

VIA University College



Web Development 1

Bootstrap

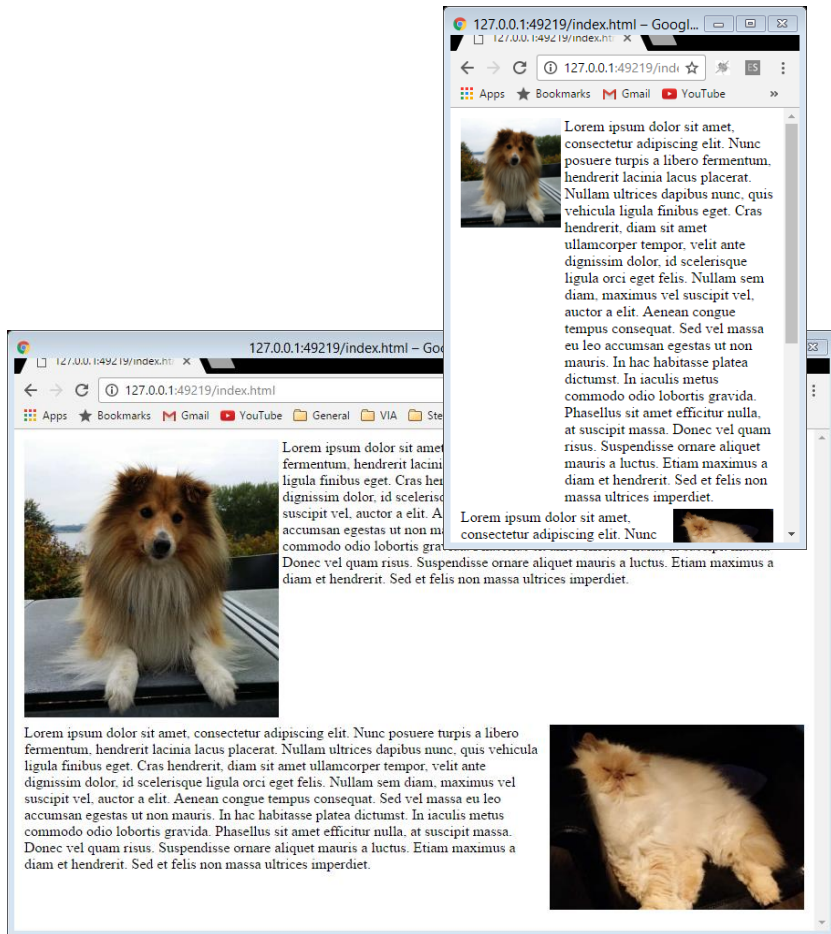
Agenda

- Recap
- The Bootstrap Framework
- Bootstrap: Grid Layout

The (Not So) Responsive Table

```
<table>
  <tr>
    <td>...</td>
    <td colspan="2">...</td>
  </tr>...
</table>
```

```
td {
  width: 33%;
}
```



The Responsive Float

```
<div>
  <img ...>
  <p>...</p>
</div>
```

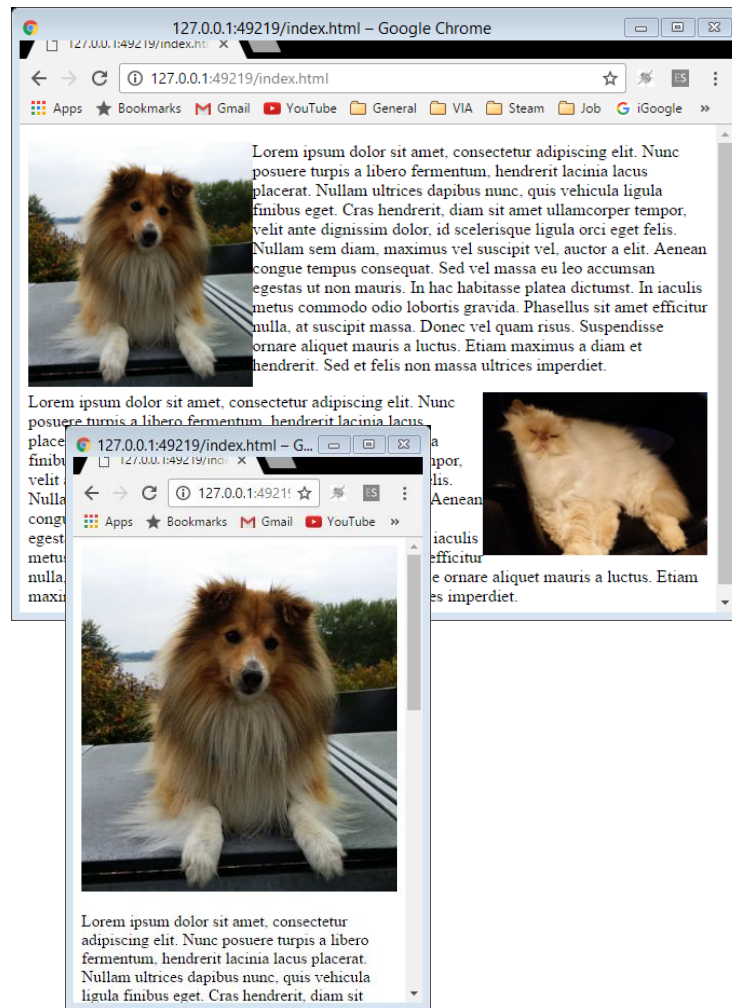
...

```
@media screen and (min-width:
650px) {
```

```
  #nickiImg {
    width: 33%;
    float: left;
  }
```

```
  #simbaImg {
    width: 33%;
    float: right;
  }
```

```
}
```



The Bootstrap Framework

- Responsive Web Design is not new
- Framework (files that somebody else has created for us, how nice!)
 - CSS styling
 - JavaScript files
- Customizable
- How to use = Assign predefined keywords in your HTML tags
- Reduces amount of CSS (and manual mediaqueries) we have to write
- Sort of forces us to commit to doing things the Bootstrap way
 - If we try to apply our own styling, might clash with the styling being applied by Bootstrap

The Bootstrap Framework: Getting Started

- Go here: <https://getbootstrap.com/docs/5.3/getting-started/introduction/>
- Download the Bootstrap file bundle
- Unzip and add the Bootstrap related CSS, font and JavaScript files to your webpage root folder



The Bootstrap Framework: Adding to our HTML files

- To be able to utilize Bootstrap features in a single HTML document, you need to add Bootstrap to your HTML file
- Link to the files we just downloaded
- Same as linking to an external style sheet

The Bootstrap Framework: Adding to our HTML files

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <title>Bootstrap Example</title>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">

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

    <script src="js/bootstrap.bundle.min.js"></script>
  </head>
  <body>
    ...
  </body>
</html>
```

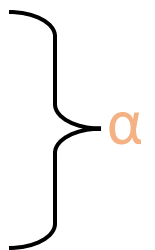

Bootstrap: Grid Layout

- One of the many features of Bootstrap
- Controls layout of elements based on screen size
 - Uses media queries, but we don't have to worry about that anymore 😊
- Divides the page (or element) into 12 columns
- Is responsive, and columns will re-arrange automatically

Bootstrap: Grid Layout

span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1
span 4				span 4				span 4			
span 4				span 8							
span 6						span 6					
span 12											

Bootstrap: Grid Layout

- Predefined `class`
 - `container`
 - `row`
 - Etc.
- Breakpoints (instead of manually setting width/height with media query)
 - Small (`sm`)
 - Medium (`md`)
 - Large (`lg`)
 - Extra Large (`xl`)
 - Extra Extra Large (`xxl`)

α
- `<div class="col-α-β">`

Bootstrap: Grid Layout

```
<div class="container">  
  <div class="row">  
    <div class="col- $\alpha$ - $\beta$ ">...</div>  
  </div>  
</div>
```

```
<div class="container">  
  <div class="row">  
    <div class="col-md-2">...</div>  
    <div class="col-md-4">...</div>  
    <div class="col-md-6">...</div>  
  </div>  
</div>
```

Breakpoints!

α { **sm** (small)
md (medium)
lg (large)
xl (extra large)
xxl (extra extra large)

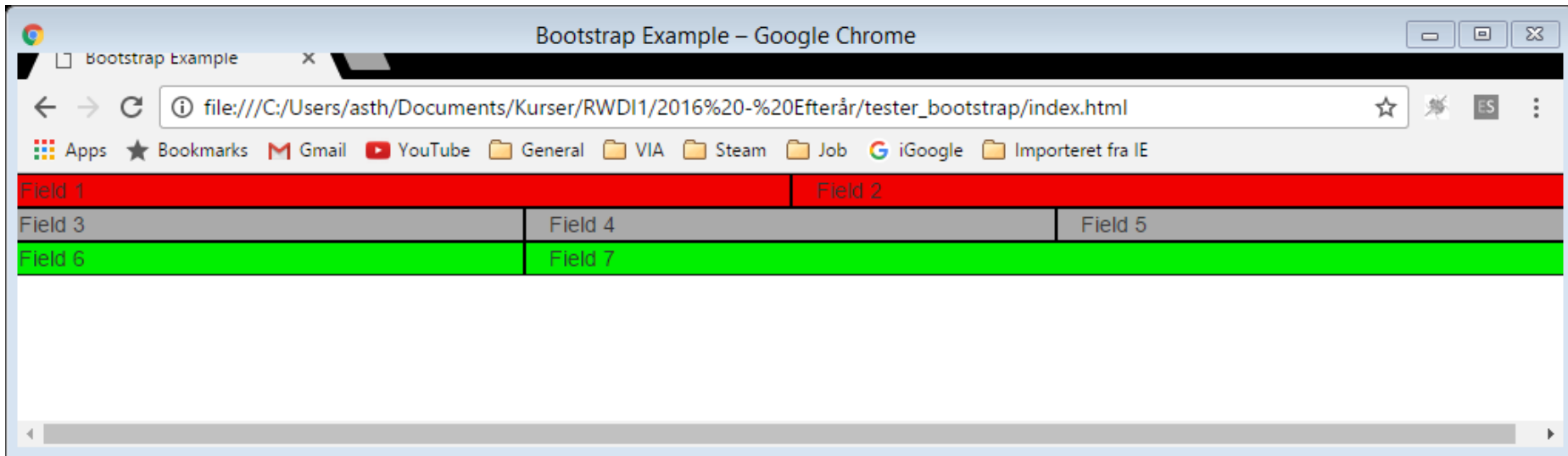
β { **1**
2
3
...
12 Number of
 columns this
 element should
 cover
 (must sum to 12)

Bootstrap: Grid Layout

```
<div class="container">
  <div class="row">
    <div class="col-md-6">Field 1</div>
    <div class="col-md-6">Field 2</div>
  </div>
  <div class="row">
    <div class="col-md-4">Field 3</div>
    <div class="col-md-4">Field 4</div>
    <div class="col-md-4">Field 5</div>
  </div>
  <div class="row">
    <div class="col-md-4">Field 6</div>
    <div class="col-md-8">Field 7</div>
  </div>
</div>
```

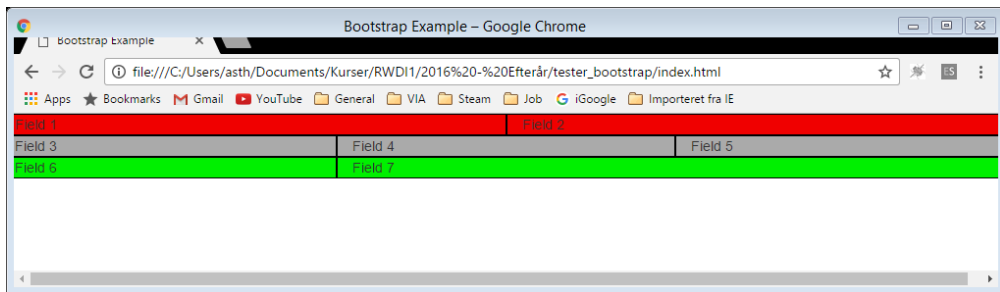
Bootstrap: Grid Layout

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



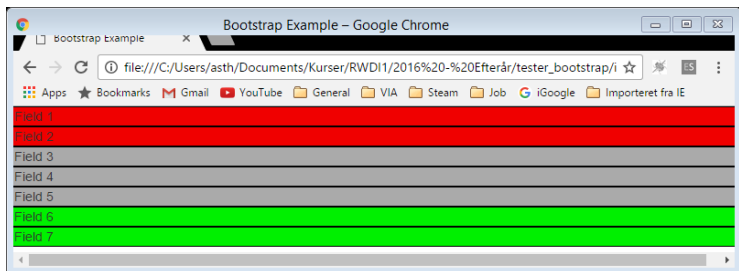
```
<div class="row">  
  <div class="col-md-4">Field 6</div>  
  <div class="col-md-8">Field 7</div>  
</div>  
</div>
```

Bootstrap: Grid Layout



```
<div class="container">
  <div class="row">
    <div class="col-md-6">Field 1</div>
    <div class="col-md-6">Field 2</div>
  </div>
  <div class="row">
    <div class="col-md-4">Field 3</div>
    <div class="col-md-8">Field 4</div>
  </div>
  <div class="row">
    <div class="col-md-4">Field 6</div>
    <div class="col-md-8">Field 7</div>
  </div>
</div>
```

Browser window size greater than the **md** breakpoint.



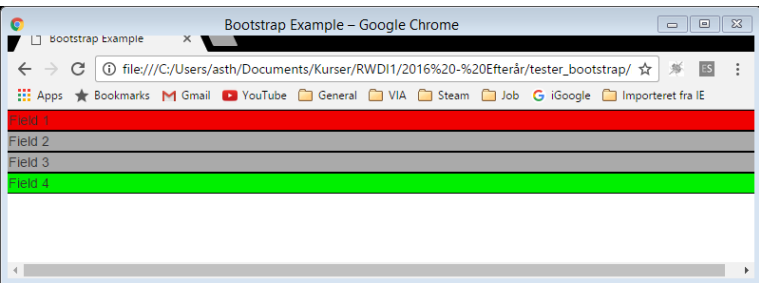
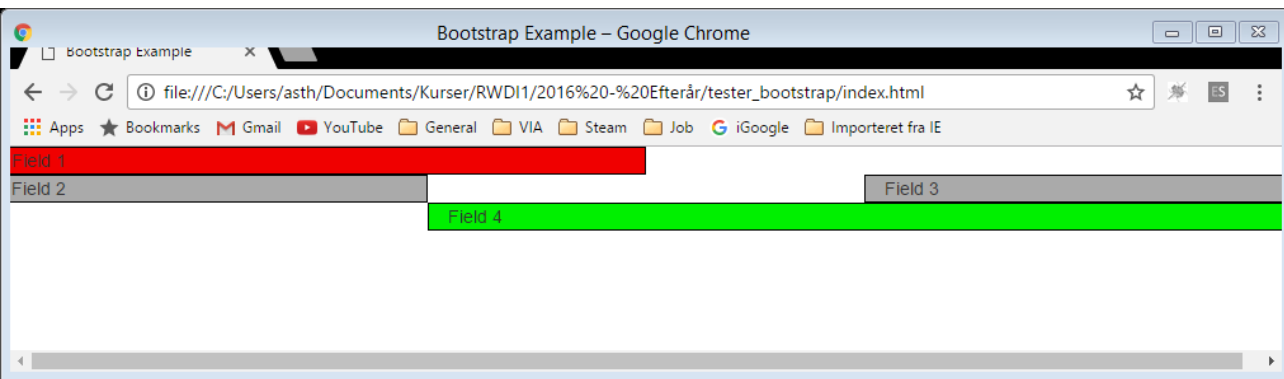
Browser window size smaller than the **md** breakpoint.

Bootstrap: Grid Layout

	Extra small <576px	Small ≥576px	Medium ≥768px	Large ≥992px	Extra large ≥1200px	Extra extra large ≥1400px
Class prefix	<code>.col-</code>	<code>.col-sm-</code>	<code>.col-md-</code>	<code>.col-lg-</code>	<code>.col-xl-</code>	<code>.col-xxl-</code>

Bootstrap: Grid Layout

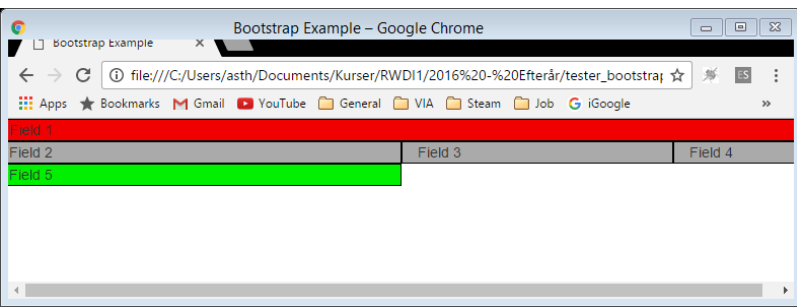
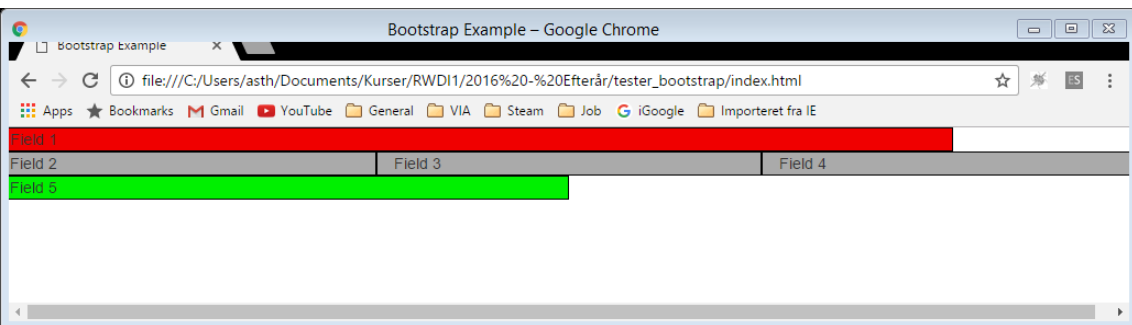
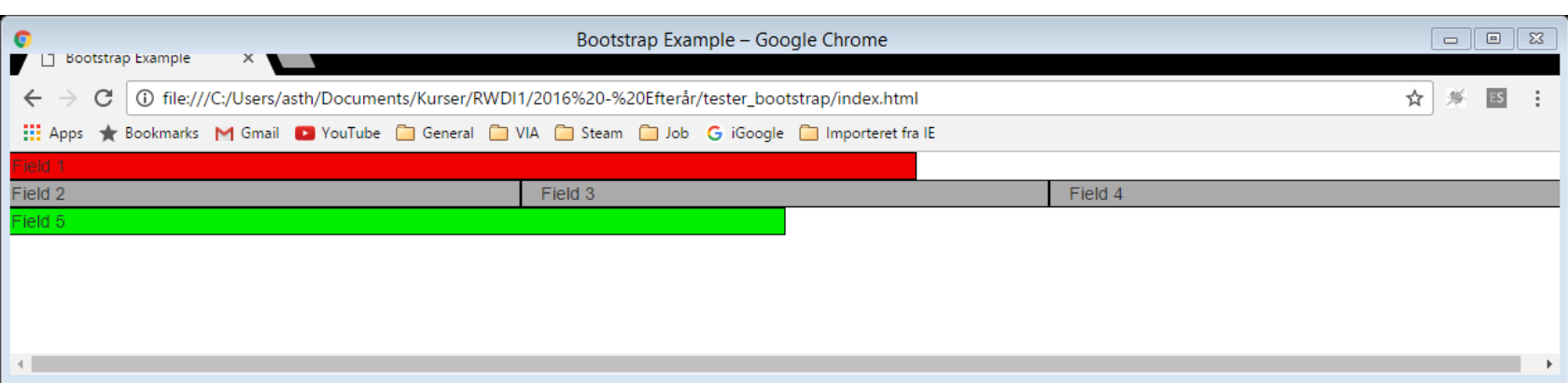
```
<div class="container">  
  <div class="row">  
    <div class="col-md-6">Field 1</div>  
  </div>  
  <div class="row">  
    <div class="col-md-4">Field 2</div>  
    <div class="col-md-4 offset-md-4">Field 3</div>  
  </div>  
  <div class="row">  
    <div class="col-md-8 offset-md-4">Field 4</div>  
  </div>  
</div>
```



```
<div class="container">
  <div class="row">
    <div class="col-md-6">Field 1</div>
  </div>
  <div class="row">
    <div class="col-md-4">Field 2</div>
    <div class="col-md-4 offset-md-4">Field 3</div>
  </div>
  <div class="row">
    <div class="col-md-8 offset-md-4">Field 4</div>
  </div>
</div>
```

Bootstrap: Grid Layout

```
<div class="container">
  <div class="row">
    <div class="col-md-10 col-lg-7">Field 1</div>
  </div>
  <div class="row">
    <div class="col-sm-6 col-md-4">Field 2</div>
    <div class="col-sm-4">Field 3</div>
    <div class="col-sm-2 col-md-4">Field 4</div>
  </div>
  <div class="row">
    <div class="col-sm-6 col-md-6 col-lg-6">Field 5</div>
  </div>
</div>
```



```
ontainer">  
"row">  
s="col-md-10 col-lg-7">Field 1</div>
```

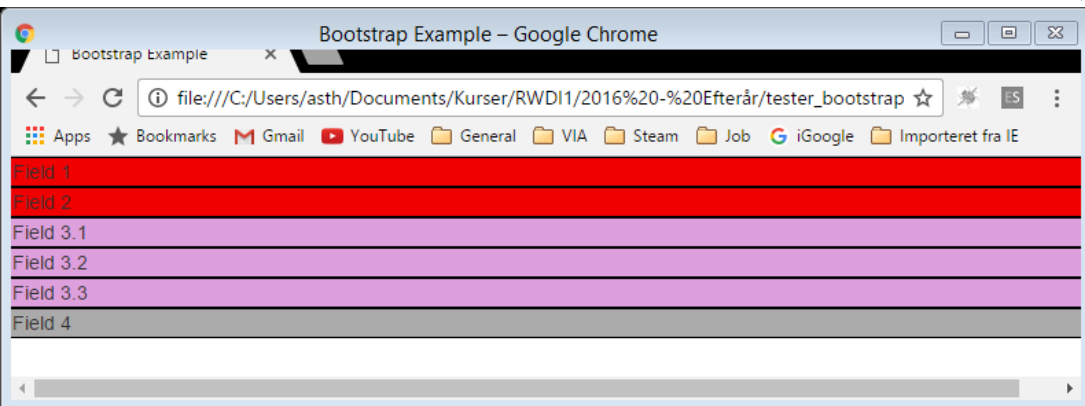
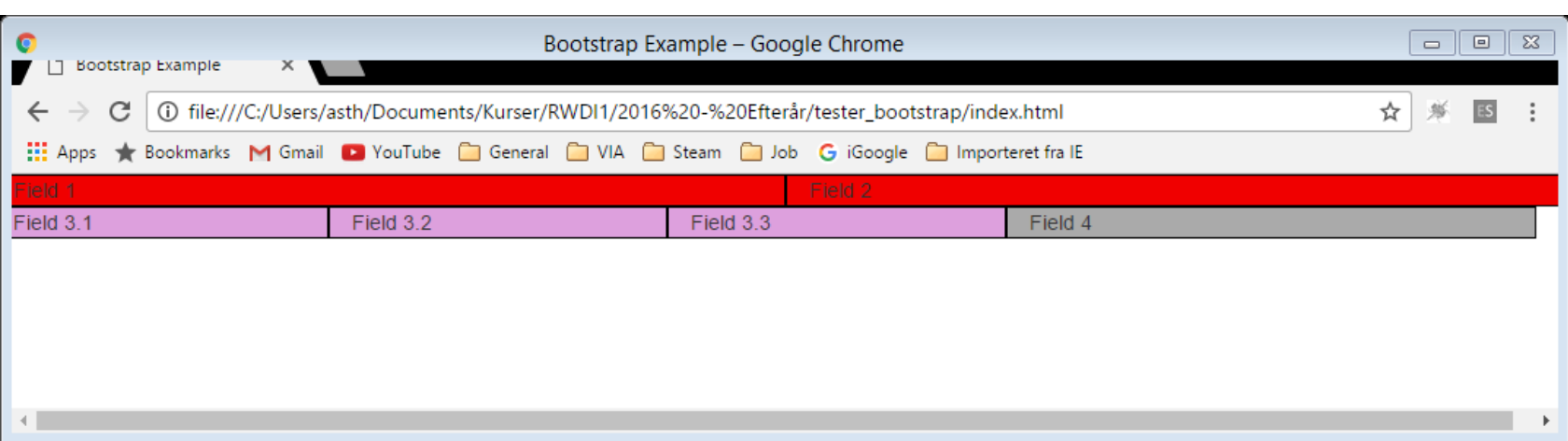
```
"row">  
<div class="col-sm-6 col-md-4">Field 2</div>  
<div class="col-sm-4">Field 3</div>  
<div class="col-sm-2 col-md-4">Field 4 </div>  
</div>  
<div class="row">  
  <div class="col-sm-6 col-md-4">Field 5</div>  
</div>  
</div>
```



Unnecessary
(redundant)

Bootstrap: Grid Layout

```
<div class="container">  
  <div class="row">  
    <div class="col-md-6">Field 1</div>  
    <div class="col-md-6">Field 2</div>  
  </div>  
  <div class="row">  
    <div class="col-md-8 row">  
      <div class="col-md-4">Field 3.1</div>  
      <div class="col-md-4">Field 3.2</div>  
      <div class="col-md-4">Field 3.3</div>  
    </div>  
    <div class="col-md-4">Field 4</div>  
  </div>  
</div>
```



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

```
<div class="row">
```

```
<div class="col-md-6">Field 1</div>
```

```
<div class="col-md-6">Field 2</div>
```

```
</div>
```

```
<div class="row">
```

```
<div class="col-md-8 row">
```

```
<div class="col-md-4">Field 3.1</div>
```

```
<div class="col-md-4">Field 3.2</div>
```

```
<div class="col-md-4">Field 3.3</div>
```

```
</div>
```

```
<div class="col-md-4">Field 4</div>
```

```
</div>
```

```
</div>
```

Bootstrap: Grid Layout

```
<div class="row">  
  <div class="col-md-4">Field 1</div>  
  <div class="col-md-4">Field 2</div>  
  <div class="col-md-4">Field 3</div>  
</div>
```

Alternative and better:

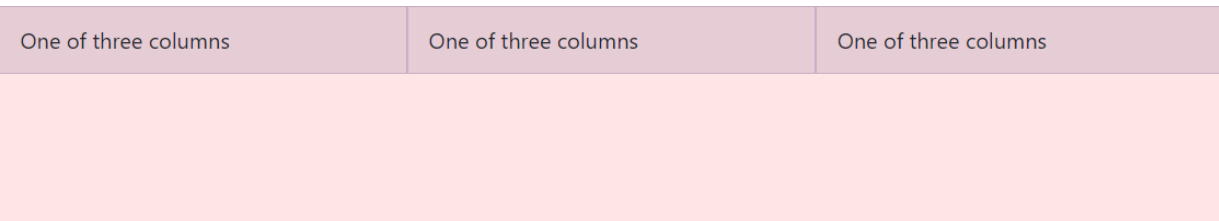
```
<div class="row">  
  <div class="col-md">Field 1</div>  
  <div class="col-md">Field 2</div>  
  <div class="col-md">Field 3</div>  
</div>
```

Automatically divides content evenly

Bootstrap: Grid Layout

```
<div class="container">  
  <div class="row align-items-start|align-items-center|align-items-end">  
    <div class="col">  
      One of three columns  
    </div>  
    <div class="col">  
      One of three columns  
    </div>  
    <div class="col">  
      One of three columns  
    </div>  
  </div>  
</div>
```


Bootstrap: Grid Layout



```
<div class="container">  
  <div class="row align-items-start">  
    <div class="col">  
      One of three columns  
    </div>  
    <div class="col">  
      One of three columns  
    </div>  
    <div class="col">  
      One of three columns  
    </div>  
  </div>  
</div>
```

Bootstrap: Grid Layout

One of three columns	One of three columns	One of three columns
One of three columns	One of three columns	One of three columns

```
<div class="container">  
  <div class="row align-items-center">  
    <div class="col">  
      One of three columns  
    </div>  
    <div class="col">  
      One of three columns  
    </div>  
    <div class="col">  
      One of three columns  
    </div>  
  </div>  
</div>
```

Bootstrap: Grid Layout

One of three columns	One of three columns	One of three columns
One of three columns	One of three columns	One of three columns
One of three columns	One of three columns	One of three columns

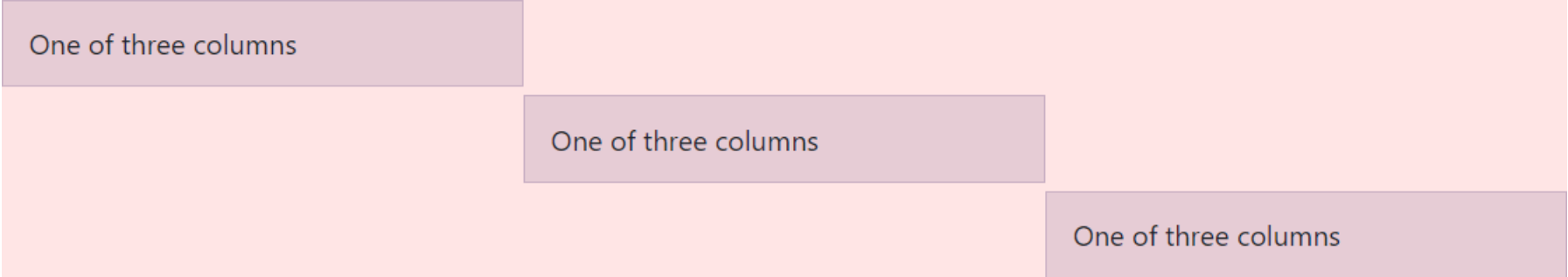
```
<div class="container">  
  <div class="row align-items-end">  
    <div class="col">  
      One of three columns  
    </div>  
    <div class="col">  
      One of three columns  
    </div>  
    <div class="col">  
      One of three columns  
    </div>  
  </div>  
</div>
```

Bootstrap: Grid Layout

```
<div class="container">  
  <div class="row">  
    <div class="col align-self-start">  
      One of three columns  
    </div>  
    <div class="col align-self-center">  
      One of three columns  
    </div>  
    <div class="col align-self-end">  
      One of three columns  
    </div>  
  </div>  
</div>
```

Bootstrap: Grid Layout

```
<div class="container">  
  <div class="row">  
    <div class="col align-self-start">  
      One of three columns  
    </div>  
    <div class="col align-self-center">  
      One of three columns  
    </div>  
    <div class="col align-self-end">  
      One of three columns  
    </div>  
  </div>  
</div>
```



One of three columns

The diagram illustrates a Bootstrap grid layout. It features a large light pink rectangular container. Inside this container, three smaller, darker pink rectangular blocks are arranged in a staggered, non-linear fashion. The first block is in the top-left corner. The second block is positioned below and to the right of the first. The third block is positioned below and to the right of the second. Each block contains the text 'One of three columns'.

One of three columns

One of three columns

Bootstrap: Grid Layout

```
<div class="container">  
  <div class="row justify-content-start|justify-content-  
center|justify-content-end|justify-content-around|justify-  
content-between">
```

...

```
<div class="container">  
  <div class="row">  
    <div class="col order-(first,last,1,2,...,12)">  
    Or  
    <div class="col order-(sm,md,lg,xl,xxl)-  
(first,last,1,2,...,12)">
```

...