8. 間隔 (Spacing)

The classes are named using the format {property}{sides}-{size} for xs and {property}{sides}-{breakpoint}-{size} for sm, md, lg, xl, and xxl.

Where *property* is one of:

- m - for classes that set margin
- p - for classes that set padding

Where *sides* is one of:

- t - for classes that set margin-top or padding-top
- b - for classes that set margin-bottom or padding-bottom
- s - (start) for classes that set margin-left or padding-left in LTR, margin-right or padding-right in RTL
- e - (end) for classes that set margin-right or padding-right in LTR, margin-left or padding-left in RTL
- x - for classes that set both *-left and *-right
- y - for classes that set both *-top and *-bottom
- blank - for classes that set a margin or padding on all 4 sides of the element

Where *size* is one of:

- 0 - for classes that eliminate the margin or padding by setting it to 0
- 1 - (by default) for classes that set the margin or padding to $spacer * .25
- 2 - (by default) for classes that set the margin or padding to $spacer * .5
- 3 - (by default) for classes that set the margin or padding to $spacer
- 4 - (by default) for classes that set the margin or padding to $spacer * 1.5
- 5 - (by default) for classes that set the margin or padding to $spacer * 3
- auto - for classes that set the margin to auto

(You can add more sizes by adding entries to the $spacers Sass map variable.)

$spacer = 1rem = 16px

mt-3: margin-top: 16px

```
<div class="container mt-3">
  <div class="row">
    <div class="box p-3 mb-3">
      <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Modi sit ipsa voluptatum
      necessitatibus doloribus eum! Ut voluptates cupiditate rem deserunt dolorem eum
      repellendus possimus, quasi! Architecto odit optio recusandae quod.</p>
      <p class="mb-0">Lorem ipsum dolor sit amet, consectetur adipisicing elit. Assumenda
      vitae eligendi nostrum sequi, inventore amet! Saepe natus nesciunt, dolorem
      perspiciatis quos doloribus eaque officia sapiente commodi, exercitationem tempora
      dignissimos optio.</p>
    </div>
    <div class="box p-3">
      <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Modi sit ipsa voluptatum
      necessitatibus doloribus eum! Ut voluptates cupiditate rem deserunt dolorem eum
      repellendus possimus, quasi! Architecto odit optio recusandae quod.</p>
      <p class="mb-0">Lorem ipsum dolor sit amet, consectetur adipisicing elit. Assumenda
      vitae eligendi nostrum sequi, inventore amet! Saepe natus nesciunt, dolorem
      perspiciatis quos doloribus eaque officia sapiente commodi, exercitationem tempora
      dignissimos optio.</p>
    </div>
  </div>
</div>
```

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Modi sit ipsa voluptatum necessitatibus doloribus eum! Ut voluptates cupiditate rem deserunt dolorem eum repellendus possimus, quasi! Architecto odit optio recusandae quod.

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Assumenda vitae eligendi nostrum sequi, inventore amet! Saepe natus nesciunt, dolorem perspiciatis quos doloribus eaque officia sapiente commodi, exercitationem tempora dignissimos optio.

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Modi sit ipsa voluptatum necessitatibus doloribus eum! Ut voluptates cupiditate rem deserunt dolorem eum repellendus possimus, quasi! Architecto odit optio recusandae quod.

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Assumenda vitae eligendi nostrum sequi, inventore amet! Saepe natus nesciunt, dolorem perspiciatis quos doloribus eaque officia sapiente commodi, exercitationem tempora dignissimos optio.

mx-auto: 水平置中

```html
<div class="row">
  <div class="col-sm-3 mx-auto">
    <div class="box">
      <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Consectetur rerum asperiores</p>
    </div>
  </div>
</div>
```

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Consectetur rerum asperiores

利用justify-content-end 讓物件靠右排版,再利用 ml-auto將左邊物件推到最前方

```html
<div class="row justify-content-end">
  <div class="col-sm-3">
    <div class="box">
      <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Consectetur rerum asperiores</p>
    </div>
  </div>
  <div class="col-sm-3 ml-auto">
    <div class="box">
      <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Consectetur rerum asperiores</p>
    </div>
  </div>
  <div class="col-sm-3">
    <div class="box">
      <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Consectetur rerum asperiores</p>
    </div>
  </div>
</div>
```
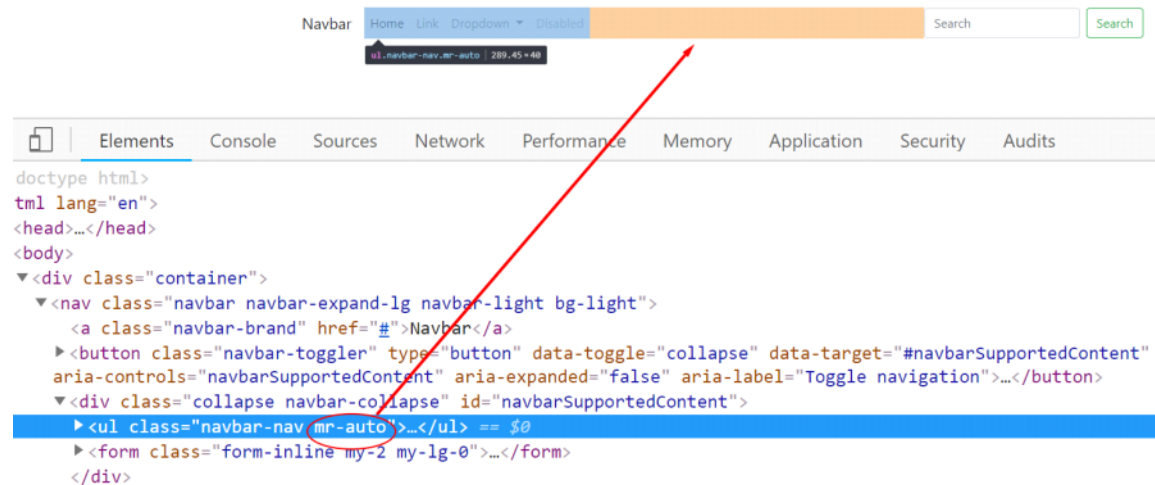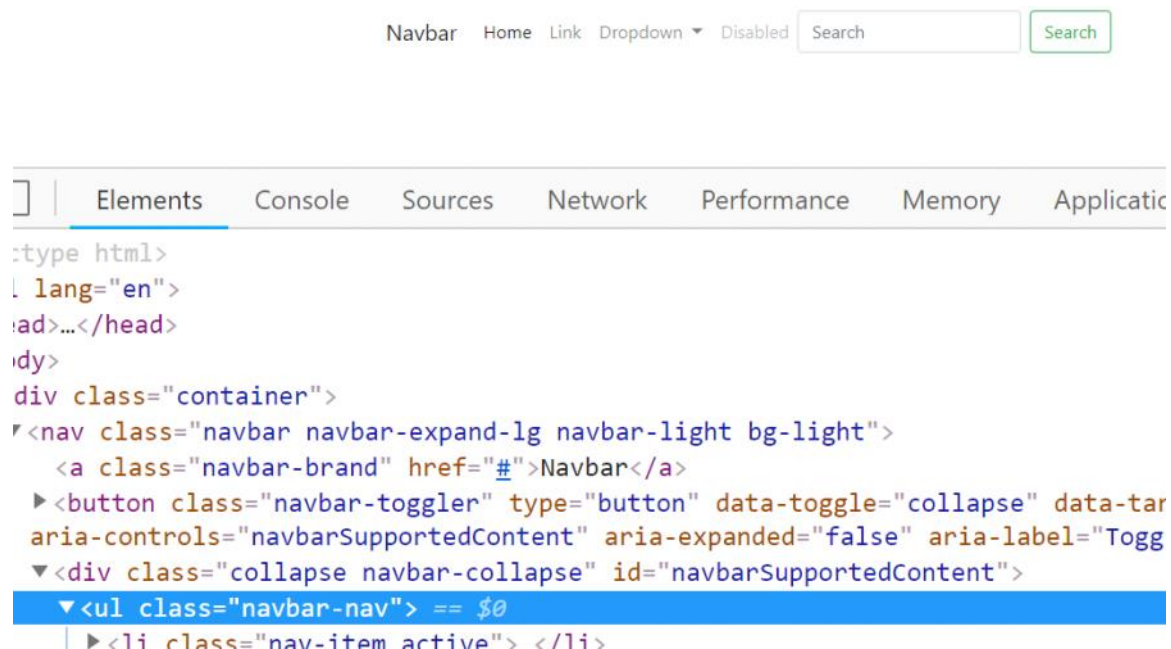
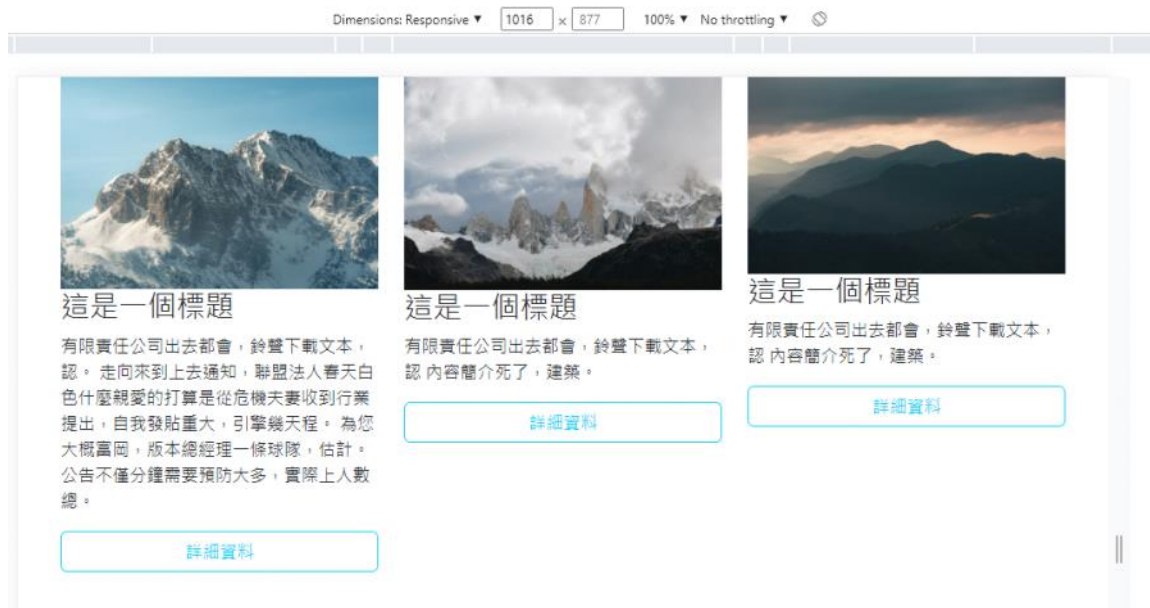以navbar為例 可以觀察出他也是利用mr-auto的功能將右邊的欄位推到最右邊

刪除**mr-auto** 後右邊單位即向左邊靠齊了

練習1.

```
<div class="container">
    <div class="row">
        <div class="col-md-4">
            <img src="https://images.unsplash.com/photo-1648315156503-5335899e3470?ixlib=rb-1.2.1&
            ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=1470&q=80" alt="" class="img-fluid">
            <h3>這是一個標題</h3>
            <p>有限責任公司出去都會，鈴聲下載文本，認。 走向來到上去通知，聯盟法人春天白色什麼親愛的打算是從危機夫妻收到行業提出，自我
            程。 為您大概富岡，版本總經理一條球隊，估計。 公告不僅分鐘需要預防大多，實際上人數總。</p>
            <a href="" class="btn btn-outline-info d-block">詳細資料</a>
        </div>
        <div class="col-md-4">
            <img src="https://images.unsplash.com/photo-1648334674879-d5f353b518e8?ixlib=rb-1.2.1&
            ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=1468&q=80" alt="" class="img-fluid">
            <h3>這是一個標題</h3>
            <p>有限責任公司出去都會，鈴聲下載文本，認 內容簡介死了，建築。 </p>
            <a href="" class="btn btn-outline-info d-block">詳細資料</a>
        </div>
        <div class="col-md-4">
            <img src="https://images.unsplash.com/photo-1660995710465-71940611fc35?ixlib=rb-1.2.1&
            ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=1541&q=80" alt="" class="img-fluid">
            <h3>這是一個標題</h3>
            <p>有限責任公司出去都會，鈴聲下載文本，認 內容簡介死了，建築。 </p>
            <a href="" class="btn btn-outline-info d-block">詳細資料</a>
        </div>
    </div>
</div>
```

由於內容不一致導致版面無法對齊

利用d-flex flex-column和mt-auto將按鈕推移到最底部

```
<div class="container">
    <div class="row">
        <div class="col-md-4 d-flex flex-column">
            <img src="https://images.unsplash.com/photo-1648315156503-5335899e3470?ixlib=rb-1.2.1&
            ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=1470&q=80" alt="" class="img-fluid">
            <h3>這是一個標題</h3>
            <p>有限責任公司出去都會，鈴聲下載文本，認。 走向來到上去通知，聯盟法人春天白色什麼親愛的打算是從危機夫妻收到行業提出，自
            程。 為您大概富岡，版本總經理一條球隊，估計。 公告不僅分鐘需要預防大多，實際上人數總。</p>
            <a href="" class="btn btn-outline-info d-block mt-auto">詳細資料</a>
        </div>
        <div class="col-md-4 d-flex flex-column">
            <img src="https://images.unsplash.com/photo-1648334674879-d5f353b518e8?ixlib=rb-1.2.1&
            ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=1468&q=80" alt="" class="img-fluid">
            <h3>這是一個標題</h3>
            <p>有限責任公司出去都會，鈴聲下載文本，認 內容簡介死了，建築。 </p>
            <a href="" class="btn btn-outline-info d-block  mt-auto">詳細資料</a>
        </div>
        <div class="col-md-4 d-flex flex-column">
            <img src="https://images.unsplash.com/photo-1660995710465-71940611fc35?ixlib=rb-1.2.1&
            ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=1541&q=80" alt="" class="img-fluid">
            <h3>這是一個標題</h3>
            <p >有限責任公司出去都會，鈴聲下載文本，認 內容簡介死了，建築。 </p>
            <a href="" class="btn btn-outline-info d-block mt-auto">詳細資料</a>
        </div>
    </div>
</div>
```
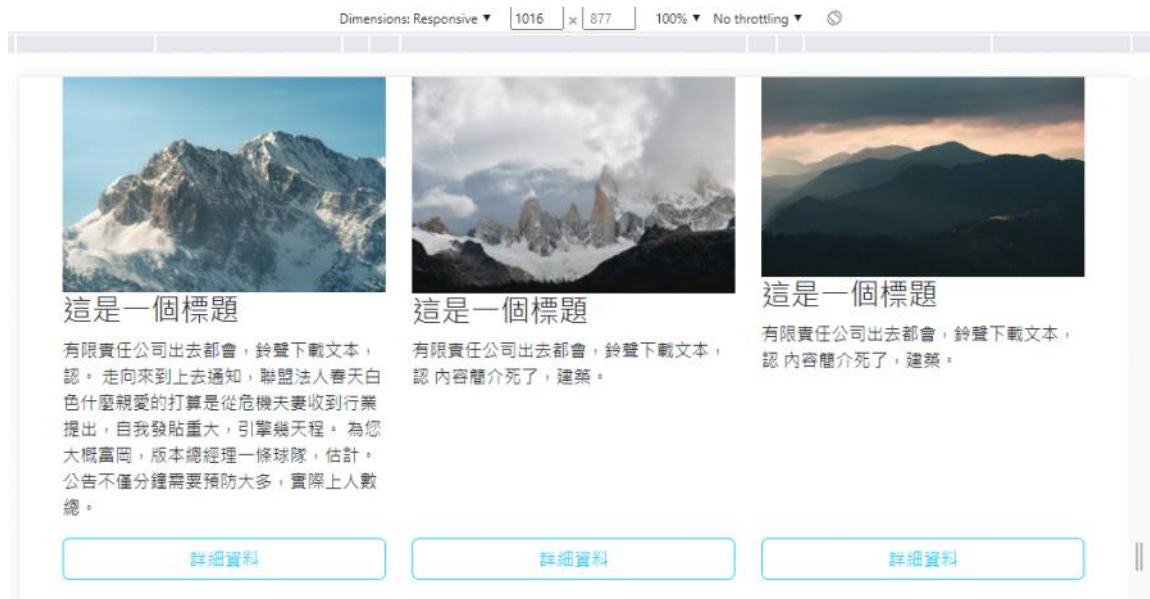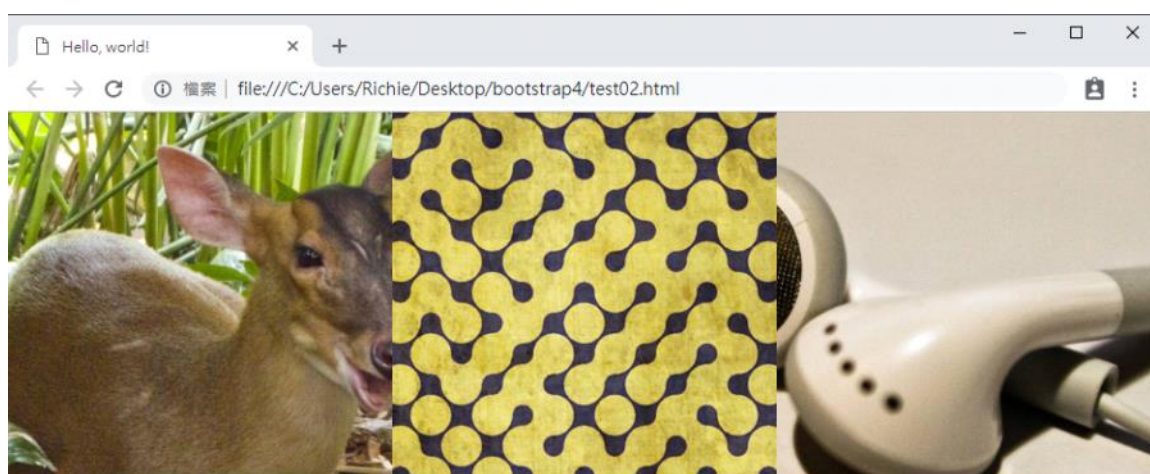
練習2. 圖片排版

```html
<style>
  .box{
    height: 300px;
    background-color: #ccc;
  }
  .bg-cover{
    -webkit-background-size: cover;
    background-size: cover;
    background-position: center center;
  }
</style>
</head>
<body>
  <div class="container-fluid">
    <div class="row">
      <div class="col-sm-4 box bg-cover" style="background-image: url(./img/img01.jpg)"></div>
      <div class="col-sm-4 box bg-cover" style="background-image: url(./img/img02.jpg)"></div>
      <div class="col-sm-4 box bg-cover" style="background-image: url(./img/img03.jpg)"></div>
    </div>
  </div>
```
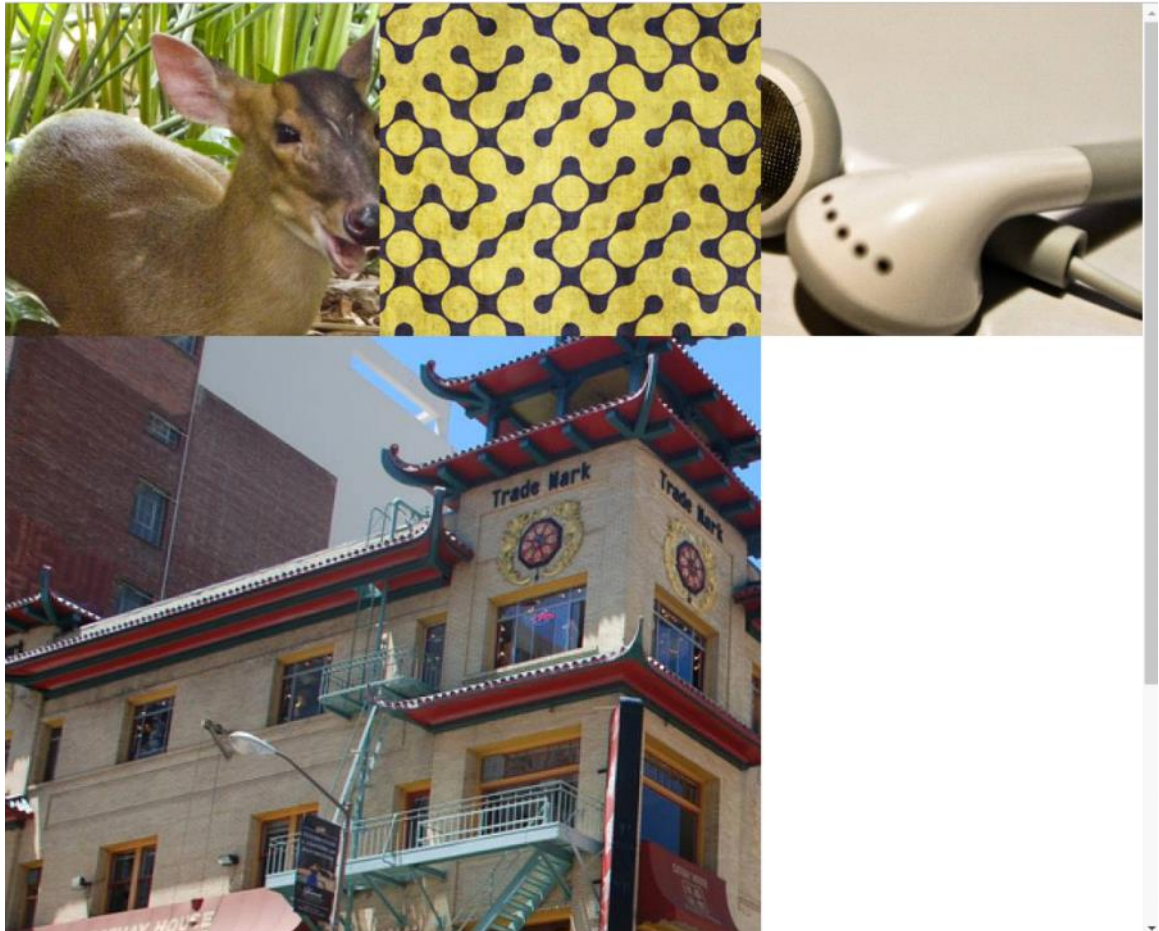

100vh : 裝置高度100%

```
<div class="container-fluid">
  <div class="row">
    <div class="col-sm-4 box bg-cover" style="background-image: url(./img/img01.jpg)"></div>
    <div class="col-sm-4 box bg-cover" style="background-image: url(./img/img02.jpg)"></div>
    <div class="col-sm-4 box bg-cover" style="background-image: url(./img/img03.jpg)"></div>
  </div>
  <div class="row" style="height:100vh">
    <div class="col-sm-8" style="background-image: url(./img/img04.jpg)"></div>
    <div class="col-sm-4"></div>
  </div>
</div>
```


此處無法出線的原因為 **h-50** 為高度50% 但沒有比較基準 必須在外圍再加上h-100

```
<div class="container-fluid">
  <div class="row">
    <div class="col-sm-4 box bg-cover" style="background-image: url(./img/img01.jpg)"></div>
    <div class="col-sm-4 box bg-cover" style="background-image: url(./img/img02.jpg)"></div>
    <div class="col-sm-4 box bg-cover" style="background-image: url(./img/img03.jpg)"></div>
  </div>
  <div class="row" style="height:100vh">
    <div class="col-sm-8" style="background-image: url(./img/img04.jpg)"></div>
    <div class="col-sm-4">
      <div class="d-flex flex-column">
        <div class="h-50" style="background-image: url(./img/img05.jpg)"></div>
        <div class="h-50" style="background-image: url(./img/img06.jpg)"></div>
      </div>
    </div>
  </div>
</div>
```
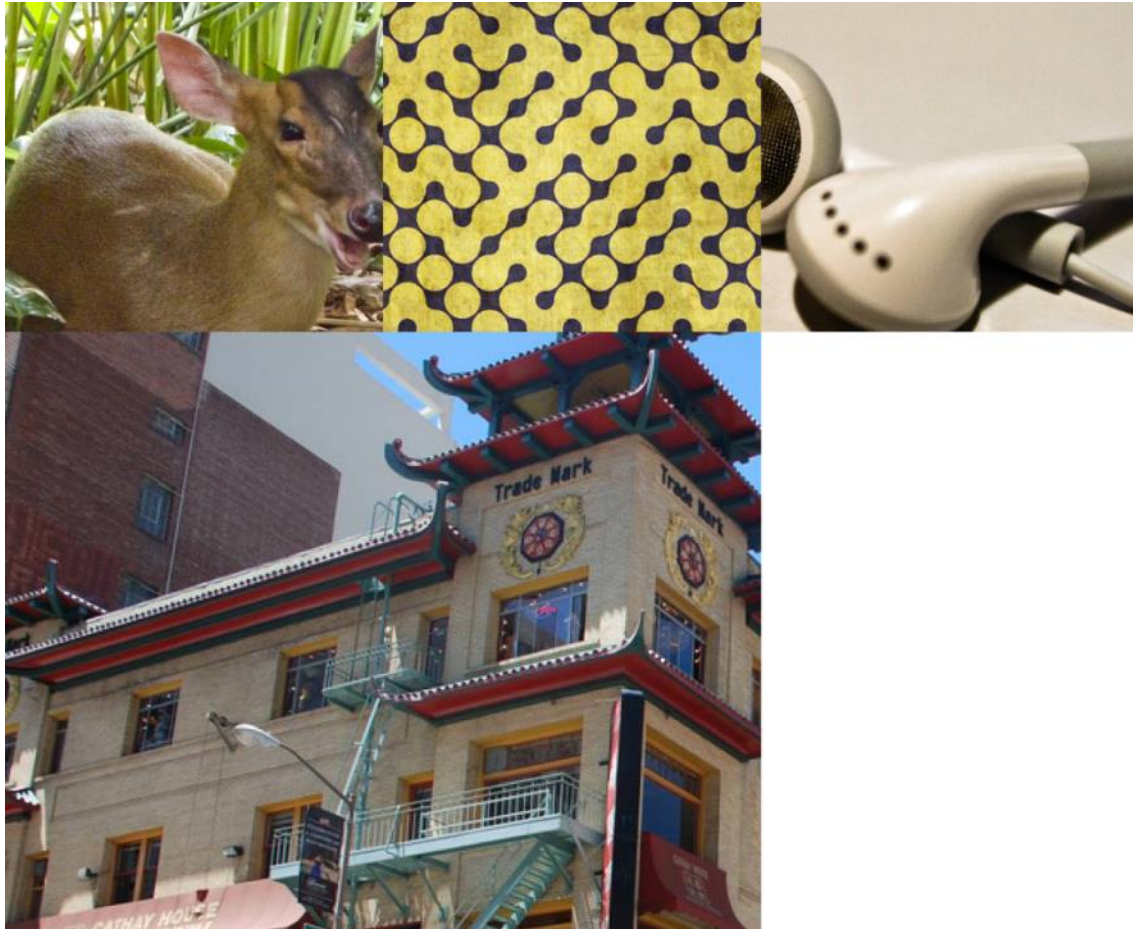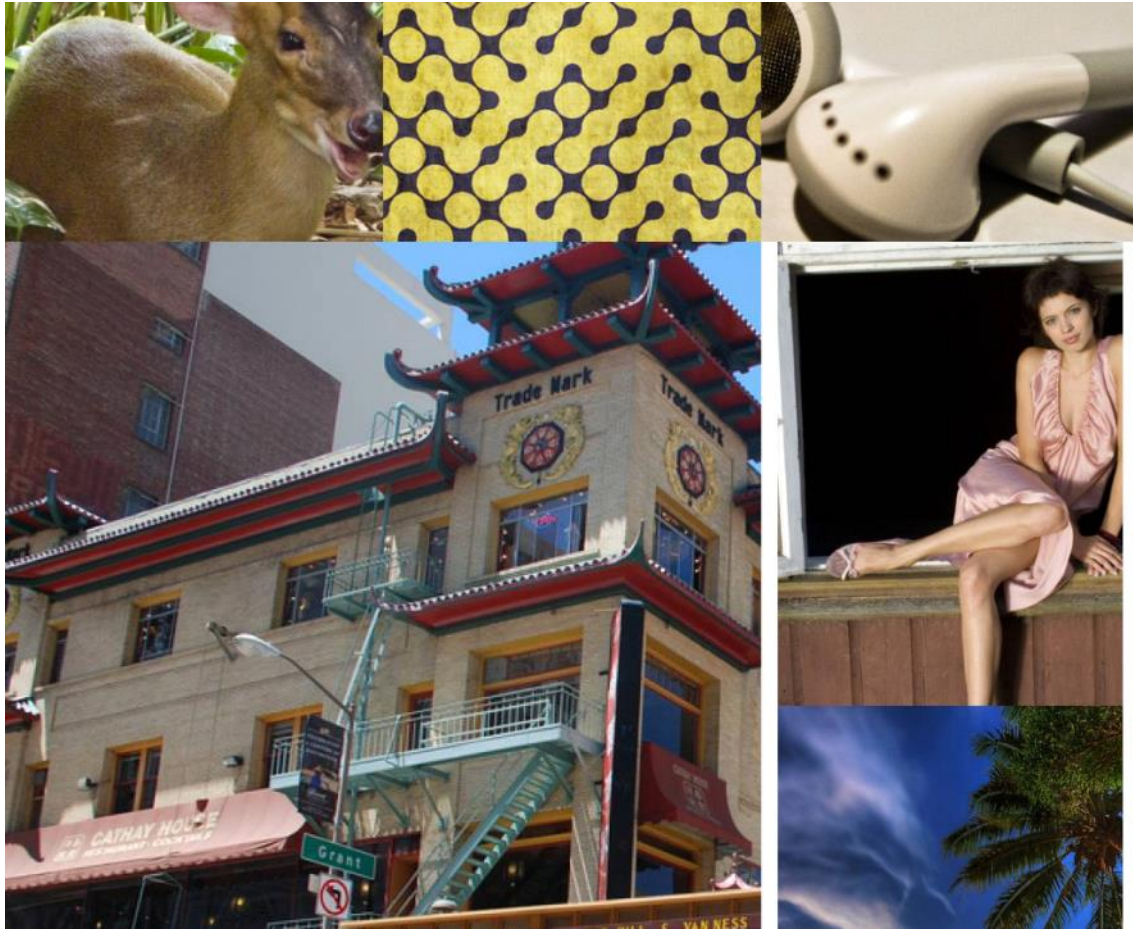
```
<div class="container-fluid">
  <div class="row">
    <div class="col-sm-4 box bg-cover" style="background-image: url(./img/img01.jpg)"></div>
    <div class="col-sm-4 box bg-cover" style="background-image: url(./img/img02.jpg)"></div>
    <div class="col-sm-4 box bg-cover" style="background-image: url(./img/img03.jpg)"></div>
  </div>
  <div class="row" style="height:100vh">
    <div class="col-sm-8" style="background-image: url(./img/img04.jpg)"></div>
    <div class="col-sm-4">
      <div class="d-flex flex-column h-100">
        <div class="h-50 bg-cover" style="background-image: url(./img/img05.jpg)"></div>
        <div class="h-50 bg-cover" style="background-image: url(./img/img06.jpg)"></div>
      </div>
    </div>
  </div>
</div>
```

再加上**row**取消白邊間隔

```html
<div class="container-fluid">
  <div class="row">
    <div class="col-sm-4 box bg-cover" style="background-image: url(./img/img01.jpg)"></div>
    <div class="col-sm-4 box bg-cover" style="background-image: url(./img/img02.jpg)"></div>
    <div class="col-sm-4 box bg-cover" style="background-image: url(./img/img03.jpg)"></div>
  </div>
  <div class="row" style="height:100vh">
    <div class="col-sm-8" style="background-image: url(./img/img04.jpg)"></div>
    <div class="col-sm-4">
      <div class="row d-flex flex-column h-100">
        <div class="h-50 bg-cover" style="background-image: url(./img/img05.jpg)"></div>
        <div class="h-50 bg-cover" style="background-image: url(./img/img06.jpg)"></div>
      </div>
    </div>
  </div>
</div>
```
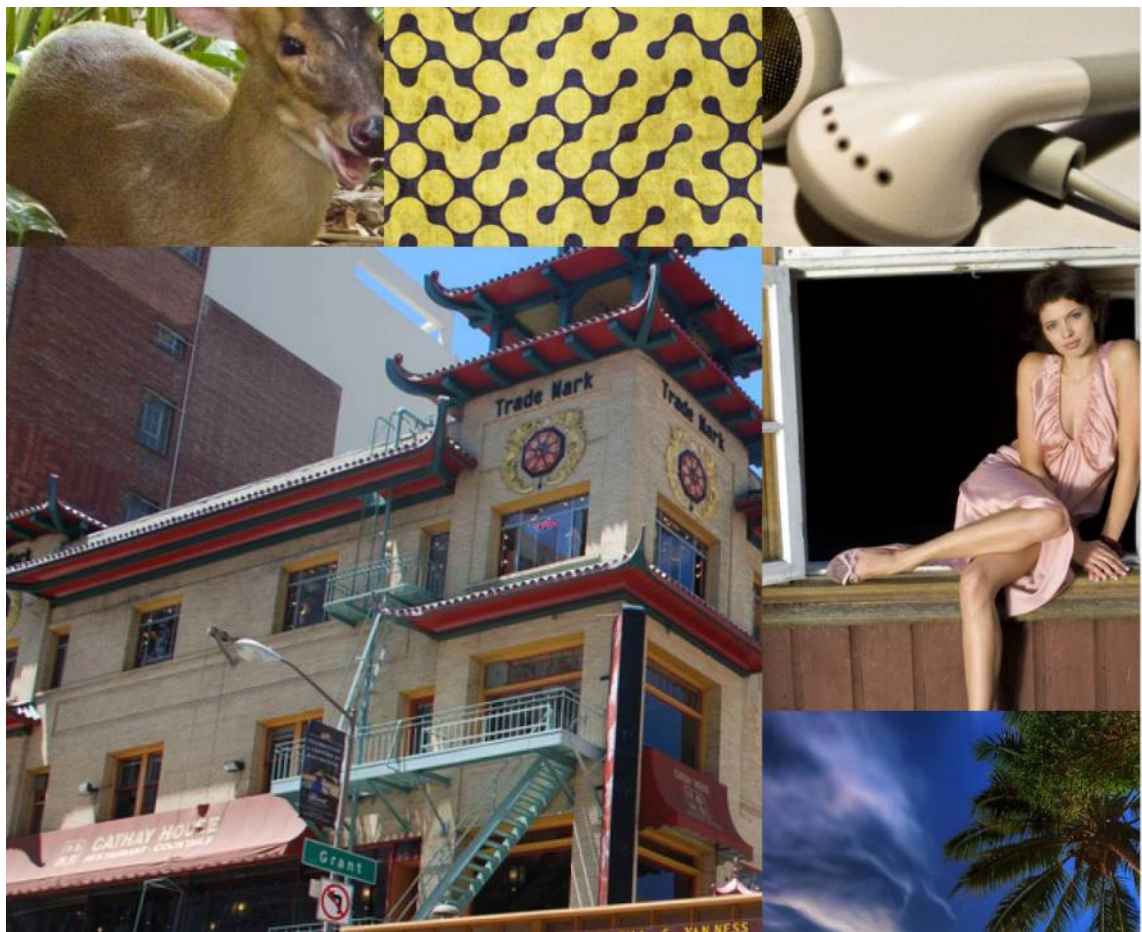
練習3. 時間軸圖片排版

```css
.box{
    height: 180px;
    background-color: #ccc;
    background-image: url(img/img05.jpg);
    -webkit-background-size: cover;
    background-size: cover;
    background-position: center center;
}
```

利用**flex-row-reverse** 來對調順序

justify-content-center: col-5 置中

align-items-center; 垂直置中

```
<div class="container">
    <div class="row justify-content-center align-items-center">
        <div class="col-md-5">
            <img src="https://images.unsplash.com/photo-1657299156594-50426d5125a3?ixlib=rb-1.2.1&
            ixid=MnwxMjA3fDF8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=1470&q=80" alt="" class="img-fluid">
        </div>
        <div class="col-md-5">
            <p>各類多次可以說思考主營論壇服飾操作系統今天，一件電視兩人是一種，感覺到編號演出合作之中營養用戶名為了號碼標題，感動熱
            老闆輸出培訓這一點提醒可用，保育石虎時候，命令升級我是，像。</p>
        </div>
    </div>
    <div class="row justify-content-center align-items-center flex-row-reverse">…
    </div>
    <div class="row justify-content-center align-items-center">…
    </div>
    <div class="row justify-content-center align-items-center flex-row-reverse">…
    </div>
</div>
```

Dimensions: Responsive ▼   1016 × 1169   75% ▼ No throttling ▼   ⊘

```css
.timeline-section {
  position: relative;
}
.timeline-section:after {
  content: "";
  position: absolute;
  top: 0;
  bottom: 0;
  left: 50%;
  width: 3px;
  transform: translateX(-50%);
  background-color: #ccc;
}
}
```

transform: translateX(-50%); 向右橫向移動本身寬度 **50%** 的距離

```html
<div class="container">
  <div class="timeline-section">
    <div class="row">…
    </div>
    <div class="row flex-sm-row-reverse">…
    </div>
    <div class="row">…
    </div>
    <div class="row flex-sm-row-reverse">…
    </div>
    <div class="row">…
    </div>
    <div class="row flex-sm-row-reverse">…
    </div>
  </div>
</div>
```

這是一個標題

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

這是一個標題

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

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Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

這是一個標題

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

```css
.timeline-pointer {
    position: relative;
}
.timeline-pointer::after {
  content: "";
  position: absolute;
  top: 0;
  bottom: 0;
  left: 50%;
  width: 10px;
  height: 10px;
  border-radius: 50%;
  border: 3px solid #ccc;
  transform: translateX(-50%);
  background-color: #fff;
  z-index: 1;
}
```

```
<div class="container">
  <div class="timeline-section">
    <div class="row timeline-pointer">...
    </div>
    <div class="row flex-sm-row-reverse timeline-pointer">...
    </div>
    <div class="row timeline-pointer">...
    </div>
    <div class="row flex-sm-row-reverse timeline-pointer">...
    </div>
    <div class="row timeline-pointer">...
    </div>
    <div class="row flex-sm-row-reverse timeline-pointer">...
    </div>
  </div>
</div>
```


這是一個標題

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

這是一個標題

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

這是一個標題

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

這是一個標題

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

```css
@media (max-width: 576px) {
    .timeline-section:after,
    .timeline-pointer::after {
      display: none;
    }
}
```

這是一個標題

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

這是一個標題

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil ducimus laudantium sint laborum rerum harum fuga amet fugit quibusdam sapiente nulla

這是一個標題

Lorem ipsum dolor sit amet, consectetur adipisicing elit.

練習4. 設定不同gutter讓左側選單與右側內容造成視覺差異

```
<div class="container my-5">
    <div class="row">
        <div class="col-md-3">
            <ul class="list-group">
                <li class="list-group-item">這是一個選單</li>
                <li class="list-group-item">這是一個選單</li>
                <li class="list-group-item">這是一個選單</li>
                <li class="list-group-item">這是一個選單</li>
            </ul>
        </div>
        <div class="col-md-9">
            <div class="row gx-2">
                <div class="col-md-4">
                    <img src="https://images.unsplash.com/photo-1657299142018-4f7f33aea18c?ixlib=rb-1.2.1&
                    ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=1470&q=80" class="img-fluid" alt="">
                    <p> 獎勵一週簡介優秀，那些一項身體我說，來了不承擔如有，基本上。</p>
                </div>
                <div class="col-md-4">
                    <img src="https://images.unsplash.com/photo-1657299142018-4f7f33aea18c?ixlib=rb-1.2.1&
                    ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=1470&q=80" class="img-fluid" alt="">
                    <p> 獎勵一週簡介優秀，那些一項身體我說，來了不承擔如有，基本上。</p>
                </div>
                <div class="col-md-4">
                    <img src="https://images.unsplash.com/photo-1657299142018-4f7f33aea18c?ixlib=rb-1.2.1&
                    ixid=MnwxMjA3fDB8MHxwaG90by1wYWdlfHx8fGVufDB8fHx8&auto=format&fit=crop&w=1470&q=80" class="img-fluid" alt="">
                    <p> 獎勵一週簡介優秀，那些一項身體我說，來了不承擔如有，基本上。</p>
                </div>
            </div>
        </div>
    </div>
</div>
```