    padding: 10px;  
}
```



## 9.1 Grids example(grid row)

We can specify the width of the row  
Noted: you need to specify the width of column in order to specify the width of row

```
.grid-container {  
    display: inline-grid;  
    grid-template-rows: 90px 100px 150px;  
    grid-template-columns: auto auto auto;  
    background-color: green;  
    padding: 10px;  
}  
grid-item {
```



## 9.1 Grids

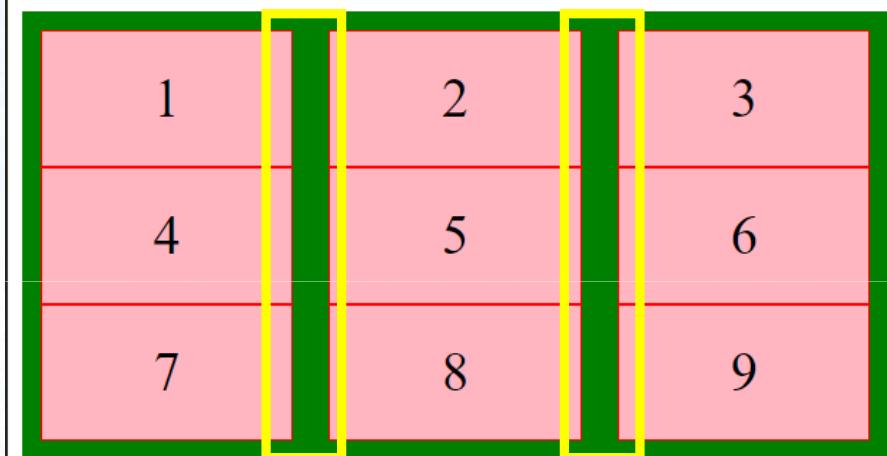
### example(grid gap)



```

<style>
.grid-container {
  display: grid;
  grid-column-gap: 20px;
  grid-template-columns: auto auto auto;
  background-color: green;
  padding: 10px;
}
.grid-item {
  background-color: lightpink;
  border: 1px solid red;
  padding: 20px;
  font-size: 30px;
  text-align: center;
}
</style>

```



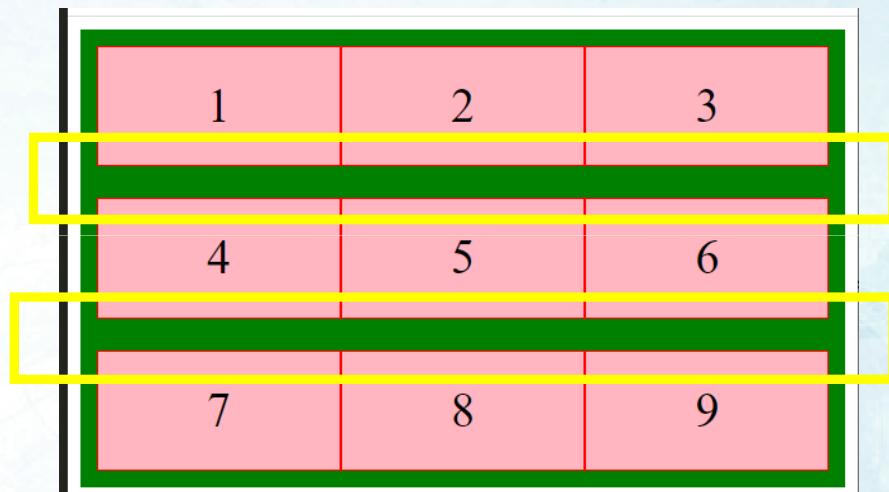
We can specify the gap between column

## 9.1 Grids

### example(grid gap)



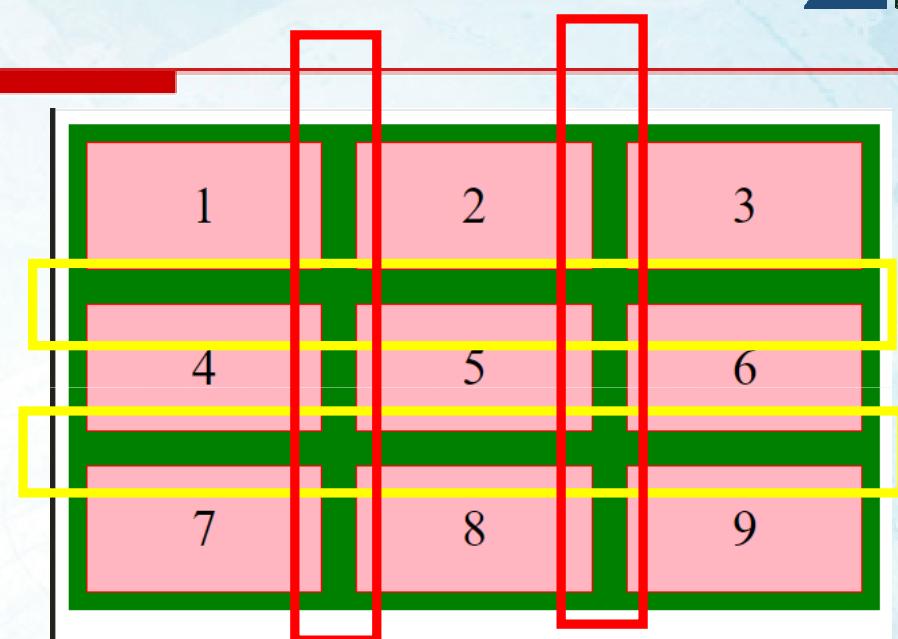
```
<head>
<style>
.grid-container {
  display: grid;
  grid-row-gap: 20px;
  grid-template-columns: auto auto auto;
  background-color: green;
  padding: 10px;
}
.grid-item {
  background-color: lightpink;
  border: 1px solid red;
  padding: 20px;
  font-size: 30px;
  text-align: center;
}
</style>
```



We can specify the gap between row

## 9.1 Grids example(grid gap)

```
.grid-container {  
    display: grid;  
    grid-gap: 20px;  
    grid-template-columns: auto auto auto;  
    background-color: green;  
    padding: 10px;  
}  
.grid-item {  
    background-color: lightpink;  
    border: 1px solid red;  
    padding: 20px;  
    font-size: 30px;  
    text-align: center;  
}  
</style>
```



We can specify the gap of row and column by the syntax “grid-gap”

## 9.1 Grids

### example(grid line)



```
<style>
  .grid-container {
    display: grid;
    grid-gap: 20px;
    grid-template-columns: auto auto auto;
    background-color: green;
    padding: 10px;
  }

  .grid-container > div {
    background-color: lightpink;
    text-align: center;
    padding: 20px 0;
    font-size: 30px;
  }

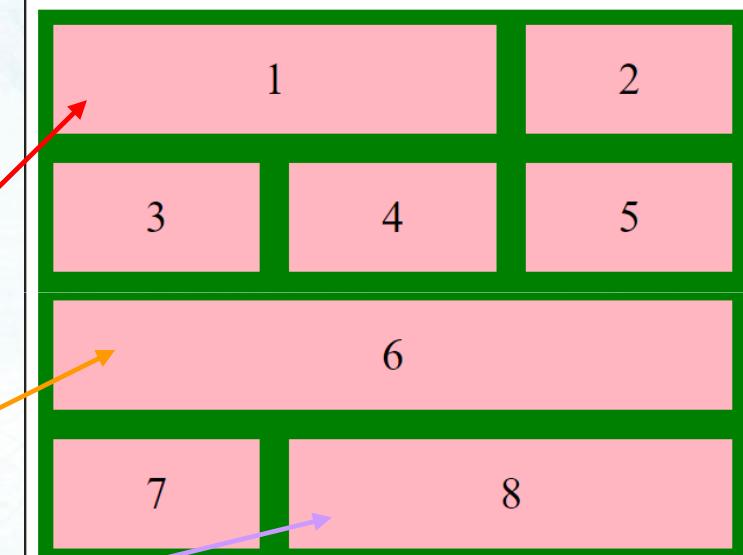
```

```
.item1 {
  grid-column-start: 1;
  grid-column-end: 3;
}
```

```
.item6{
  grid-column-start: 1;
  grid-column-end: 4;
}
```

```
.item8{
  grid-column-start: 2;
  grid-column-end: 4;
}
```

```
/style>
```



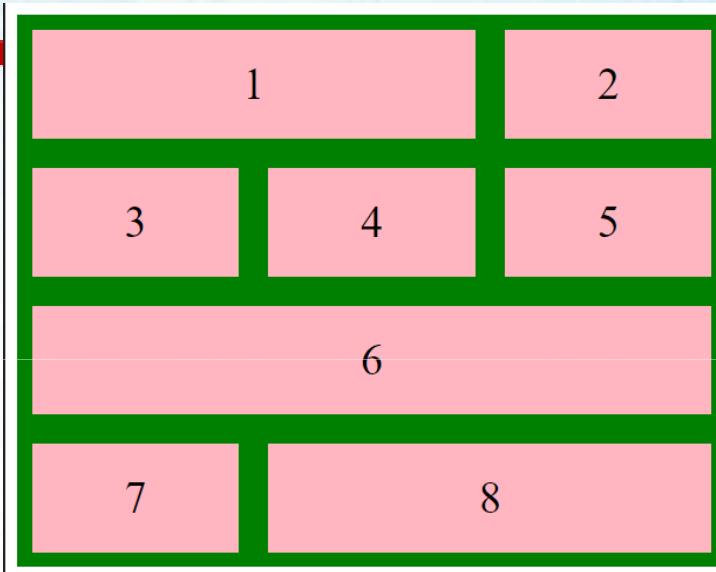
We can specify the box to start with specific line

## 9.1 Grids

### addition\_example

```
<style>
  .grid-container {
    display: grid;
    grid-gap: 20px;
    grid-template-columns: auto auto auto;
    background-color: green;
    padding: 10px;
  }

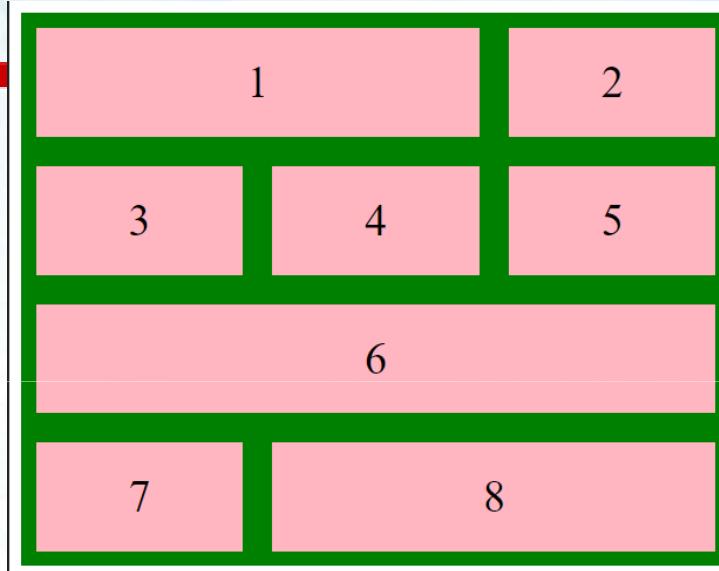
  .grid-container > div {
    background-color: lightpink;
    text-align: center;
    padding: 20px 0;
    font-size: 30px;
  }
}
```



We can use “.grid-container > div” to define the style of the grid items

## 9.1 Grids addition\_example

```
.item1 {  
    grid-column-start: 1;  
    grid-column-end: 3;  
}  
  
.item6{  
    grid-column-start: 1;  
    grid-column-end: 4;  
}  
  
.item8{  
    grid-column-start: 2;  
    grid-column-end: 4;  
}  
  
/style>
```



Otherwise, you may specify different classes to the items and specific the style each by each



## 9.2 Border image



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## 9.2 Border image



We can use an image to be the border. In the following example, we will use the picture “border.jpg”



## 9.2 Border image example(round)



We can use an image to be the border, be aware of the number of round is related to the size of your image.

```
<body>
  <H1>This is the first section</H1>
  <h1 class="section2"> This is the second section</h1>
</body>
```

```
.section2 {
  border: 10px solid transparent;
  padding: 15px;
  border-image: url(border.jpg) 70 round;
}
```

**This is the first section**

**This is the second section**

## 9.2 Border image example(round)



Smaller size of the image can have a smaller number of rounds, otherwise the image may not show clearly.

```
<body>
  <H1>This is the first section</H1>
  <h1 class="section2"> This is the second section</h1>
</body>
```

```
.section2 {
  border: 10px solid transparent;
  padding: 15px;
  border-image: url(border.jpg) 35 round;
}
```

This is the first section

This is the second section

## 9.2 Border image example(stretch)



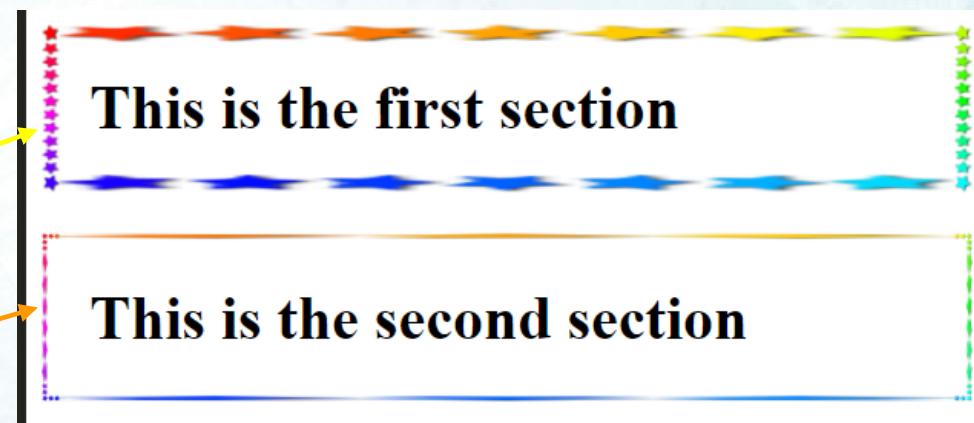
Different number of stretch will affect the display of border

```
<head>
<style>

  .section1 {
    border: 10px solid transparent;
    padding: 15px;
    border-image: url(border.jpg) 70 stretch;
  }

  .section2 {
    border: 10px solid transparent;
    padding: 15px;
    border-image: url(border.jpg) 200 stretch;
  }

</style>
```



## 9.2 Border image addition\_ rounds



We can use different unit to define the border-image

- 50 round
- 50% round

## 9.2 Border image addition( 70 round& 45% ) \_ example



```
<style>

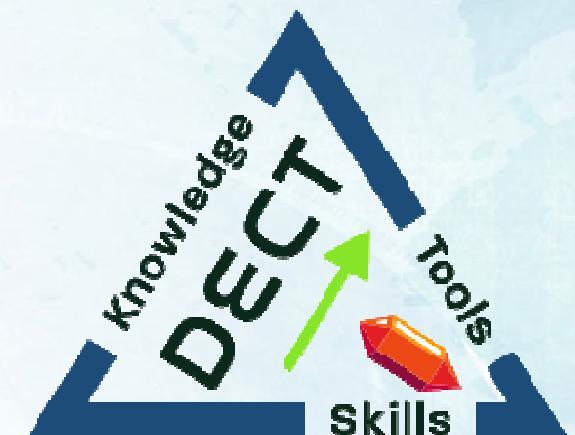
  .section1 {
    border: 10px solid transparent;
    padding: 15px;
    border-image: url(border.jpg) 70 round;
  }
  .section2 {
    border: 10px solid transparent;
    padding: 15px;
    border-image: url(border.jpg) 45%;
  }

</style>
```

A screenshot of a web page demonstrating the use of border images. It features two sections: "This is the first section" and "This is the second section". The first section has a border with a "70 round" pattern, resulting in a thick, multi-colored border. The second section has a border with a "45%" pattern, creating a thinner, more uniform border. Arrows point from the corresponding CSS code lines to their respective visual results on the page.



## 9.3 Backgrounds



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## 9.3 Backgrounds



- In this chapter, we will explain more on how to combine 2 images into 1 and set it as the background image

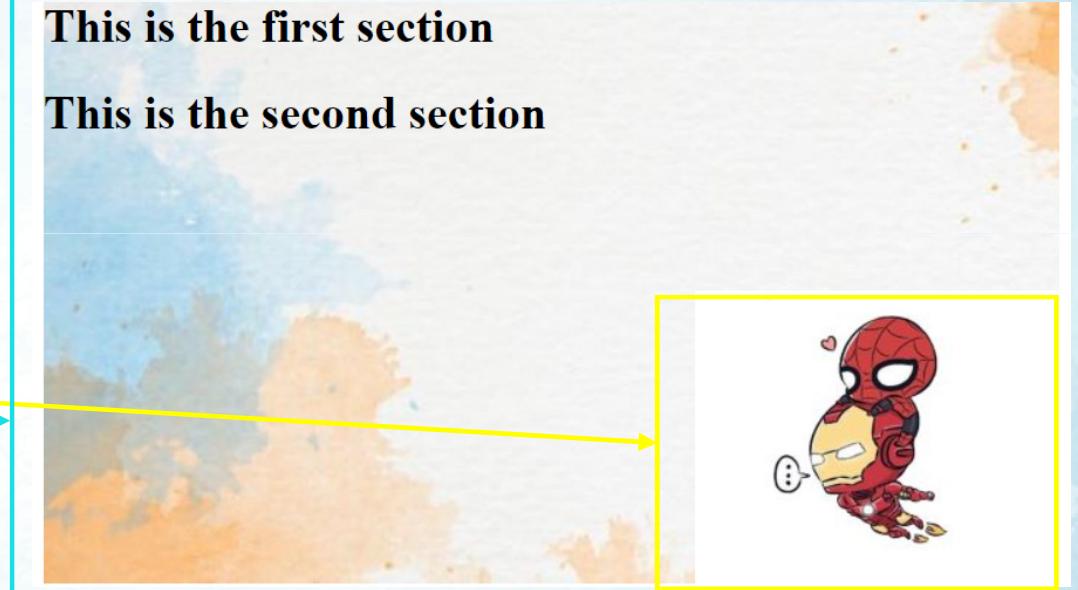
## 9.3 Backgrounds example



We can combine 2 image into 1 as a background, however, the size of the image is important which may affect the actual

```
<style>
div{
    background-image: url("picture 1.jpg"), url("background.jpg");
    background-position: right bottom, left top;
    background-repeat: no-repeat, repeat;
    height: 400px;
}
</style>
```

This is the first section  
This is the second section



## 9.3 Backgrounds example

For the image to be emblemed in, it is better to have a transparent background, otherwise, it may be displayed as the example.



This is the first section

This is the second section



## 9.3 Backgrounds



As shown above, we can specify the position of the image with a separate field “background-position” however, we can use a quicker way.

*background-position: right bottom, left top;*

## 9.3 Backgrounds



We can use  
background: url("image 1.jpg"), left,  
url("image 2.jpg"), right;

Note: the **" "** for image is necessary , it will not work if you forget to add this

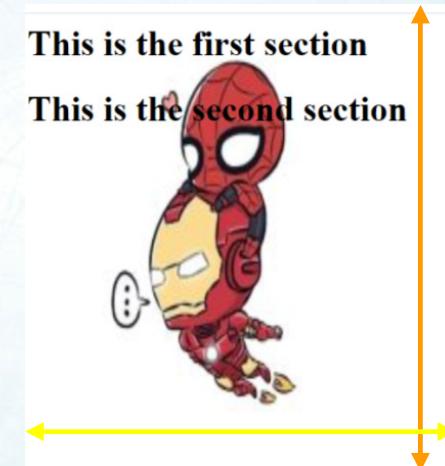


## 9.3 Backgrounds addition(background-size)



We can also define the size of the background, be aware of the that if it is inside a div, the div is better to have a size that bigger than the image size, otherwise it may not show

```
<style>
  div{
    background-image: url("picture 1.jpg");
    background-size: 350px 400px;
    background-repeat: no-repeat;
    height: 400px;
  }
</style>
```



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## 9.3 Backgrounds addition(background-size)



Rather than define the background-size with specific PX, there are 2 ways to specify the background-size:

- Contain
- Cover

## 9.3 Backgrounds addition(contain)



We can use “contain” to ensure the image size fix in the DIV.

```
<style>
  body{
    background-color: lightseagreen;
  }
  div{
    border: red solid 2px;
    background-image: url("picture 1.jpg");
    background-size:contain;
    background-repeat: no-repeat;
    height: 400px;
    width: 400px;
  }
</style>
```

This is the first section  
This is the second section



## 9.3 Backgrounds addition(cover)



We can use “cover” to ensure the image cover the DIV

```
<style>
  div{
    border: red solid 2px;
    background-image: url("picture 1.jpg");
    background-size:cover;
    background-repeat: no-repeat;
    height: 400px;
    width: 400px;
  }
</style>
```

This is the first section  
This is the second section



## 9.3 Backgrounds addition(background-clip)



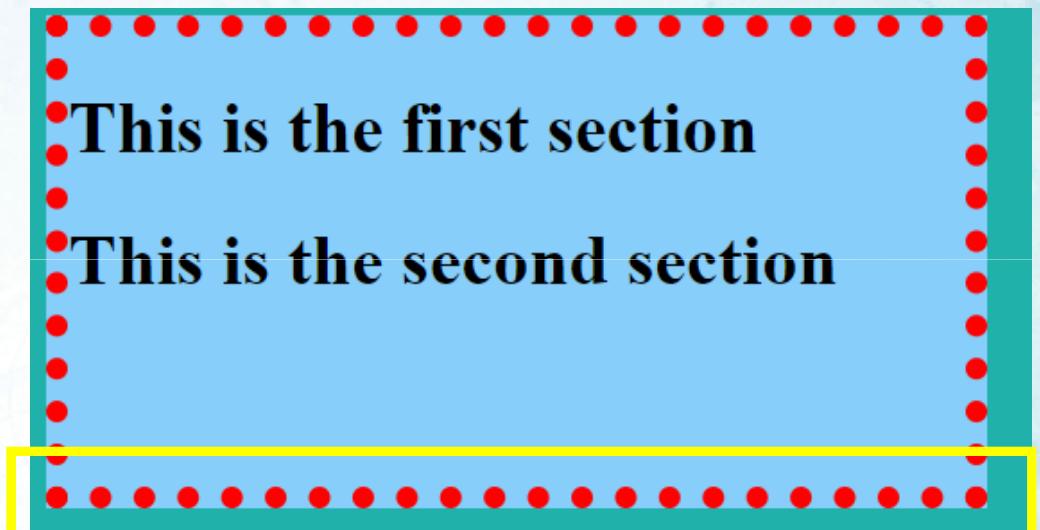
We can use the property: “background-clip” to specify the drawing area of the background. There are 2 properties can be specified:

- Content-box
- Padding-box

## 9.3 Backgrounds addition\_example(background-clip)(default)



```
<style>
  body{
    background-color: lightseagreen;
  }
  div{
    border: red dotted 10px;
    background-color: lightskyblue;
    height: 200px;
    width: 400px;
  }
</style>
```



## 9.3 Backgrounds addition(background-clip)(content-box)

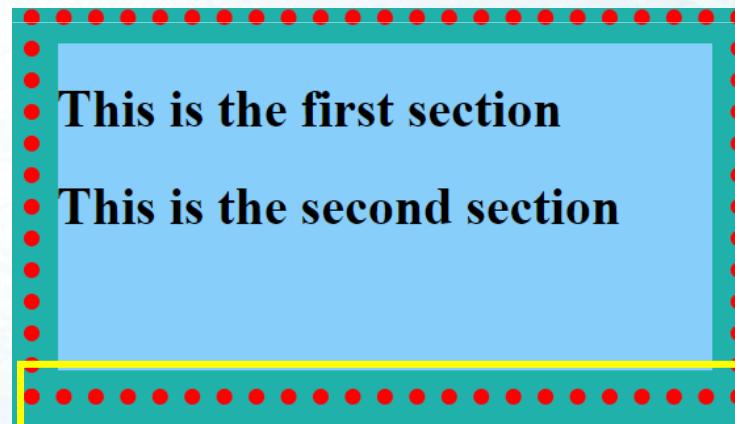


“background- clip: content-box” is to ensure that the background is painted **WITHIN** the content.

Note: it is better to have padding to see the difference.

```
<style>
body{
    background-color: lightseagreen;
}
div{
    border: red dotted 10px;
    background-color: lightskyblue;
    padding: 10px;
    height: 200px;
    width: 400px;
    background-clip: content-box;
}

</style>
```

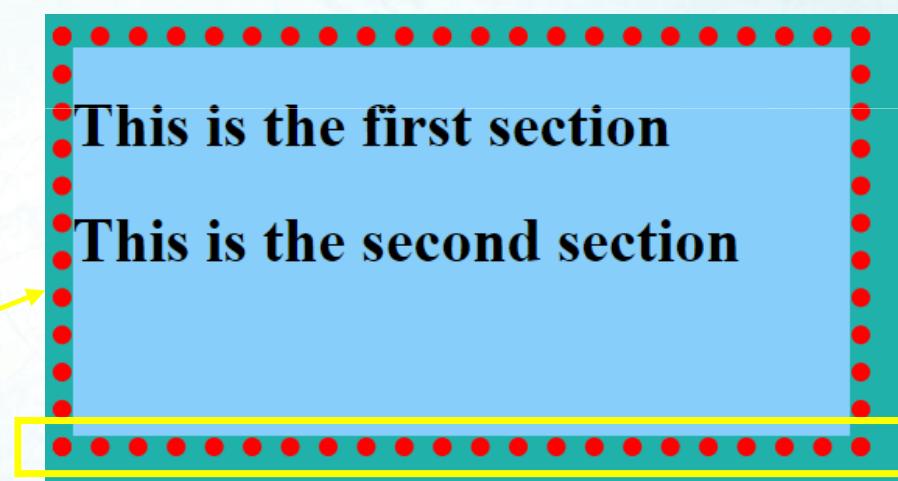


## 9.3 Backgrounds addition\_example(background-clip)(padding-box)

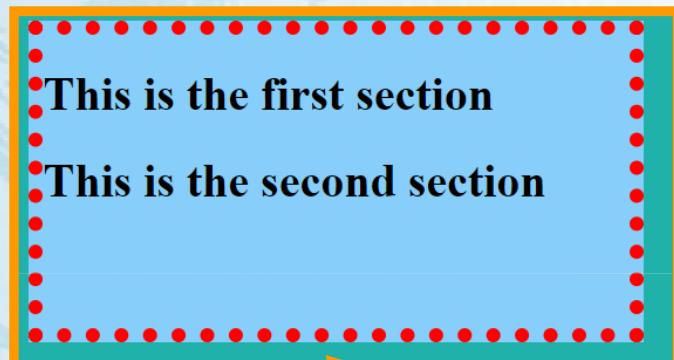


Its background is painted outside the edge of padding

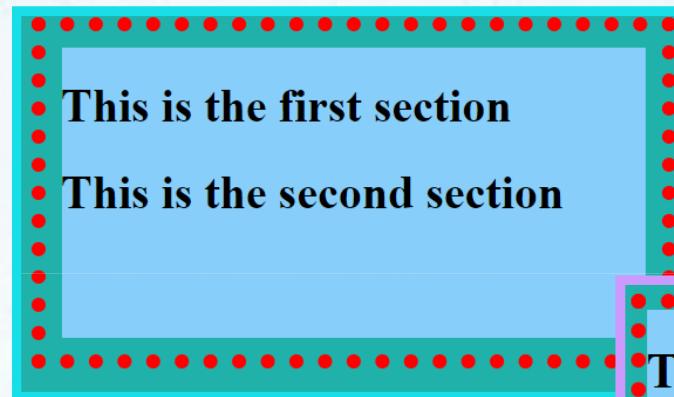
```
<style>
  body{
    background-color: lightseagreen;
  }
  div{
    border: red dotted 10px;
    background-color: lightskyblue;
    width: 400px;
    height: 200px;
    background-clip: padding-box;
  }
</style>
```



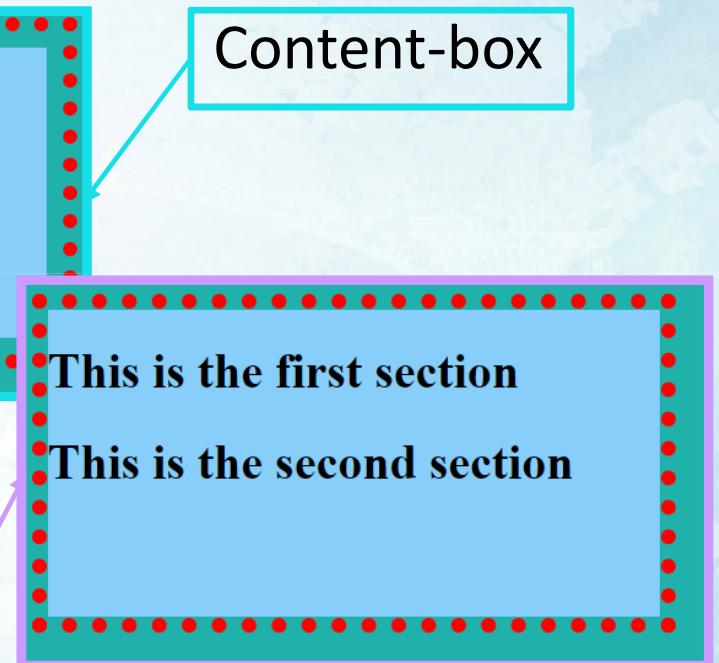
## 9.3 Backgrounds addition(summary)



original



Padding-box



Content-box

We can define different size of the background to produce a better interface



# Any questions?



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# Activity



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# Revision



Please answer the following question:

1. How can we make a mouse over effect to a button?

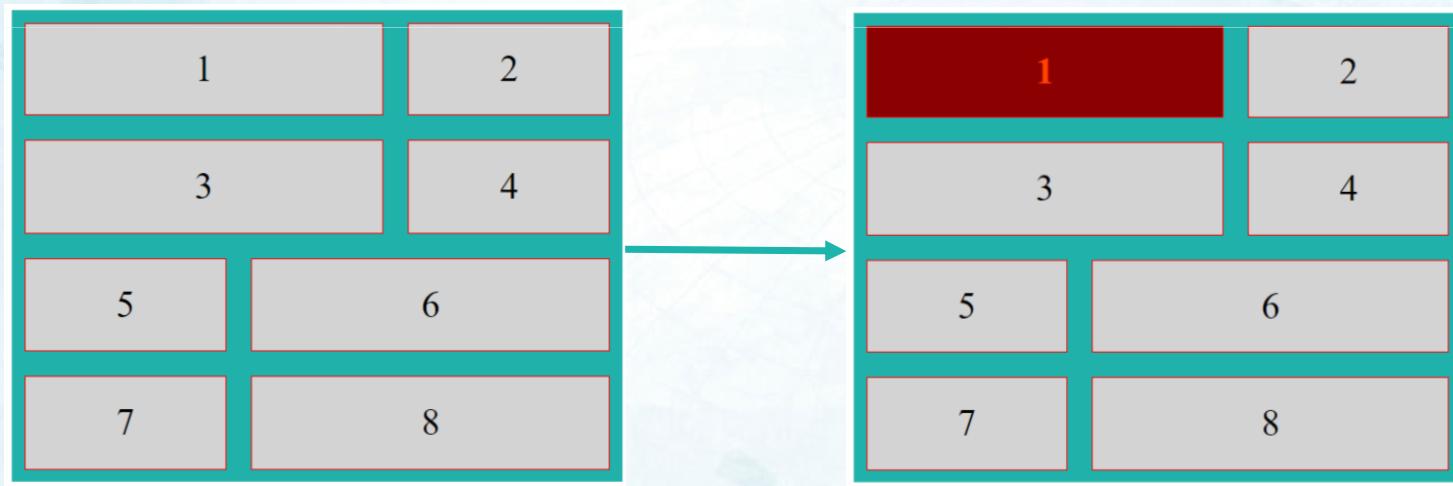
Answer:

hover{ **CSS styles** }

# Activity 6



In the following activity, you are going to create a simple grid form with a hovable effect, as shown below:



# Activity 6\_suggested answer(CSS)



```
.grid-container {
  display: grid;
  grid-gap: 20px;
  grid-template-columns: auto auto auto;
  background-color: lightseagreen;
  padding: 10px;
}

.grid-container > div {
  background-color: lightgray;
  border: 1px solid red;
  padding: 20px;
  font-size: 30px;
  text-align: center;
}

.grid-container > div:hover{
  color: orangered;
  background: darkred;
  font-weight: bold;
}
```

```
.item1 {
  grid-column-start: 1;
  grid-column-end: 3;
}

.item3{
  grid-column-start: 1;
  grid-column-end: 3;
}

.item6{
  grid-column-start: 2;
  grid-column-end: 4;
}

.item8{
  grid-column-start: 2;
  grid-column-end: 4;
}
```

# Activity 6\_suggested answer(HTML)



```
<body>

<div class="grid-container">
    <div class="item1">1</div>
    <div class="item2">2</div>
    <div class="item3">3</div>
    <div class="item4">4</div>
    <div class="item5">5</div>
    <div class="item6">6</div>
    <div class="item7">7</div>
    <div class="item8">8</div>
</div>

</body>
```



# Reference



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# Reference



There are some useful websites for reference:

1. [https://www.w3schools.com/css/css\\_grid.asp](https://www.w3schools.com/css/css_grid.asp)
2. [https://www.w3schools.com/css/css3\\_border\\_images.asp](https://www.w3schools.com/css/css3_border_images.asp)
3. [https://www.w3schools.com/css/css3\\_backgrounds.asp](https://www.w3schools.com/css/css3_backgrounds.asp)