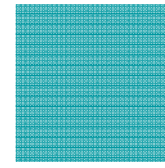
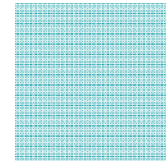
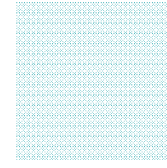




BEUTH HOCHSCHULE FÜR TECHNIK BERLIN  
University of Applied Sciences



# Responsive Web Design

## Multimedia Engineering II WS 13/14

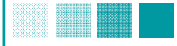
Sven Spielvogel



# Inhalt

- Was ist Responsive Web Design?
- Responsive Web Design in HTML5
- Testen
- Templates
- Wie können Frameworks uns helfen?
- Nützliche Links



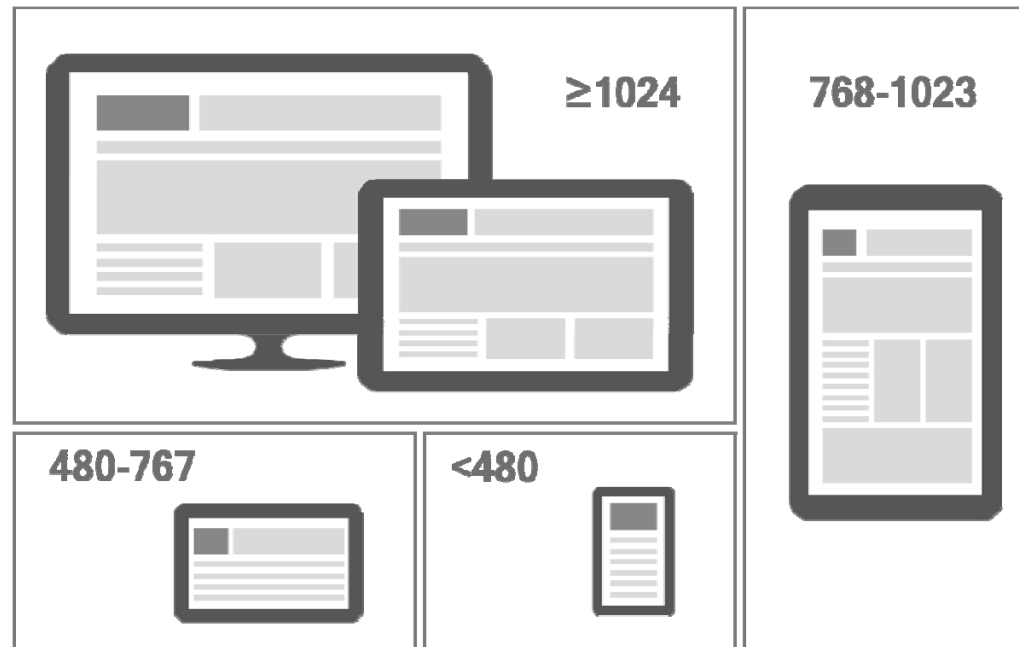


# Was ist Responsive Web Design



# Was ist Responsive Web Design?

- Problematik
  - Wachsende Vielfalt an Ausgabegeräten
  - Displays mit unterschiedlichsten Auflösungen
  - Lesbarkeit muss gewährleistet sein

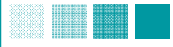


# Was ist Responsive Web Design?

- Anzeige von Inhalten in Abhängigkeit der Ausgabe
  - Breite des Bildschirmes
  - Browser
  - Betriebssystem



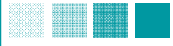
Quelle: <http://alistapart.com/article/responsive-web-design>



# Was ist Responsive Web Design?

- Tolle Beispiele
  - <https://www.awwwards.com/websites/responsive-design/>

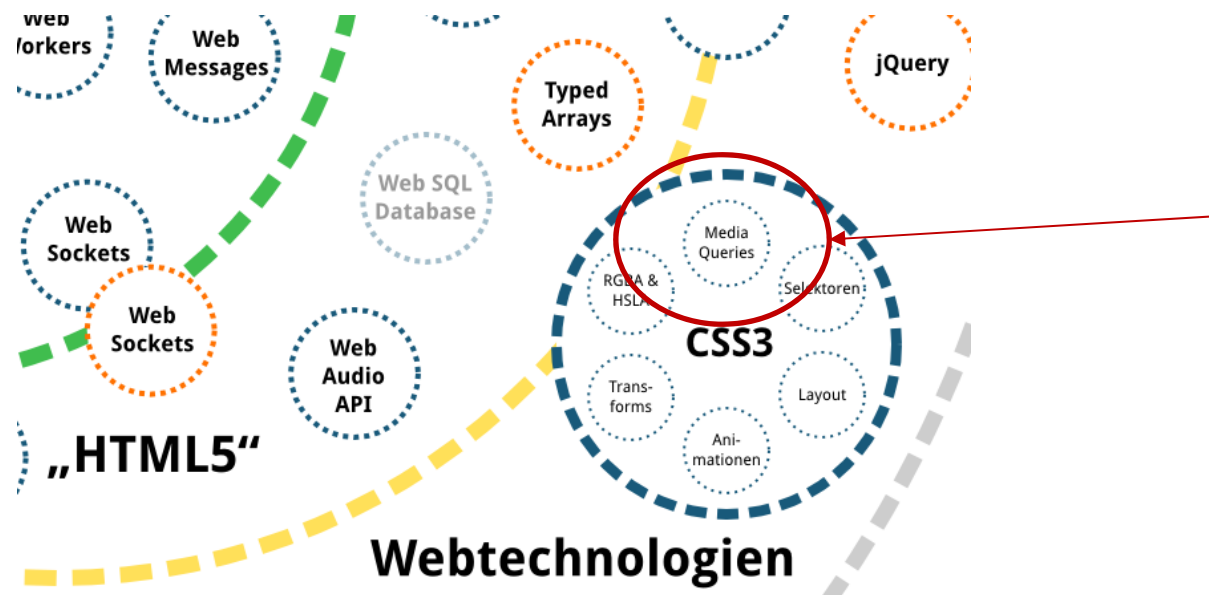




# Responsive Web Design in HTML5



# Responsive Web Design in HTML5





# Responsive Web Design in HTML5

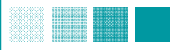


- HTML5, bzw. CSS3 bietet uns mit den Media Queries ein wichtiges Werkzeug für Responsive Web Design

```
@media expression { css-content }
```

```
@media (min-width: 700px) {  
    background-color: #222;  
}
```





# Responsive Web Design in HTML5

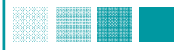
```
@media (min-width: 700px) { }
```

expression: ( <media\_feature> [: <value>]? )

- Mögliche <media\_feature>:

- width | min-width | max-width
- | height | min-height | max-height | device-width | min-device-width | max-device-width | device-height | min-device-height | max-device-height
- | aspect-ratio | min-aspect-ratio | max-aspect-ratio
- | device-aspect-ratio | min-device-aspect-ratio | max-device-aspect-ratio
- | color | min-color | max-color
- | color-index | min-color-index | max-color-index
- | monochrome | min-monochrome | max-monochrome
- | resolution | min-resolution | max-resolution
- | scan | grid





# Responsive Web Design in HTML5

- Media Queries können mit Operatoren verknüpft und erweitert werden
- Verknüpfung mehrerer Queries in eine sogenannte Liste durch ein Komma
  - `<media_query> [, <media_query> ]*`

```
@media (device-width: 700px), (device-width: 800px) {  
    background-color: #222;  
}
```

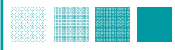


# Responsive Web Design in HTML5

- Ein Query besteht aus einem oder eine Vielzahl von Ausdrücken (Expressions) welche mit einem **and** verknüpft werden
  - `<expression> [ and <expression> ]*`
  - Nur wenn alle mit einem **and** verknüpfte Regeln true sind, gilt der Query

```
@media (min-width: 700px) and (max-width: 800px) {  
    background-color: #222;  
}
```





# Responsive Web Design in HTML5

- Ein Query kann aber auch mit einem media\_type Verknüpft werden
  - `[[only | not]? <media_type> [ and <expression> ]*]`
  - `only` ist im Normalfall implizit, verhindert aber, dass ältere Browser die Regel ignorieren
  - `all | aural | braille | handheld | print | projection | screen | tty | tv | embossed`

```
@media only tv and (min-width: 700px) and  
(orientation: landscape) {  
    background-color: #222;  
}  
  
@media only tv {...}
```

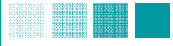




# Responsive Web Design in HTML5

```
media_query_list: <media_query> [, <media_query> ]*
media_query: [[only | not]? <media_type> [ and <expression> ]*]
| <expression> [ and <expression> ]*
expression: ( <media_feature> [: <value>]? )
media_type: all | aural | braille | handheld | print |
projection | screen | tty | tv | embossed
media_feature: width | min-width | max-width
| height | min-height | max-height
| device-width | min-device-width | max-device-width
| device-height | min-device-height | max-device-height
| aspect-ratio | min-aspect-ratio | max-aspect-ratio
| device-aspect-ratio | min-device-aspect-ratio | max-device-aspect-ratio
| color | min-color | max-color
| color-index | min-color-index | max-color-index
| monochrome | min-monochrome | max-monochrome
| resolution | min-resolution | max-resolution
| scan | grid
```





# Testen



# Testen

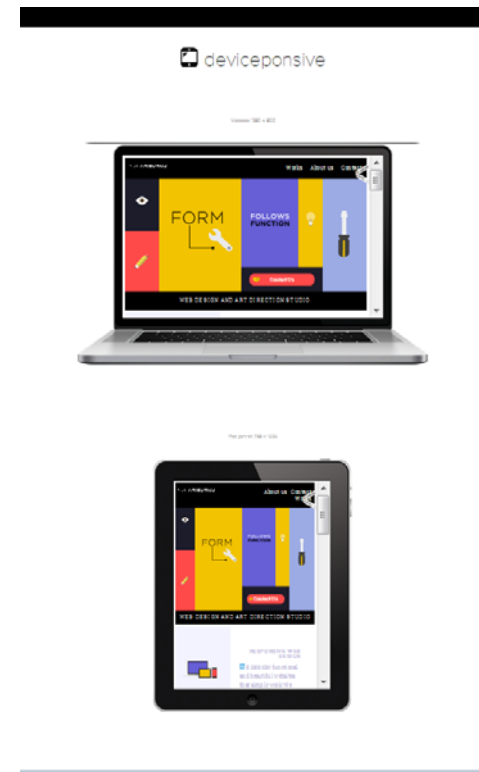






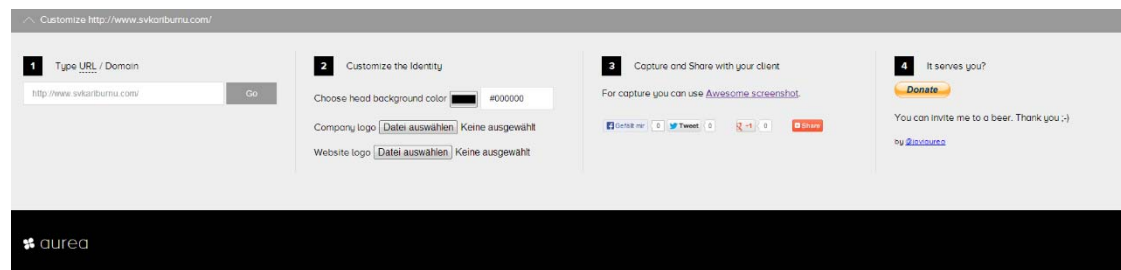
# Testen

- Zum Testen sind nicht immer alle Geräte Verfügbar
- Mehrere Auflösungen auf einem Blick
- Möglichkeit zur Präsentation beim Kunden



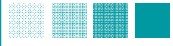
# Testen

- Testing Tools:
  - <http://deviceponsive.com/>
  - <http://t3n.de/news/responsive-web-design-komfortabel-380139/>



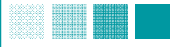
Mockup 1280 x 800





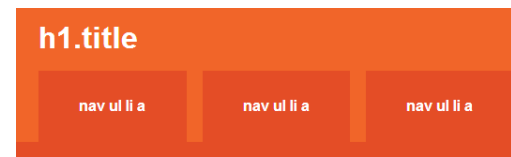
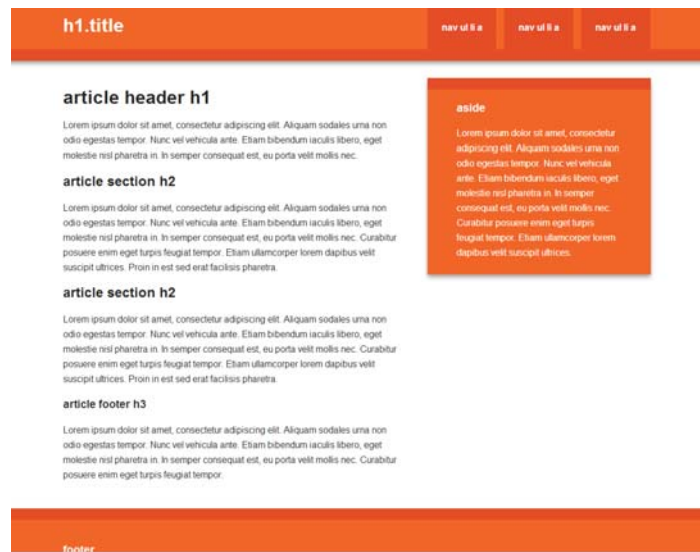
# Templates

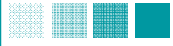




# Templates

- Boilerplate: <http://www.initializr.com/>
- Templates: <http://html5up.net/>
- Wordpress: <http://www.hongkiat.com/blog/free-responsive-wordpress-themes/>





# Wie können Frameworks uns helfen?





# Frameworks für Responsive Web Design

- Werkzeuge für das Erstellen von flexiblen Webseiten
  - Vorgefertigte Steuerelemente passend für alle Auflösungen (Menüs, Buttons,...)
  - Patterns für die Platzierung von Elementen auf der Webseite (Grid-System)
  - Vordefinierte Stylesheets
  - Auflösungsabhängige Icons
  - uvm.



# Frameworks für Responsive Web Design

- Bekanntestes Framework
  - Twitter Bootstrap
  - seit 2011 Open-Source
  - <https://github.com/twbs/bootstrap/>



UBLIC twbs / bootstrap

★ Star 60,357    🍴 Fork 21,203

Sleek, intuitive, and powerful front-end framework for faster and easier web development. <http://getbootstrap.com>

7,127 commits    4 branches    23 releases    436 contributors

branch: master    bootstrap / +

Merge pull request #11345 from pborreli/patch-3

cvrebert authored 9 hours ago    latest commit df3b44f27a

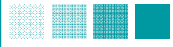
<> Code

Issues 244

Pull Requests 80

Pulse

Graphs



# Frameworks für Responsive Web Design

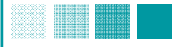
- Seit Version 2 durch Grid-Layout für Responsive Web Design
  - Aufteilung des Containers in 12 Teile



<http://getbootstrap.com/css/#grid>

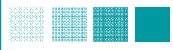






# Frameworks für Responsive Web Design

|                     | Extra small devicesPhones (<768px)   | Small devices Tablets (≥768px)                   | Medium devicesDesktops (≥992px) | Large devices Desktops (≥1200px) |
|---------------------|--------------------------------------|--|---------------------------------|----------------------------------|
| Grid behavior       | Horizontal at all times              | Collapsed to start, horizontal above breakpoints |                                 |                                  |
| Max container width | None (auto)                          | 750px  | 970px                           | 1170px                           |
| Class prefix        | .col-xs-                             | .col-sm-   | .col-md-                        | .col-lg-                         |
| # of columns        | 12                                   |  |                                 |                                  |
| Max column width    | Auto                                 | 60px   | 78px                            | 95px                             |
| Gutter width        | 30px (15px on each side of a column) |  |                                 |                                  |
| Nestable            | Yes                                  |  |                                 |                                  |
| Offsets             | N/A                                  | Yes  |                                 |                                  |
| Column ordering     | N/A                                  | Yes  |                                 |                                  |

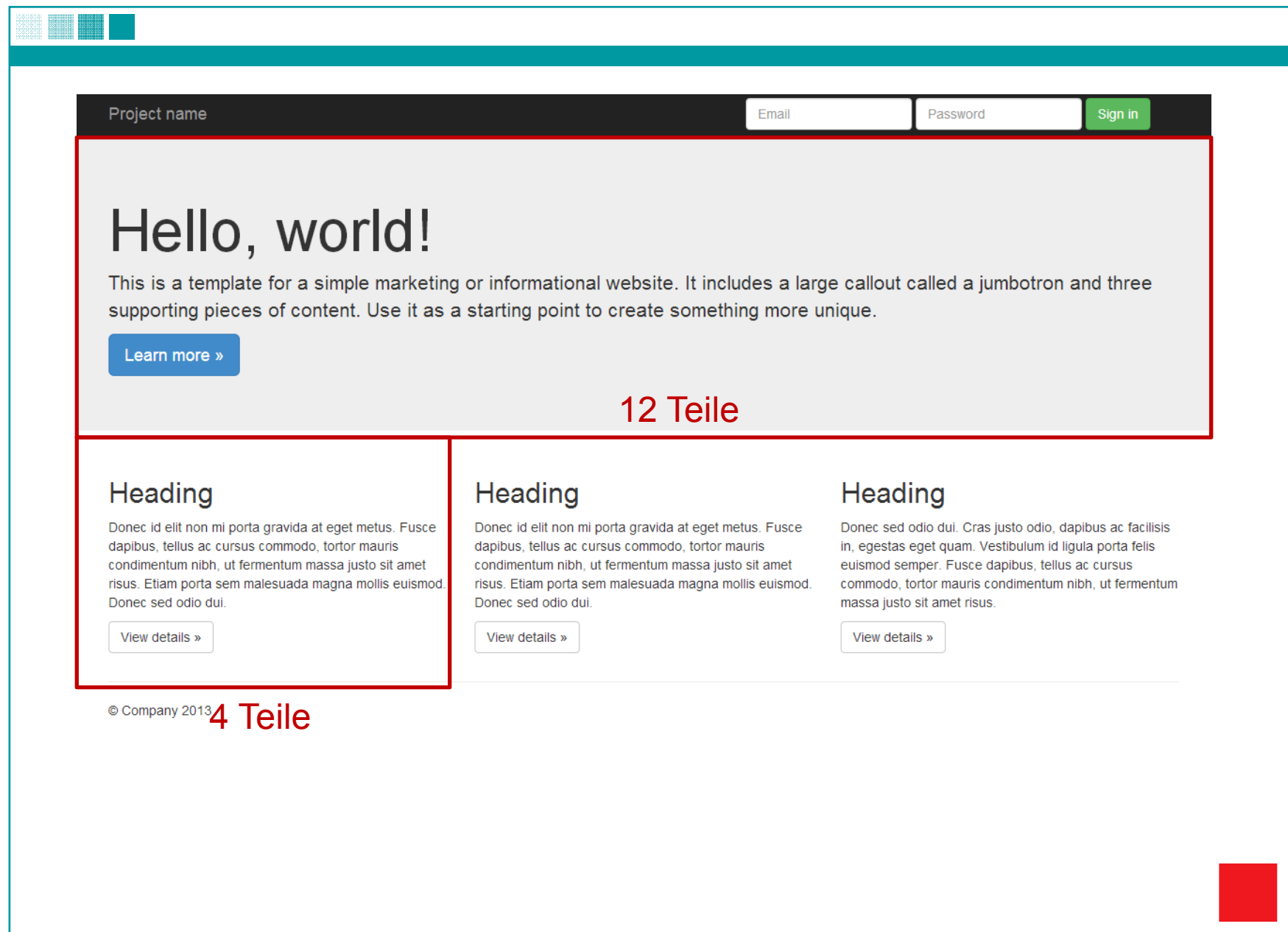
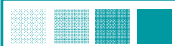


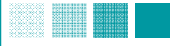
# Frameworks für Responsive Web Design

- Media Queries im bootstrap.css

```
/* Extra small devices (phones, less than 768px) */  
/* No media query since this is the default in Bootstrap */  
  
/* Small devices (tablets, 768px and up) */  
@media (min-width: @screen-sm-min) { ... }  
  
/* Medium devices (desktops, 992px and up) */  
@media (min-width: @screen-md-min) { ... }  
  
/* Large devices (large desktops, 1200px and up) */  
@media (min-width: @screen-lg-min) { ... }
```







## 12 Teile

# Hello, world!

This is an example to show the potential of an offcanvas layout pattern in Bootstrap. Try some responsive-range viewport sizes to see it in action.

### Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

### Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

### Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

### Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

### Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

### Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

9 Teile

Link

Link

Link

Link

Link

Link

Link

Link

Link

Link

3 Teile



# Hello, world!

This is an example to show the potential of an offcanvas layout pattern in Bootstrap. Try some responsive-range viewport sizes to see it in action.

## Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

4 Teile

## Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

4 Teile

## Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

4 Teile

## Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

## Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

12 Teile

## Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

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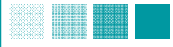
Link

Link

Link

Link

Link



## 12 Teile

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This is an example to show the potential of an offcanvas layout pattern in Bootstrap. Try some responsive-range viewport sizes to see it in action.

### Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

4 Teile

### Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

4 Teile

### Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

4 Teile

### Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

### Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

12 Teile 9 Teile

### Heading

Donec id elit non mi porta gravida at eget metus. Fusce dapibus, tellus ac cursus commodo, tortor mauris condimentum nibh, ut fermentum massa justo sit amet risus. Etiam porta sem malesuada magna mollis euismod. Donec sed odio dui.

[View details »](#)

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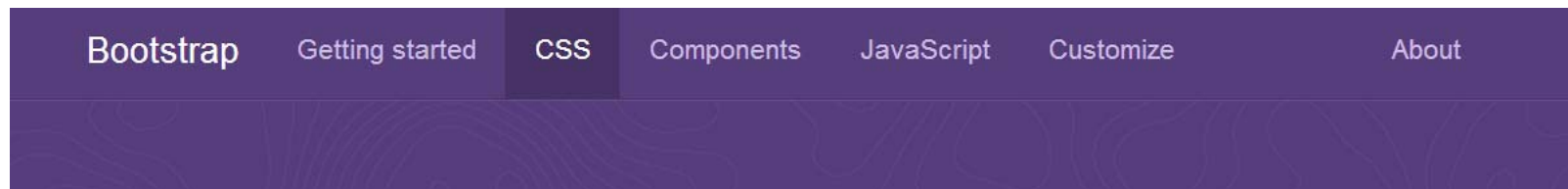
Link

Link

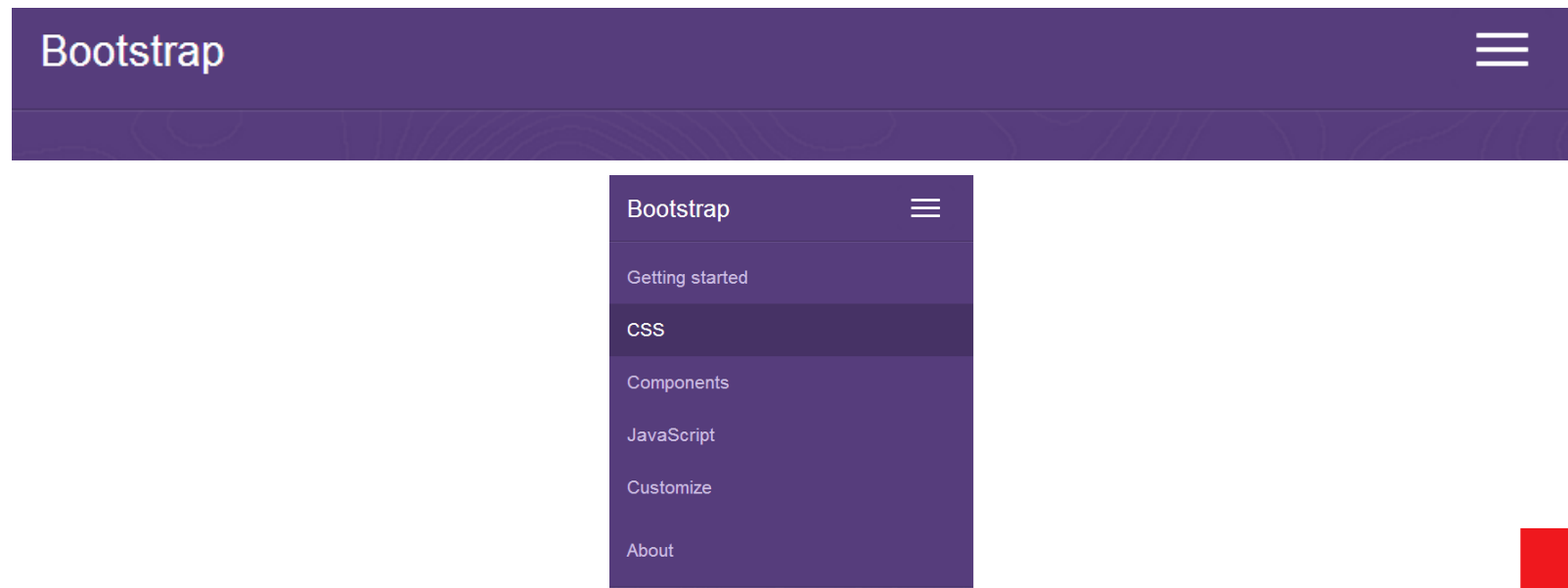
3 Teile

# Frameworks für Responsive Web Design

- Menü – normal:

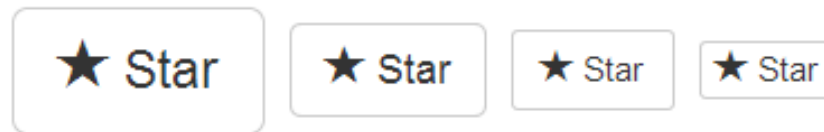


- Menü – minimal:



# Frameworks für Responsive Web Design

## ■ Buttons/Icons:

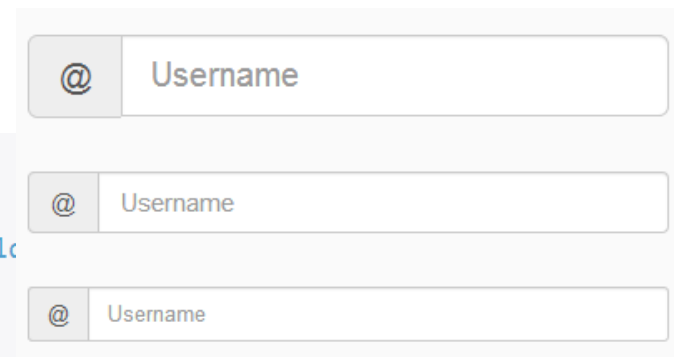


## ■ Inputs:

```
<div class="input-group input-group-lg">
  <span class="input-group-addon">@</span>
  <input type="text" class="form-control" placeholder="Username">
</div>

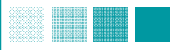
<div class="input-group">
  <span class="input-group-addon">@</span>
  <input type="text" class="form-control" placeholder="Username">
</div>

<div class="input-group input-group-sm">
  <span class="input-group-addon">@</span>
  <input type="text" class="form-control" placeholder="Username">
</div>
```



<http://getbootstrap.com/components/>

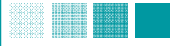




# Frameworks für Responsive Web Design

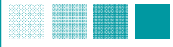
- Zusammenfassung
  - Nützliche Bibliothek für UI und Responsive Web Design
  - Ausgeklügeltes System für die Anordnung von Inhalten durch das Grid
  - Mehr Kontrolle über Inhalte
  - Vorgefertigte Steuerelemente (Menüs,...) mit der Option, die Größen anzupassen





# Nützliche Links

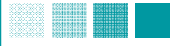




## Nützliche Links

- Boilerplate: <http://www.initializr.com/>
- Templates: <http://html5up.net/>
- Wordpress: <http://www.hongkiat.com/blog/free-responsive-wordpress-themes/>
- Bootstrap:
  - Version 3+ (IE 8+, FF > 3.5): <http://getbootstrap.com/>
  - Version 2.3.2: <http://getbootstrap.com/2.3.2/>
- Testing Tools:
  - <http://deviceponsive.com/>
  - <http://t3n.de/news/responsive-web-design-komfortabel-380139/>





# Vielen Dank für die Aufmerksamkeit!

