

Разработка пользовательского веб-интерфейса

Bootstrap, CSS примеры

Сергей Геннадьевич Синица

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sin@kubsu.ru

Bootstrap

Bootstrap

Build responsive, mobile-first projects on the web with the world's most popular front-end component library.

Bootstrap is an open source toolkit for developing with HTML, CSS, and JS. Quickly prototype your ideas or build your entire app with our Sass variables and mixins, responsive grid system, extensive prebuilt components, and powerful plugins built on jQuery.

[Get started](#)

[Download](#)

Currently v4.3.1



Installation

Include Bootstrap's source Sass and JavaScript files via npm, Composer or Meteor. Package managed installs don't include documentation, but do include our build system and readme.

```
$ npm install bootstrap
```

```
$ gem install bootstrap -v 4.3.1
```



BootstrapCDN

When you only need to include Bootstrap's compiled CSS or JS, you can use [BootstrapCDN](#).

CSS only

```
<link rel="stylesheet" href="https://stackpath.bootstrapcdn.com
```

JS, Popper.js, and jQuery

```
<script src="https://code.jquery.com/jquery-3.3.1.slim.min.js"
<script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js,
<script src="https://stackpath.bootstrapcdn.com/bootstrap/4.3
```



Official Themes

Take Bootstrap 4 to the next level with official premium themes—toolkits built on Bootstrap with new components and plugins, docs, and build tools.



getbootstrap.com

Контейнер с «резиновой» шириной.
100% по ширине всегда.

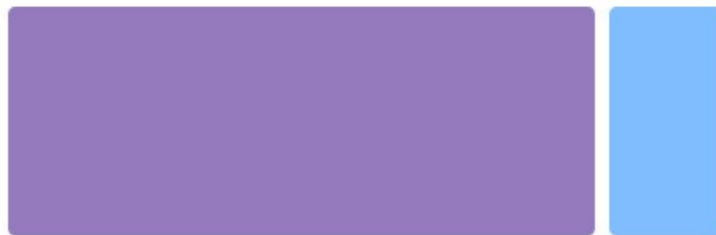


```
<div class="container-fluid">  
  ...  
</div>
```

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getbootstrap.com

Responsive контейнер с фиксированной шириной.
Max Width меняется в соответствии с брейкпоинтами.



```
<div class="container">  
  <!-- Content here -->  
</div>
```

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Брейкпоинты

Брейкпоинт – интервал Media Query по ширине.

```
// xs. Extra small devices (portrait phones, less than 576px)
// No media query for `xs` since this is the default in Bootstrap

// sm. Small devices (landscape phones, 576px and up)
@media (min-width: 576px) { ... }

// md. Medium devices (tablets, 768px and up)
@media (min-width: 768px) { ... }

// lg. Large devices (desktops, 992px and up)
@media (min-width: 992px) { ... }

// xl. Extra large devices (large desktops, 1200px and up)
@media (min-width: 1200px) { ... }
```


Брейкпоинты

В обратную сторону – заданный размер или меньше.

```
// Extra small devices (portrait phones, less than 576px)
@media (max-width: 575.98px) { ... }

// Small devices (landscape phones, less than 768px)
@media (max-width: 767.98px) { ... }

// Medium devices (tablets, less than 992px)
@media (max-width: 991.98px) { ... }

// Large devices (desktops, less than 1200px)
@media (max-width: 1199.98px) { ... }

// Extra large devices (large desktops)
// No media query since the extra-large breakpoint has no upper
bound on its width
```

SASS Mixin

Используем препроцессор CSS чтобы применить CSS для отдельных брейкпоинтов. Препроцессор позволяет «программировать» в CSS – переменные, вычисления, макроподстановка (миксины), инклюдь.

```
@include media-breakpoint-down(xs) { ... }
@include media-breakpoint-down(sm) { ... }
@include media-breakpoint-down(md) { ... }
@include media-breakpoint-down(lg) { ... }
// No media query necessary for xl breakpoint as it has no upper
bound on its width

// Example: Style from medium breakpoint and down
@include media-breakpoint-down(md) {
  .custom-class {
    display: block;
  }
}
```

Аналогично с media-breakpoint-up

Media Query для одного типа экрана

```
// Extra small devices (portrait phones, less than 576px)
@media (max-width: 575.98px) { ... }

// Small devices (landscape phones, 576px and up)
@media (min-width: 576px) and (max-width: 767.98px) { ... }

// Medium devices (tablets, 768px and up)
@media (min-width: 768px) and (max-width: 991.98px) { ... }

// Large devices (desktops, 992px and up)
@media (min-width: 992px) and (max-width: 1199.98px) { ... }

// Extra large devices (large desktops, 1200px and up)
@media (min-width: 1200px) { ... }

@include media-breakpoint-only(xs) { ... }
@include media-breakpoint-only(sm) { ... }
@include media-breakpoint-only(md) { ... }
@include media-breakpoint-only(lg) { ... }
@include media-breakpoint-only(xl) { ... }
```

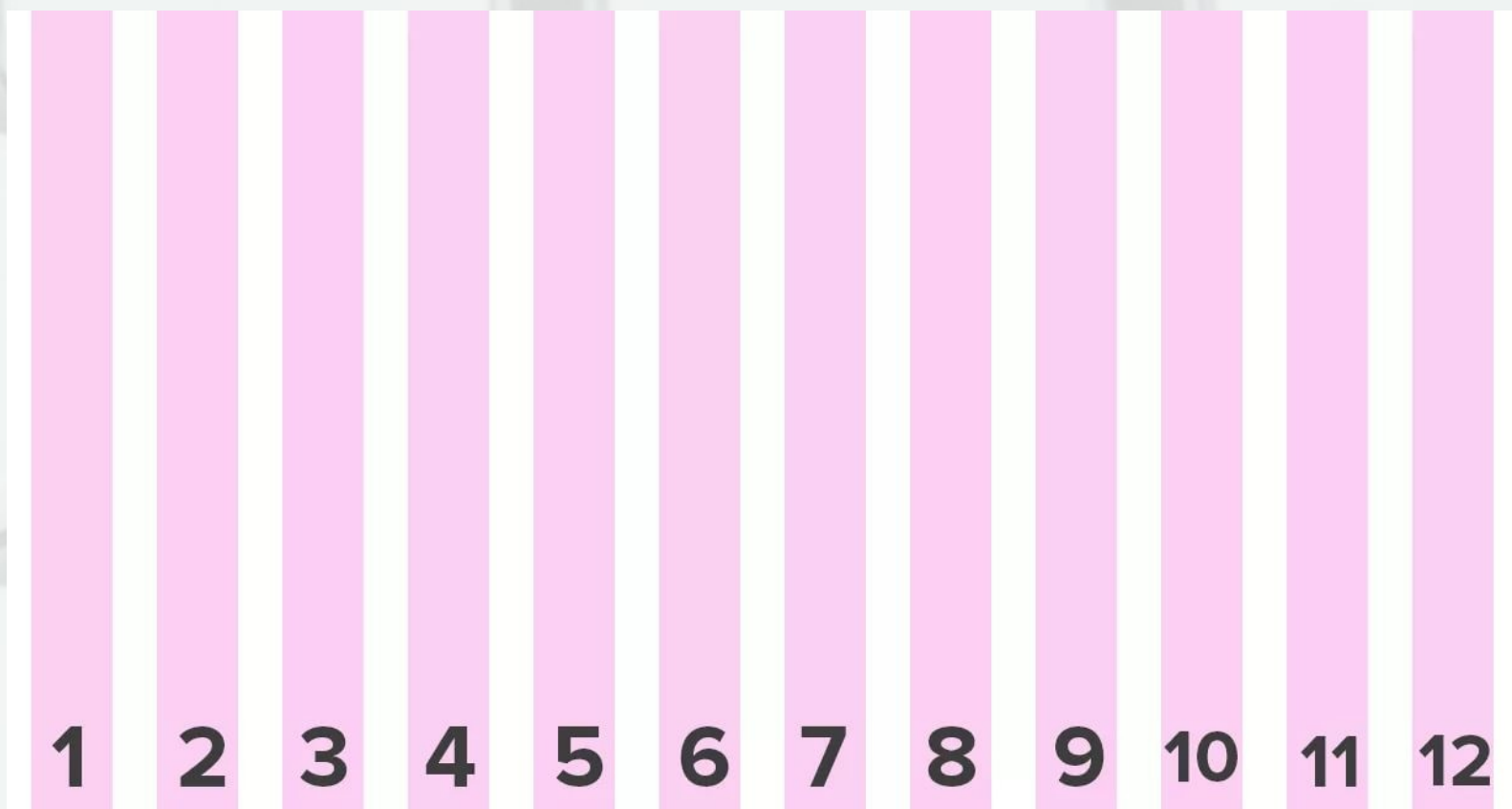

Media Query нескольких экранов

```
// Example  
// Apply styles starting from medium devices and up to extra  
// large devices  
@media (min-width: 768px) and (max-width: 1199.98px) { ... }  
  
@include media-breakpoint-between(md, xl) { ... }
```

Z-Index

\$zindex-dropdown:	1000	!default;
\$zindex-sticky:	1020	!default;
\$zindex-fixed:	1030	!default;
\$zindex-modal-backdrop:	1040	!default;
\$zindex-modal:	1050	!default;
\$zindex-popover:	1060	!default;
\$zindex-tooltip:	1070	!default;

Flexbox респонсив ґрид 12 колонок, 30px gutter



Flexbox респонсив грид 12 колонок, 30px gutter

One of three columns

One of three columns

One of three columns

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

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Три колонки равной ширины для малых, средних, больших и очень больших устройств.
На xs устройствах колонки выведутся в столбик!
.container их выводит по центру.

Равная ширина

1 of 2	2 of 2	
1 of 3	2 of 3	3 of 3

```
<div class="container">
  <div class="row">
    <div class="col">
      1 of 2
    </div>
    <div class="col">
      2 of 2
    </div>
  </div>
  <div class="row">
    <div class="col">
      1 of 3
    </div>
    <div class="col">
      2 of 3
    </div>
    <div class="col">
      3 of 3
    </div>
  </div>
</div>
```

Copy

Заданная ширина одной колонки

1 of 3	2 of 3 (wider)	3 of 3
--------	----------------	--------

1 of 3	2 of 3 (wider)	3 of 3
--------	----------------	--------

```
<div class="container">
  <div class="row">
    <div class="col">
      1 of 3
    </div>
    <div class="col-6">
      2 of 3 (wider)
    </div>
    <div class="col">
      3 of 3
    </div>
  </div>
  <div class="row">
    <div class="col">
      1 of 3
    </div>
    <div class="col-5">
      2 of 3 (wider)
    </div>
    <div class="col">
      3 of 3
    </div>
  </div>
</div>
```

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Авто ширина

1 of 3	Variable width content	3 of 3
--------	------------------------	--------

1 of 3	Variable width content	3 of 3
--------	------------------------	--------

```
<div class="container">
  <div class="row justify-content-md-center">
    <div class="col col-lg-2">
      1 of 3
    </div>
    <div class="col-md-auto">
      Variable width content
    </div>
    <div class="col col-lg-2">
      3 of 3
    </div>
  </div>
  <div class="row">
    <div class="col">
      1 of 3
    </div>
    <div class="col-md-auto">
      Variable width content
    </div>
    <div class="col col-lg-2">
      3 of 3
    </div>
  </div>
</div>
```

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Респонсив классы

col	col	col	col
col-8			col-4

```
<div class="container">
  <div class="row">
    <div class="col">col</div>
    <div class="col">col</div>
    <div class="col">col</div>
    <div class="col">col</div>
  </div>
  <div class="row">
    <div class="col-8">col-8</div>
    <div class="col-4">col-4</div>
  </div>
</div>
```

Copy

Вертикальные колонки становятся горизонтально на брейкпоинте sm

col-sm-8		col-sm-4
col-sm	col-sm	col-sm

```
<div class="container">
  <div class="row">
    <div class="col-sm-8">col-sm-8</div>
    <div class="col-sm-4">col-sm-4</div>
  </div>
  <div class="row">
    <div class="col-sm">col-sm</div>
    <div class="col-sm">col-sm</div>
    <div class="col-sm">col-sm</div>
  </div>
</div>
```

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Смесь под разные устройства

.col-12 .col-md-8		.col-6 .col-md-4
.col-6 .col-md-4	.col-6 .col-md-4	.col-6 .col-md-4
.col-6	.col-6	

```
<div class="container">
  <!-- Stack the columns on mobile by making one full-width and the other half-width -->
  <div class="row">
    <div class="col-12 col-md-8">.col-12 .col-md-8</div>
    <div class="col-6 col-md-4">.col-6 .col-md-4</div>
  </div>

  <!-- Columns start at 50% wide on mobile and bump up to 33.3% wide on desktop -->
  <div class="row">
    <div class="col-6 col-md-4">.col-6 .col-md-4</div>
    <div class="col-6 col-md-4">.col-6 .col-md-4</div>
    <div class="col-6 col-md-4">.col-6 .col-md-4</div>
  </div>

  <!-- Columns are always 50% wide, on mobile and desktop -->
  <div class="row">
    <div class="col-6">.col-6</div>
    <div class="col-6">.col-6</div>
  </div>
</div>
```

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Gutters

Межколоночное расстояние можно менять пересборкой бутстрапа или вспомогательными классами через padding и отрицательный margin (utility classes).

Но проще отговорить дизайнера делать это!

Here's an example of customizing the Bootstrap grid at the large (**lg**) breakpoint and above. We've increased the **.col** padding with **.px-lg-5**, counteracted that with **.mx-lg-n5** on the parent **.row** and then adjusted the **.container** wrapper with **.px-lg-5**.

Custom column padding

Custom column padding

```
<div class="container px-lg-5">
  <div class="row mx-lg-n5">
    <div class="col py-3 px-lg-5 border bg-light">Custom column padding</div>
    <div class="col py-3 px-lg-5 border bg-light">Custom column padding</div>
  </div>
</div>
```

Copy

Vertical Alignment

```
<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 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 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>
```

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

Vertical Alignment

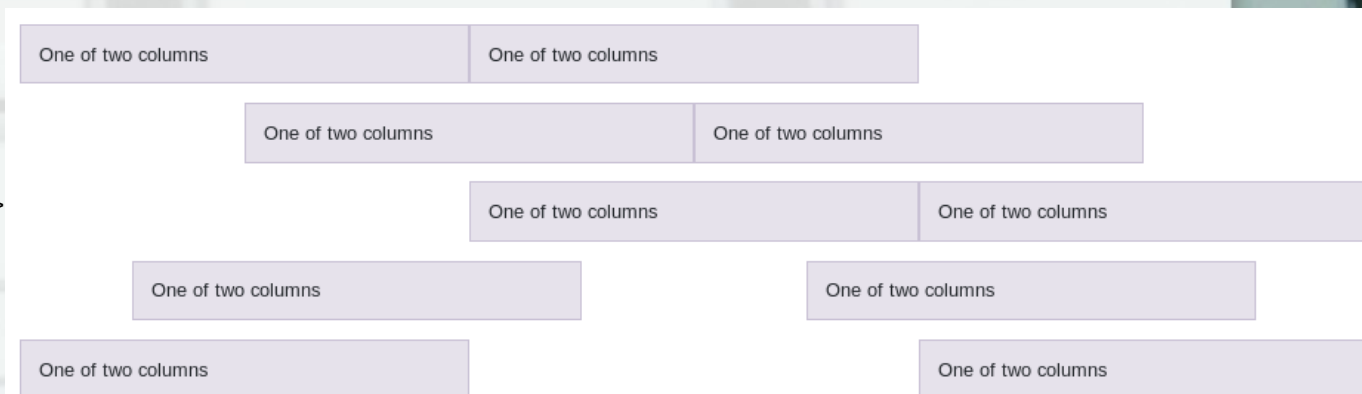


```
<div class="container">
  <div class="row">
    <div class="col align-self-start">
      One of three columns
    </div>
    <div class="col align-self-center">
      One of three columns
    </div>
    <div class="col align-self-end">
      One of three columns
    </div>
  </div>
</div>
```

Copy

Horizontal Alignment

```
<div class="container">
  <div class="row justify-content-start">
    <div class="col-4">
      One of two columns
    </div>
    <div class="col-4">
      One of two columns
    </div>
  </div>
  <div class="row justify-content-center">
    <div class="col-4">
      One of two columns
    </div>
    <div class="col-4">
      One of two columns
    </div>
  </div>
  <div class="row justify-content-end">
    <div class="col-4">
      One of two columns
    </div>
    <div class="col-4">
      One of two columns
    </div>
  </div>
  <div class="row justify-content-around">
    <div class="col-4">
      One of two columns
    </div>
    <div class="col-4">
      One of two columns
    </div>
  </div>
  <div class="row justify-content-between">
    <div class="col-4">
      One of two columns
    </div>
    <div class="col-4">
      One of two columns
    </div>
  </div>
</div>
```



No Gutter

```
<div class="row no-gutters">  
  <div class="col-12 col-sm-6 col-md-8">.col-12 .col-sm-6 .col-md-8</div>  
  <div class="col-6 col-md-4">.col-6 .col-md-4</div>  
</div>
```

```
.no-gutters {  
  margin-right: 0;  
  margin-left: 0;  
  > .col,  
  > [class*="col-"] {  
    padding-right: 0;  
    padding-left: 0;  
  }  
}
```

Reordering

First, but unordered

Third, but first

Second, but last

```
<div class="container">
  <div class="row">
    <div class="col">
      First, but unordered
    </div>
    <div class="col order-12">
      Second, but last
    </div>
    <div class="col order-1">
      Third, but first
    </div>
  </div>
</div>
```

Copy

Spacing: 1 \$spacer = 1rem

1rem = root em = font-size B html

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

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`
- `l` - for classes that set `margin-left` or `padding-left`
- `r` - for classes that set `margin-right` or `padding-right`
- `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`

Spacing как работает внутри?

```
.mt-0 {  
  margin-top: 0 !important;  
}  
.ml-1 {  
  margin-left: ($spacer * .25) !important;  
}  
.px-2 {  
  padding-left: ($spacer * .5) !important;  
  padding-right: ($spacer * .5) !important;  
}  
.p-3 {  
  padding: $spacer !important;  
}
```

...

```
.mt-n1 {  
  margin-top: -0.25rem !important;  
}
```

```
html {  
  font-size: 10px;  
}  
body {  
  font-size: 12pt;  
  padding: 10px;  
}  
main, aside {  
  background-color: #ddd;  
  padding: 10px;  
  font-family: serif;  
  height: 100%;  
}  
h1 {  
  margin-top: 15px;  
  font-size: 2em;  
  font-weight: bold;  
}
```

```
<div class="container-fluid">  
  <div class="row d-flex mx-sm-m3">  
    <div class="col-md-9 order-2 px-sm-3">  
      <div class="h-100 py-3">  
        <main>  
          <h1>Главный контент</h1>  
          <p>Вторая строка</p>  
        </main>  
      </div>  
    </div>  
    <div class="col-md-3 order-1 px-sm-3">  
      <div class="h-100 py-3">  
        <aside>  
          Сайдбар  
        </aside>  
      </div>  
    </div>  
  </div>  
</div>
```

Сайдбар

Главный контент

Вторая строка

Сайдбар

Главный контент

Вторая строка

А как было?

```
#main-aside-wrapper {  
  display: flex;  
  flex-direction: column;  
}  
#main-aside-wrapper main, #main-  
aside-wrapper aside {  
  background-color: #ddd;  
  margin: 10px;  
  padding: 10px;  
}  
#main-aside-wrapper aside {  
  flex: 1;  
  order: 1;  
}  
#main-aside-wrapper main {  
  flex: 3;  
  order: 2;  
}
```

```
@media screen and (min-width:  
800px) {  
  #main-aside-wrapper {  
    flex-direction: row;  
  }  
}
```

```
<div id="main-aside-wrapper">  
  <main>  
    <h1>Главный контент</h1>  
    <p>Вторая строка</p>  
  </main>  
  <aside>Сайдбар</aside>  
</div>
```


Зачем использовать? Компоненты!

Modal title

Modal body text goes here.

Close

Save changes

```
<div class="modal" tabindex="-1" role="dialog">
  <div class="modal-dialog" role="document">
    <div class="modal-content">
      <div class="modal-header">
        <h5 class="modal-title">Modal title</h5>
        <button type="button" class="close" data-dismiss="modal" aria-label="Close">
          <span aria-hidden="true">&times;</span>
        </button>
      </div>
      <div class="modal-body">
        <p>Modal body text goes here.</p>
      </div>
      <div class="modal-footer">
        <button type="button" class="btn btn-secondary" data-dismiss="modal">Close</button>
        <button type="button" class="btn btn-primary">Save changes</button>
      </div>
    </div>
  </div>
</div>
```

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Сообщение

отправить

```
* {
  box-sizing: border-box;
}
.fixed-overlay {
  position: fixed;
  overflow: auto;
  left: 0;
  top: 0;
  width: 100%;
  height: 100%;
  background-color: rgba(0,0,0,0.5);
}
.modal {
  position: absolute;
  left: 50%;
  top: 50%;
  margin-left: -100px;
  margin-top: -75px;
}
.modal_container {
  background-color: #fff;
  width: 200px;
  height: 150px;
}
```

```
<div class="fixed-overlay">
  <div class="modal">
    <div class="modal_container">
    </div>
  </div>
</div>
```

```
* {  
  box-sizing: border-box;
```

```
}  
.fixed-overlay {  
  position: fixed;  
  overflow: auto;  
  left: 0;  
  top: 0;  
  width: 100%;  
  height: 100%;
```

```
  background-color: rgba(0,0,0,0.5);
```

```
}  
.modal {  
  position: absolute;  
  left: 50%;  
  top: 50%;  
  transform: translate(-50%, -50%);
```

```
}  
.modal_container {  
  padding: 20px;  
  background-color: #fff;  
  color: #000;  
}
```

```
<div class="fixed-overlay">
```

```
  <div class="modal">
```

```
    <div class="modal_container">
```

```
      </div>
```

```
    </div>
```

```
  </div>
```

Если нет тонких линий...

```
.fixed-overlay__modal {
  text-align: center;
  white-space: nowrap;
}

.fixed-overlay__modal::after {
  display: inline-block;
  vertical-align: middle;
  width: 0;
  height: 100%;
  content: '';
}

.modal {
  display: inline-block;
  vertical-align: middle;
}

.modal_container {
  margin: 50px;
  padding: 20px;
  min-width: 200px;
  text-align: left;
  white-space: normal;
  background-color: #fff;
  color: #000;
}
```

```
<div class="fixed-overlay fixed-
overlay__modal">
  <div class="modal">
    <div class="modal_container">
      </div>
    </div>
  </div>
```

<https://habr.com/ru/post/252769/>

<https://habr.com/ru/post/238449/> вариант 4


```
.fixed-overlay {  
  width: 100%;  
  height: 100%;  
  position: fixed;  
  top: 0;  
  left: 0;  
  display: flex;  
  align-items: center;  
  align-content: center;  
  justify-content: center;  
  overflow: auto;  
}
```

```
<div class="fixed-overlay">  
  <div class="modal">  
    <div class="modal_container">  
    </div>  
  </div>  
</div>
```

Если IE10+...

Видео

```
<video class="video-wrapper" preload="auto" autoplay="true" loop="true" muted="muted">  
  <source src="video.mp4" type="video/mp4"><!-- MP4 для Safari, IE9+, iPhone, iPad,  
  Android, и Windows Phone 7 -->  
  <source src="video.webm" type="video/webm"><!-- WebM/VP8 для Firefox4, Opera, и  
  Chrome -->  
  <source src="video.ogv" type="video/ogg"><!-- Ogg/Vorbis для старых версий браузеров  
  Firefox и Opera -->  
  <object data="video.swf" type="application/x-shockwave-flash"><!-- добавляем  
  видеоконтент для устаревших браузеров, в которых нет поддержки элемента video →  
    <param name="movie" value="video.swf">  
  </object>  
</video>
```

Шрифт

```
@font-face {
```

```
font-family: "WebFont";
```

```
src: url(WebFont.woff) format("woff"), /* все современные браузеры, IE9+ */  
     url(WebFont.ttf) format("truetype"); /* все современные браузеры */
```

```
}
```

```
p {font-family: "WebFont", Arial, sans-serif; }
```

БЭМ

Методология верстки Блок-Элемент-Модификатор от Яндекса:

<https://ru.bem.info/methodology/>

Правила нейминга селекторов:

имя-блока__имя-элемента_имя-модификатора_значение-модификатора

search-form__button_disabled или search-form__button_size_m

БЭМ

```
<!DOCTYPE html>
<html>
  <head>
    <title>Bootstrap</title>
    <script src="https://code.jquery.com/jquery-3.3.1.slim.min.js"></script>
    <script
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.7/umd/popper.min.js"></
script>
    <link rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css">
    <script
src="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/js/bootstrap.min.js"></
script>
```

БЭМ

<style>

/* Инициализация глобальных стилей */

```
html {  
  font-size: 10px;  
}
```

```
body {  
  font-size: 12pt;  
  padding: 10px;  
}
```

/* Стиль компонента основного контента */

```
.b-content {  
  background-color: #ddd;  
  padding: 10px;  
  font-family: serif;  
  height: 100%;  
}
```


БЭМ именование и модификаторы

```
<!-- Блок `logo` -->
```

```
<div class="logo logo_theme_islands">
```

```
  
```

```
</div>
```

```
<!-- Блок `user` -->
```

```
<div class="user user_theme_islands">
```

```
  
```

```
  ...
```

```
</div>
```

БЭМ именование и модификаторы

`.logo {}` `/* CSS-класс блока `logo` */`

`.logo__img {}` `/* CSS-класс элемента `logo__img` */`

`.logo_theme_islands {}` `/* CSS-класс модификатора `logo_theme_islands` */`

`.user {}` `/* CSS-класс блока `user` */`

`.user__img {}` `/* CSS-класс элемента `user__img` */`

`.user_theme_islands {}` `/* CSS-класс модификатора `user_theme_islands` */`

БЭМ модификаторы

```
<button class="button button_size_s">...</button>
```

```
.button {  
  font-family: Arial, sans-serif;  
  text-align: center;  
}
```

```
.button_size_s {  
  font-size: 13px;  
  line-height: 24px;  
}
```

```
.button_size_m {  
  font-size: 15px;  
  line-height: 28px;  
}
```

БЭМ

```
/* Не используем каскад */
```

```
.b-content__h1 {  
  margin-top: 15px;  
  font-size: 2em;  
  font-weight: bold;  
}
```

```
/* Стилль компонента сайдбара */
```

```
.b-sidebar {  
  background-color: #ddd;  
  padding: 10px;  
  font-family: serif;  
  height: 100%;  
}
```

```
</style>
```

```
</head>
```

БЭМ + Bootstrap

```
<body>
  <div class="container-fluid b-page">
    <div class="row d-flex mx-sm-m3">
      <div class="col-md-9 order-2 px-sm-3">
        <div class="h-100 py-3">
          <main class="b-content">
            <h1 class="b-content__h1">Главный контент</h1>
            <p>Вторая строка</p>
          </main>
        </div>
      </div>
      <div class="col-md-3 order-1 px-sm-3">
        <div class="h-100 py-3">
          <aside class="b-sidebar">
            Сайдбар
          </aside>
        </div>
      </div>
    </div>
  </div>
</body>
</html>
```