CSS, Seriously!

Introduction to a new CSS methodology

What the BEM?

- *Naming convention*
- *Block-Element-Modifier*
- *Invented by Yandex in 2009*
- *Widely used by the frontend community*

The Agenda

Key concepts
How to
In the wild
In community

Key concepts of Block-Element-Modifier

B

Block

E

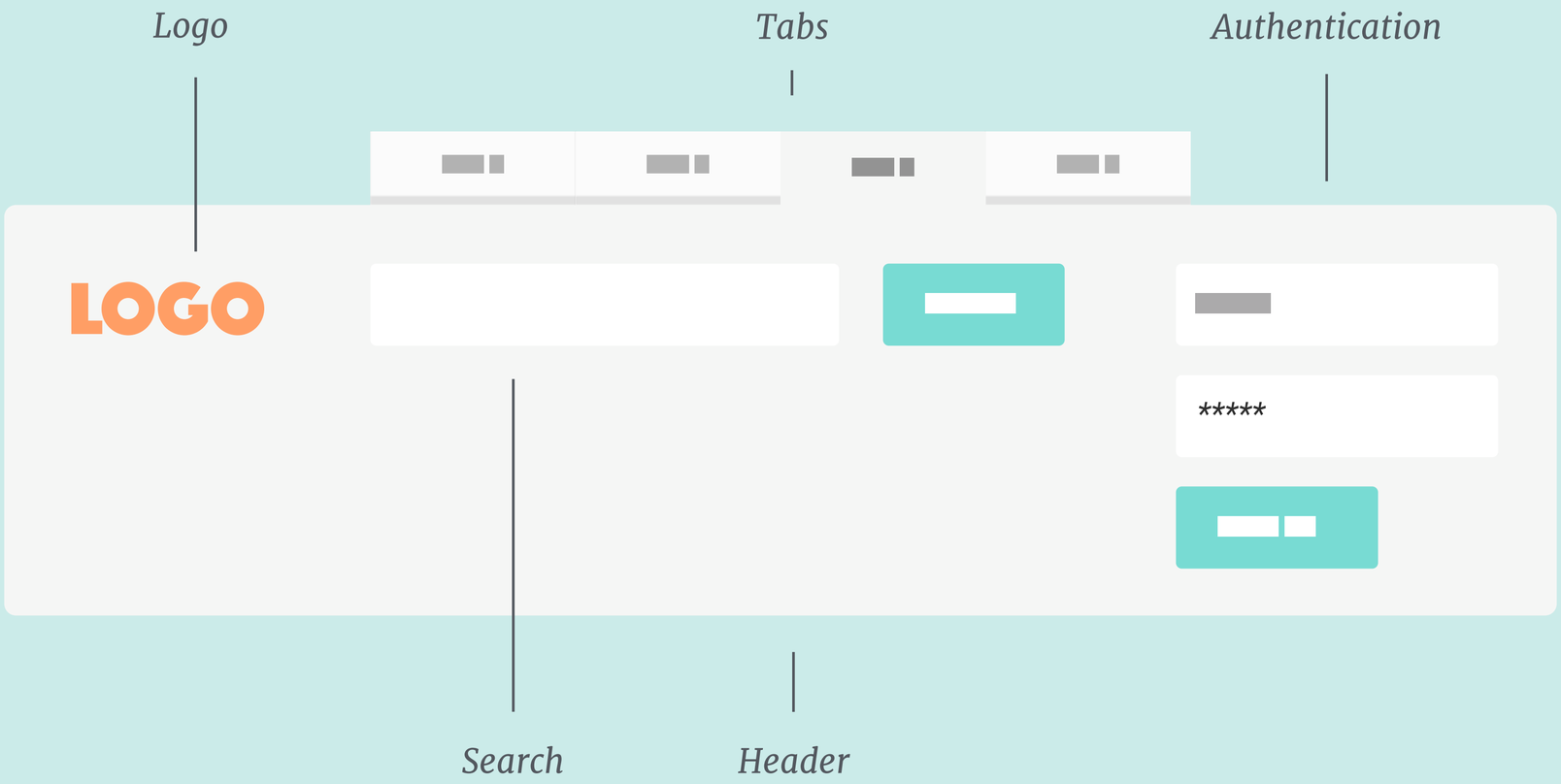
Element

M

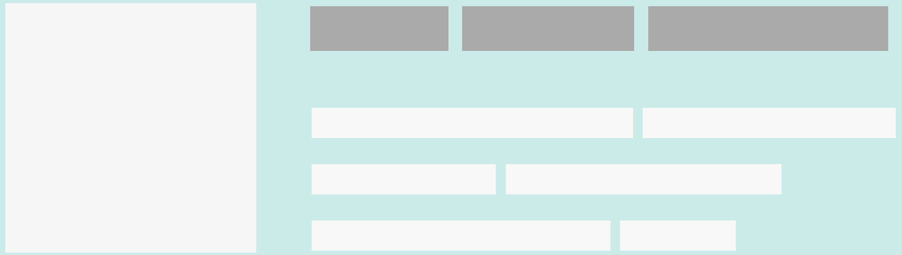
Modifier

A block is defining the ***high level component*** *and should be seen as* ***logical and functionally independent*** *entity.*

Block


Logo
Tabs
Authentication
LOGO
*****
Search
Header

Item

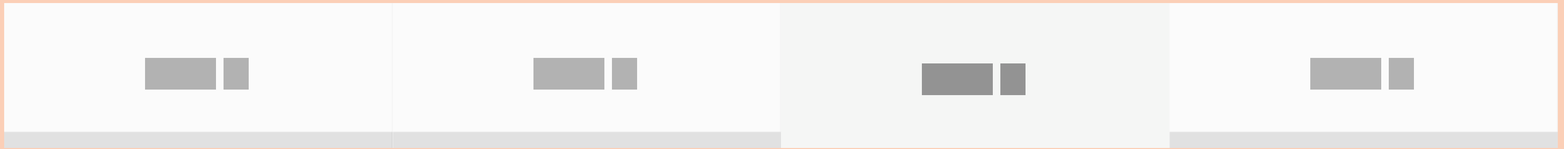


Item

*An element is a **child within the Block**, that helps to form it. An element is **semantically tied to its Block** and can't stand alone*

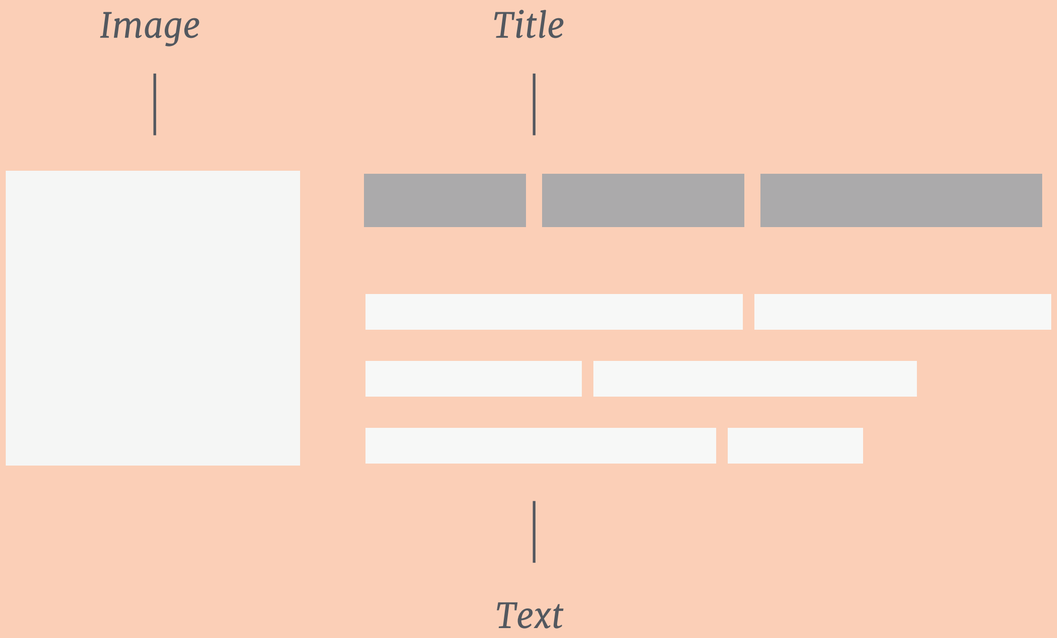
Element

Tabs



Tab Item *Tab Item* *Tab Item* *Tab Item*

Item

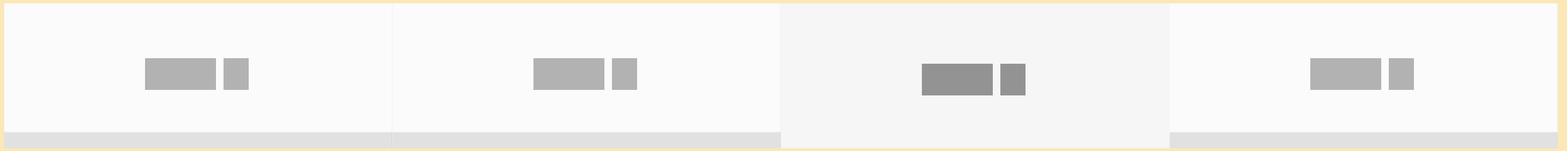


A Modifier ***defines the appearance and behaviour*** *of a Block or Element*

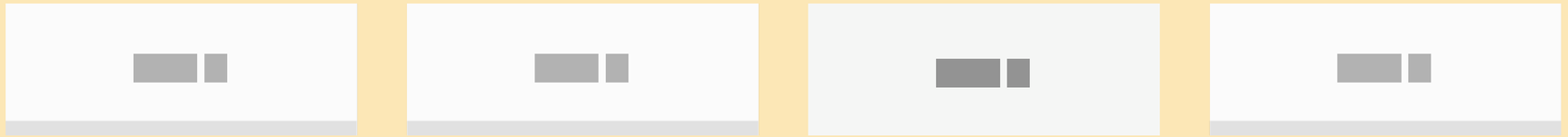
Modifier

Tabs

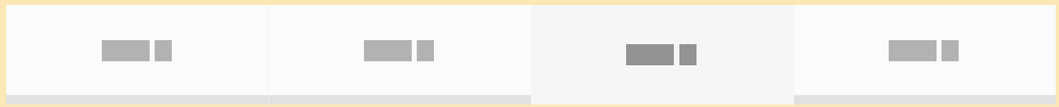
–



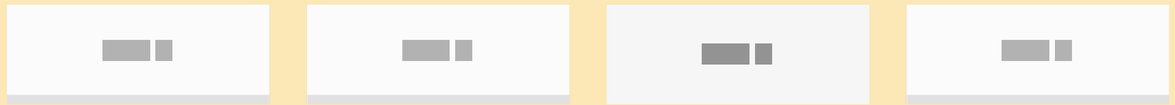
Spread



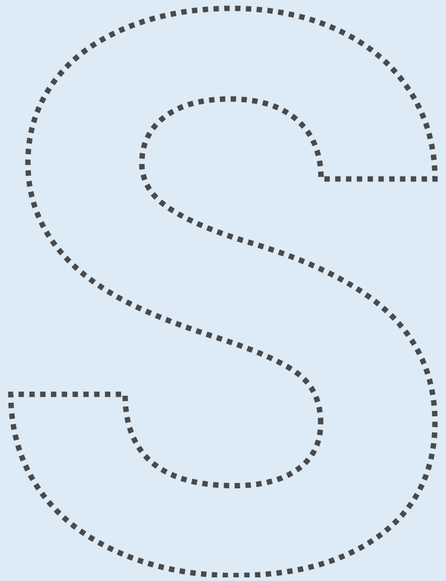
Small



Small & Spread

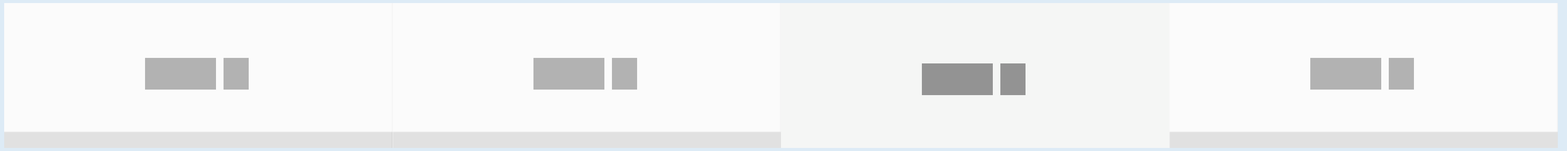


A State ***defines a temporary appearance and behaviour*** *of a Block or Element*



State

Tabs



Active

B

Block

independent and reusable

E

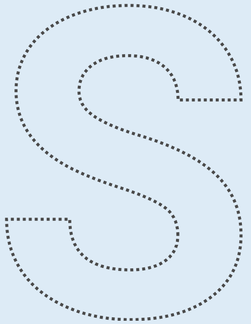
Element

children of a Block

M

Modifier

behaviour & appearance



State

<u>temporary</u> behaviour & appearance

How to master Block-Element-Modifier methodology

The cookbook for naming and writing HTML and CSS the BEM-way

Block

Naming

`tabs`

`site-header`

`feed-item`

`search`

*may consist of **lowercase latin letters, digits, and dashes**.*

*as **generic** as possible, as specific as necessary.*

Html

```
<div class="tabs"></div>


// Nested blocks

<header class="header">
  <div class="tabs"></div>
  <form class="search"></form>
</header>
```

names are meant to be
*used as **classes only***

can be nested

CSS

```
.tabs {}

.header {}

.site-header {}
```

~~`.header .tabs {}`~~

~~`h1.title {}`~~

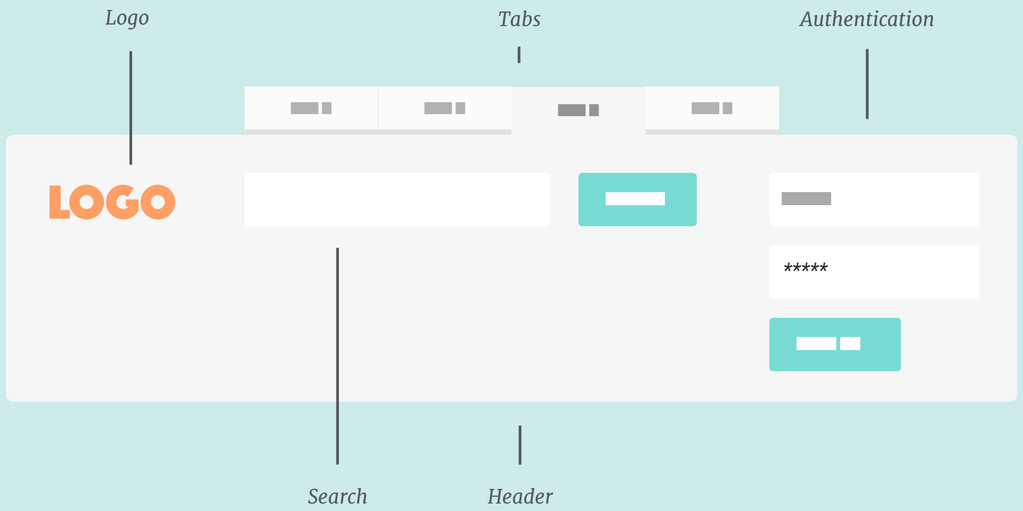
*remain **semantically independent***

*are **never** addressed in the context of another block*

*never use **float, positioning or margin***

do not depend on DOM elements

```
<header class="header">
    <nav class="tabs">
        ...
    </nav>
    <img class="logo" />
    <form class="search">
        ...
    </form>
    <form class="auth">
        ...
    </form>
</header>
```



Element

Naming

`tabs__item`

`feed-item__title`

`search__input`

consist of ***lowercase latin letters, digits, and dashes****.*

start with the ***name of the block separated with two underscores****:*

`block__element`

Html

```
<nav class="tabs">
  <a class=“tabs__item”></a>
  <a class=“tabs__item”></a>
</nav>


// Nested elements

<div class=“card">
  <header class=“card__header”>
    ...
  </header>
  <div class=“card__body”>
    <h3 class=“card__title”></h3>
  </div>
</div>
```

are meant to be used as
classes only

can be nested while
naming will stay flat

CSS

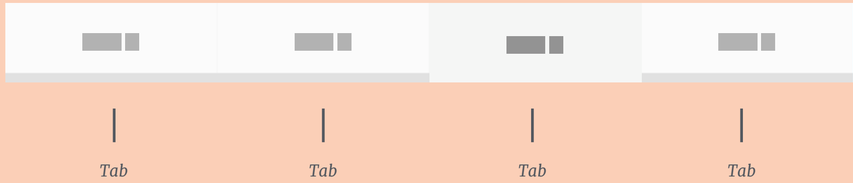
```
.tabs__item {}

// Try to avoid
.tabs .tabs__item {}

.header .tabs__item {}

li.tabs__item {}
```

avoid block selectors *to keep specificity low*

do not depend on other blocks

do not depend on DOM elements

```
<nav class=“tabs">
  <a class=“tabs__item”></a>
  <a class=“tabs__item”></a>
  <a class=“tabs__item”></a>
  <a class=“tabs__item”></a>
</nav>
```



Modifier

Naming

```
tabs--spread
button--theme-red
user__image--small
```

consist of ***lowercase latin letters, digits, and dashes****.*

as ***descriptive*** *as necessary*

start with the ***name of the block/element separated with by two dashes****:*

```
block--modifier
block__element--modifier
```

Html

```
<a class=“button button--small>
 <a class=“button__icon button__icon--inverted”
</a>


// Chained modifier
<a class=“button button--small button--blue”>
```

always appended as an
extra class

can be chained *to*
combine modifications

CSS

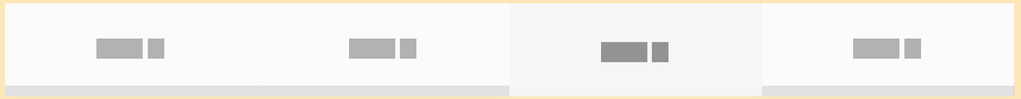
```
.button--m {}

.tabs--spread .tabs__item {}

.button__icon--inverted {}

// Try to avoid
.button--red .button--small {}


.header .tabs--spread {}

nav.tabs--spread {}
```

avoid cross modifier dependencies

do not depend on other blocks

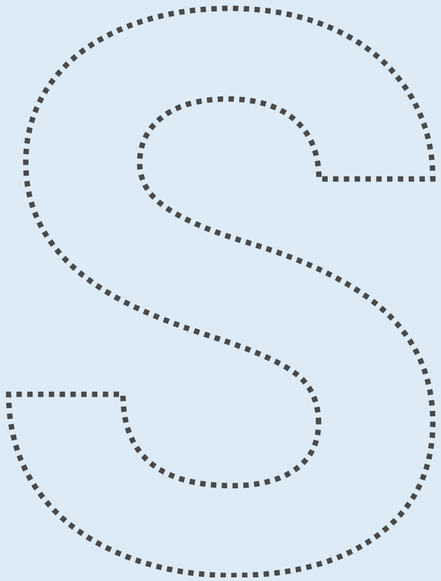
do not depend on DOM elements

```
<nav class="tabs">
  <a class="tabs__item"></a>
</nav>

.tabs {}
.tabs__item {}
```



```
<nav class="tabs tabs-spread">
  <a class="tabs__item"></a>
</nav>

.tabs {}
.tabs__item {}

.tabs--spread .tabs__item {
  margin: 0 10px;
}
```

```
<nav class="tabs tabs-spread tabs--small">
  <a class="tabs__item"></a>
</nav>

.tabs {}
.tabs__item {}

.tabs--spread .tabs__item {
  margin: 0 10px;
}

.tabs--small{
 font-size: 10px;
}
```



State

Naming

`is-selected`

`has-value`

may consist of ***lowercase latin letters, digits, and dashes****.*

***prefixed with* is *or* has:**

`is-state`
`has-state`

Html

```
<nav class=“main-menu”>
  <a class=“main-menu__link is-active”></a>
</nav>
```

names are meant to be
*used as **classes only***

*added as an **extra class***

CSS

```
.tab.is-visible {}
.tab__item.is-active {}
.tab.is-visible .tab__item {}

~~h1.is-active {}~~
~~.is-visible {}~~
```

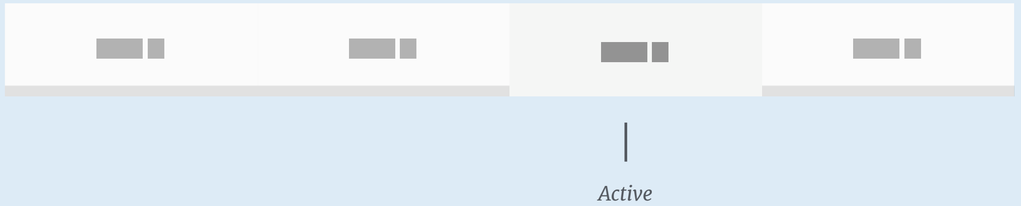
always tied to a block or element

trumps other stylings *due to higher specificity*

do not depend on DOM elements

do not use standalone

```
<nav class="tabs">
  <a class="tabs__item"></a>
  <a class="tabs__item"></a>
  <a class="tabs__item is-active"</a>
  <a class="tabs__item"></a>
</nav>
```



Active

Element/Modifier or a new Block ?

start with a modifier/element
instead of over-modularize
–
when it gets difficult to manage,
start with a brand new component
–
latest when starting to overwrite a
lot of the block styling with
modifiers

BEM in the wild

Common best practices and pitfalls

Monoliths

Single responsibility

Monoliths

```
.btn-login {
  display: inline-block;
  padding: 2em;
  background-color: green;
  color: white;
}
```

hard to change

hard to swap styles out

Single responsibility

clearly separated concerns

easy to just use the ones that we need

easy to add new ones

```
.btn{
  display: inline-block;
}

.btn--large {
  padding: 2em;
}

.btn--primary {
  background-color: green;
  color: white;
}
```

Monoliths

```
.btn-login {
  display: inline-block;
  padding: 2em;
  background-color: green;
  color: white;
}
```

Single responsibility

```
.btn{
  display: inline-block;
}

.btn--large {
  padding: 2em;
}

.btn--primary {
  background-color: green;
  color: white;
}
```

Complexity

Simplicity

Complexity

```
div.main section.content div.categories .title
```

hard to read

way to specific

Complexity

```
div.main section.content div.categories .title
```

the only thing we care about

Complexity

```
div.main section.content div.categories .title
```

conditions add complexity

harms readability

lowers performance

Simplicity

simply give things the name of what they are

choose the level of abstraction for names (be specific or generic)

```
.categories__title
```

Complexity

```
div.main section.content div.categories .title
```

Simplicity

```
.categories
.categories__title
```

Mutability

Immutability

Mutability

```
.btn { font-size: 1em; }

.promo .btn { font-size: 2em; }
```

Contextual styling will result in two different outcomes for one and the same class

Mutability

```
@import ‘nova/lib/scss/components/button’;

.nova-c-button {
  padding: 20px;
}
```

add styles
of third party libraries

Mutability

```
.btn { font-size: 1em; }
.promo .btn { font-size: 2em; }
```

```
@import ‘nova/lib/scss/components/button’;
.nova-c-button {
  padding: 20px;
}
```

Immutability

```
.btn { font-size: 1em; }
.btn--large { font-size: 2em; }
```

```
@import ‘nova/lib/scss/components/button’;
.my-padded-button {
 padding: 20px;
}
```

Deep Nesting

Flat Tree

Deep Nesting

Grand children

```
<div class=“main-menu”>
 <ul class=“main-menu__section”>
  <li class=“main-menu__section__title”>
    Section One
  </li>
  <li class=“main-menu__section__item”>
   <a class=“main-menu__section__item__link” />
  </li>
 </ul>
</div>
```

hard to read

not BEM conform

adds unnecessary complexity

Flat Tree

easy to read

easy to maintain regarding order and nesting depth

```
<div class="main-menu">
 <ul class="main-menu__section">
  <li class="main-menu__title">
    Section One
  </li>
  <li class="main-menu__item">
   <a class="main-menu__link" />
  </li>
 </ul>
</div>
```

Deep Nesting

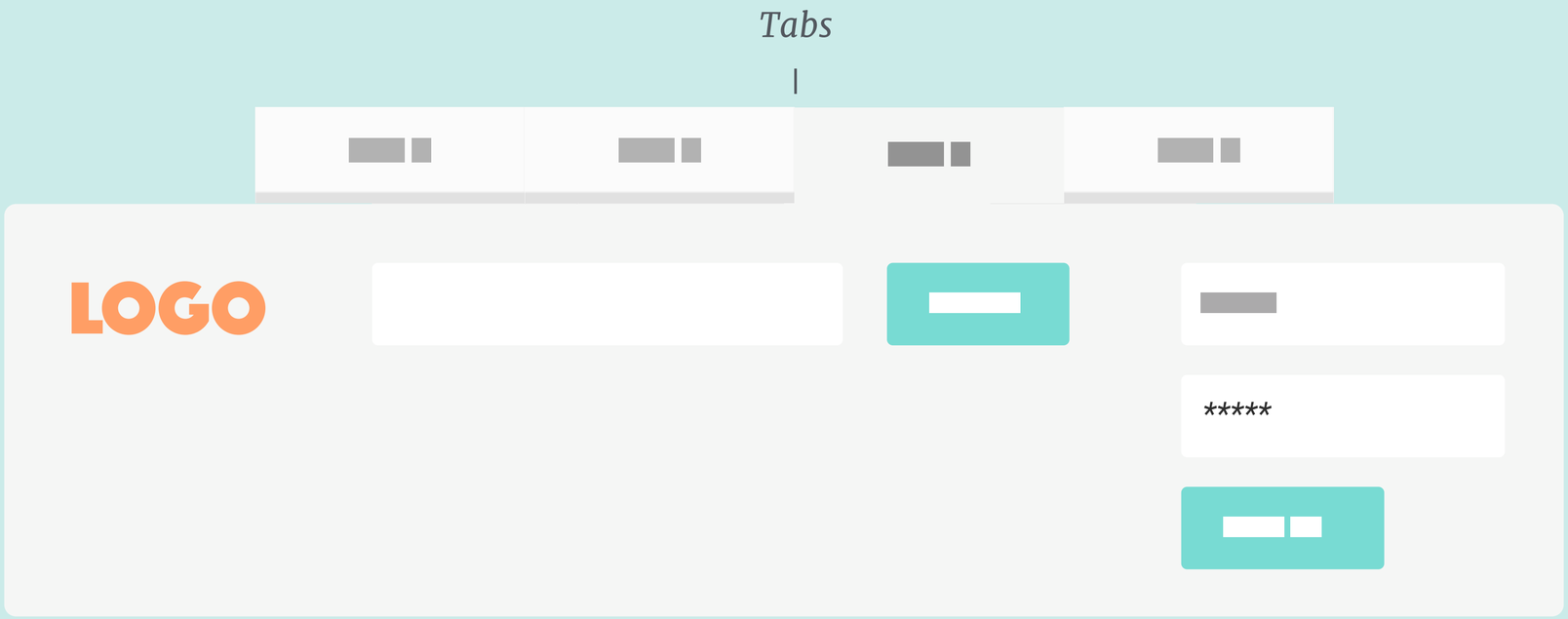
```
<div class=“main-menu”>
 <ul class=“main-menu__section”>
  <li class=“main-menu__section__title”>
    Section One
  </li>
  <li class=“main-menu__section__item”>
   <a class=“main-menu__section__item__link” />
  </li>
 </ul>
</div>
```

Flat Tree

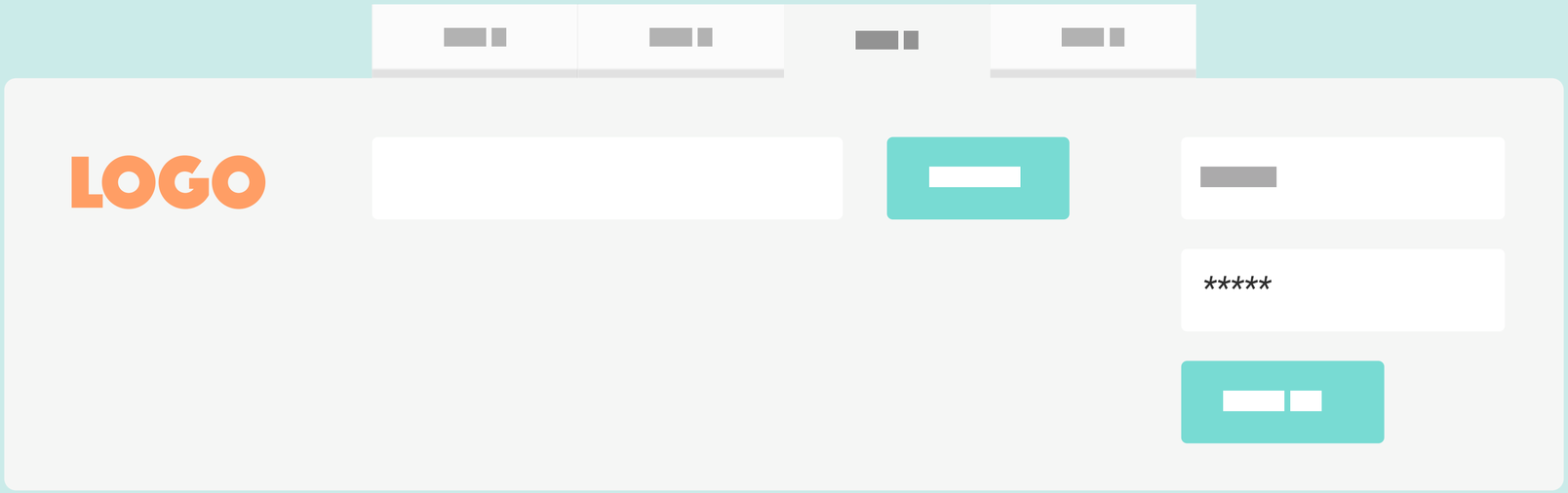
```
<div class=“main-menu”>
 <ul class=“main-menu__section”>
  <li class=“main-menu__title”>
    Section One
  </li>
  <li class=“main-menu__item”>
   <a class=“main-menu__link” />
  </li>
 </ul>
</div>
```

Contextual Styling

Mixes


Tabs
LOGO
*****
Header

Tabs



Header

Cross-Components Mixes

```
<header class="header">
    <nav class=“tabs”>
        ...
    </nav>
</header>
```

Contextual Styling

```
<header class="header">
    <nav class=“tabs”>
      ...
    </nav>
</header>

.tabs {
  font-size: 18px;
}

.header .tabs {
  font-size: 10px;
  position: absolute;
  bottom: 100%;
}
```

not BEM conform

can cause side-effects that are hard to track down

Should be avoided!

Cross-Components Mixes

```
<header class="header">
    <nav class=“tabs”>
        ...
    </nav>
</header>
```

Cross-Components Mixes

```
<header class="header">
    <nav class=“header__tabs tabs”>
        ...
    </nav>
</header>
```

Cross-Components Mixes

```
<header class="header">
    <nav class=“header__tabs tabs”>
        ...
    </nav>
</header>

.tabs {
 font-size: 18px;
}

.header__tabs {
 font-size: 10px;
 position: absoute;
 bottom: 100%
}
```

Cross-Components Mixes

can be used to extend styles

don’t use it to overwrite styles!

```
<header class="header">
    <nav class=“header__tabs tabs”>
        ...
    </nav>
</header>

.tabs {
 font-size: 18px;
}

.header__tabs {
 font-size: 10px;
 position: absolute;
 bottom: 100%
}
```

Cross-Components Mixes

consider to use a modifier

```
<header class="header">
    <nav class=“header__tabs tabs tabs--small”>
        ...
    </nav>
</header>

.tabs {
 font-size: 18px;
}

.tabs--small {
 font-size: 10px;
}

.header__tabs {
 font-size: 10px;
}
```

Cross-Components Mixes

would this be okay?

```
<header class="header">
    <nav class=“header__tabs header__tabs--small tabs”>
        ...
    </nav>
</header>

.tabs {
 font-size: 18px;
}

.header__tabs--small {
 font-size: 10px;
}

~~.header__tabs {~~
 ~~font-size: 10px;~~
~~}~~
```

Layout as part of a Component

Separate Layout from Components

Layout as part of a Component

```
<div class="card">
  <div class="card__body">
    <ul class="card__checklist">
      <li class="card__checklist__item">
        <input class=“card__checklist__input" type="checkbox">
        <label class="card__checklist__label">Apples</label>
      </li>
      <li class="card__checklist__item">
        <input class=“card__checklist__input" type="checkbox">
        <label class="card__checklist__label">Bananas</label>
      </li>
    </ul>
  </div>
</div>
```

Separate Layout from Components

```
<div class="card">
  <div class="card__body">
    <ul class="stack">
      <li class=“stack__item”>
        <input class=“card__checkbox” type="checkbox">
        <label class=“card__label”>Apples</label>
      </li>
      <li class="stack__item">
        <input class=“card__checkbox” type="checkbox">
        <label class=“card__label”>Bananas</label>
      </li>
    </ul>
  </div>
</div>
```

Separate Layout from Components

and reuse of other blocks

```
<div class="card">
  <div class="card__body">
    <ul class="stack">
      <li class=“stack__item”>
        <input class=“checkbox” type="checkbox">
        <label class=“label”>Apples</label>
      </li>
      <li class="stack__item">
        <input class=“checkbox” type="checkbox">
        <label class=“label”>Bananas</label>
      </li>
    </ul>
  </div>
</div>
```