<labmm2></labmm2>

<section>

ua.deca.ntc.2018.2019.t16

</section>

<footer>

helder caixinha | caixinha@ua.pt

</footer>

BOOTSTRAP

Front-end framework (gratuita e open-source)

HTML + CSS + JavaScript (extensões – Popper e jQuery Plugins)

Da autoria de Mark Otto, Jacob Thornton
Inicialmente sob o nome de Twitter Blueprint (para uso interno),
foi lançada mundialmente em Agosto de 2011 como Bootstrap

Simplifica esse desenvolvimento de interfaces

Bootstrap 4 lançado em 18 de Janeiro de 2018

Esta versão trouxe, entre outras novidades, o suporte ao Flexbox

Baseia-se num Mobile First Responsive Grid Layout

Disponibiliza componentes → HTML + CSS + Interatividade em JavaScript

UTILIZAÇÃO DO BOOTSTRAP

Existem duas formas de utilizar o Bootstrap nos nossos projetos
https://getbootstrap.com/docs/4.3/getting-started/download/

1) Compiled CSS and JS

Download ready-to-use compiled code for **Bootstrap v4.3.1** to easily drop into your project, which includes:

- Compiled and minified CSS bundles (see CSS files comparison)
- Compiled and minified JavaScript plugins

This doesn't include documentation, source files, or any optional JavaScript dependencies (jQuery and Popper.js).

Download

bS4_template.html

2) Via Content Delivery Network (CDN) → Colocar código no HEAD da página

BootstrapCDN

Skip the download with BootstrapCDN to deliver cached version of Bootstrap's compiled CSS and JS to your project.

```
<link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css" integrity="sha384-ggOyR0iXCbMQv3Xipma34MD+dH/1f
<script src="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/js/bootstrap.min.js" integrity="sha384-JjSmVgyd0p3pXB1rRibZUAYoIIy6OrQ6VrjIEaFf/nJGzIx
```

If you're using our compiled JavaScript, don't forget to include CDN versions of jQuery and Popper.js before it.

```
<script src="https://code.jquery.com/jquery-3.3.1.slim.min.js" integrity="sha384-q8i/X+965DzO0rT7abK41JStQIAqVgRVzpbzo5smXKp4YfRvH+8abtTE1Pi6jizo"
<script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.7/umd/popper.min.js" integrity="sha384-UO2eT0CpHqdSJQ6hJty5KVphtPhzWj9WO1clHTMGa3JD
```

UTILIZAÇÃO DO BOOTSTRAP

2) Via Content Delivery Network (CDN) → Colocar código no HEAD da página

```
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">

<script src="https://code.jquery.com/jquery-3.3.1.slim.min.js" integrity="sha384-
q8i/X+965DzO0rT7abK41JStQIAqVgRVzpbzo5smXKp4YfRvH+8abtTE1Pi6jizo" crossorigin="anonymous"></script>

<script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.7/umd/popper.min.js" integrity="sha384-
UO2eT0CpHqdSJQ6hJty5KVphtPhzWj9WO1clHTMGa3JDZwrnQq4sF86dIHNDz0W1" crossorigin="anonymous"></script>


<link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css"
integrity="sha384-ggOyR0iXCbMQv3Xipma34MD+dH/1fQ784/j6cY/iJTQUOhcWr7x9JvoRxT2MZw1T"
crossorigin="anonymous">

<script src="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/js/bootstrap.min.js" integrity="sha384-
JjSmVgyd0p3pXB1rRibZUAYoIIy6OrQ6VrjIEaFf/nJGzIxFDsf4x0xIM+B07jRM" crossorigin="anonymous"></script>

   <link rel="stylesheet" type="text/css" href="meus_estilos.css">

</head>
```

CSS Resets

Atualmente a **multiplicidade** de **browsers** e **plataformas** colocam **desafios acrescidos** a quem desenvolve páginas Web (HTML+CSS)

Alguns desses desafios traduzem-se em **formas distintas** de **visualização** das páginas nos browsers

Developers criaram estratégias que procuram **uniformizar essa visualização**, **minimizando** as diferenças existentes → CSS Resets

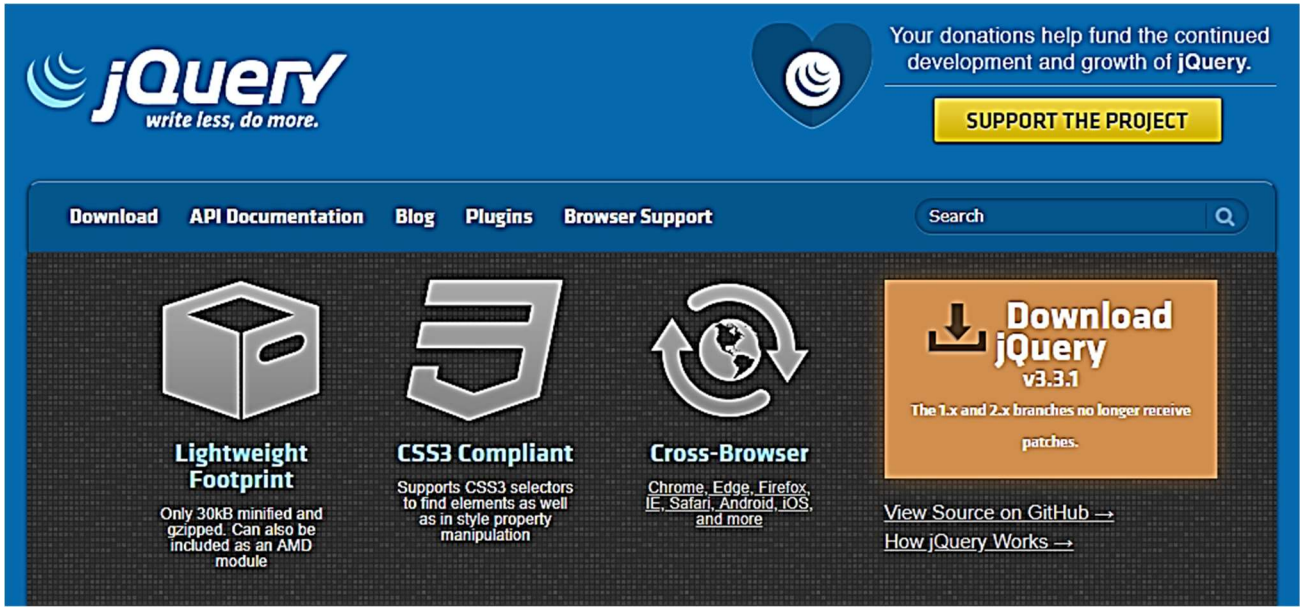
Normalize.css (https://necolas.github.io/normalize.css/) → Muito popular. Anteriormente integrava o Bootstrap

Reboot (https://getbootstrap.com/docs/4.3/content/reboot/) → Desenvolvido a partir do Normalize.css, é hoje um dos componentes do Bootstrap 4.0

> *"Reboot, a collection of element-specific CSS changes in a single file, kickstart Bootstrap to provide an elegant, consistent, and simple baseline to build upon."*

JQUERY E POPPER

https://jquery.com

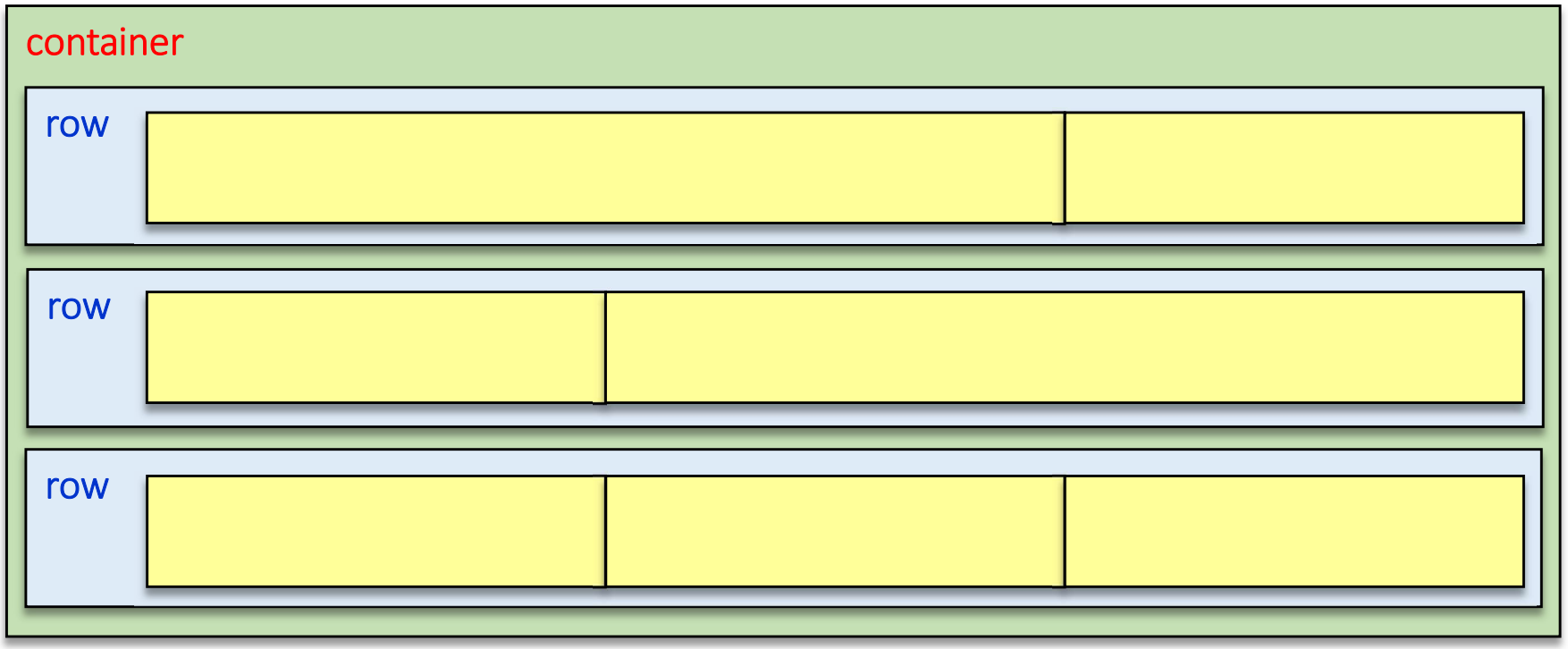


https://popper.js.org

dropdowns, popovers and tooltips

BOOTSTRAP – GRID SYSTEM

Mobile First Responsive Grid Layout baseado no flexbox, organizado em 12 colunas



Dispositivos (media queries) e respetivas classes

Extra small	Small	Medium	Large	Extra large
<576px	≥576px	≥768px	≥992px	≥1200px
.col-	.col-sm-	.col-md-	.col-lg-	.col-xl-

BOOTSTRAP – GRID SYSTEM

```
<main class="container">

  <section class="row">
     <article class="col-sm-2">2</article>
     <article class="col-sm-10">10</article>
  </section>

  <section class="row">
     <article class="col-sm">6</article>
     <article class="col-sm">6</article>
     <article class="col-sm-12">12</article>
  </section>

</main>
```

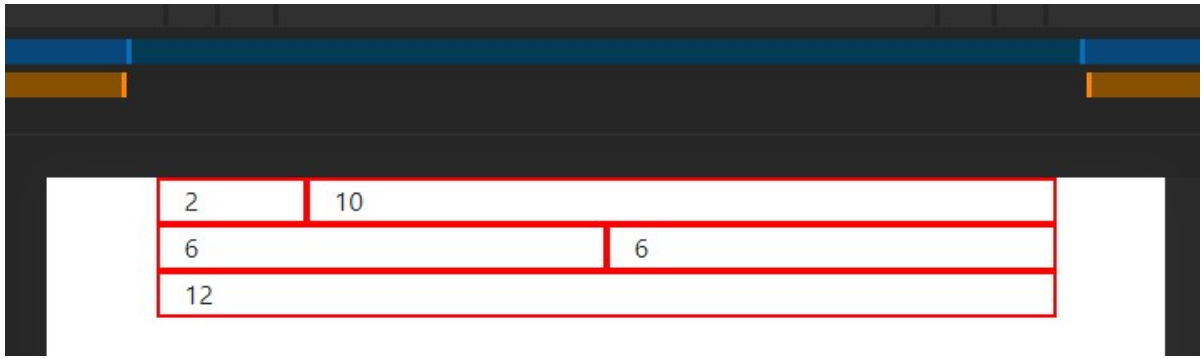
.container → centra contentor (max-width ocupada dependerá da media query ativa)

.row → contentor de cada linha do layout

.col-sm-x → caixa ocupará x colunas num dispositivo small. O x poderá ser omitido quando se pretende caixas com larguras idênticas (dividem linha em partes iguais)

.col → omitindo o prefixo do dispositivo e o x fará com que essas caixas ocupem larguras idênticas (dividem linha em partes iguais). E essa distribuição será constante em todos os tamanhos de dispositivos

Sempre que numa row são ocupadas mais de 12 colunas existe um wrap automático

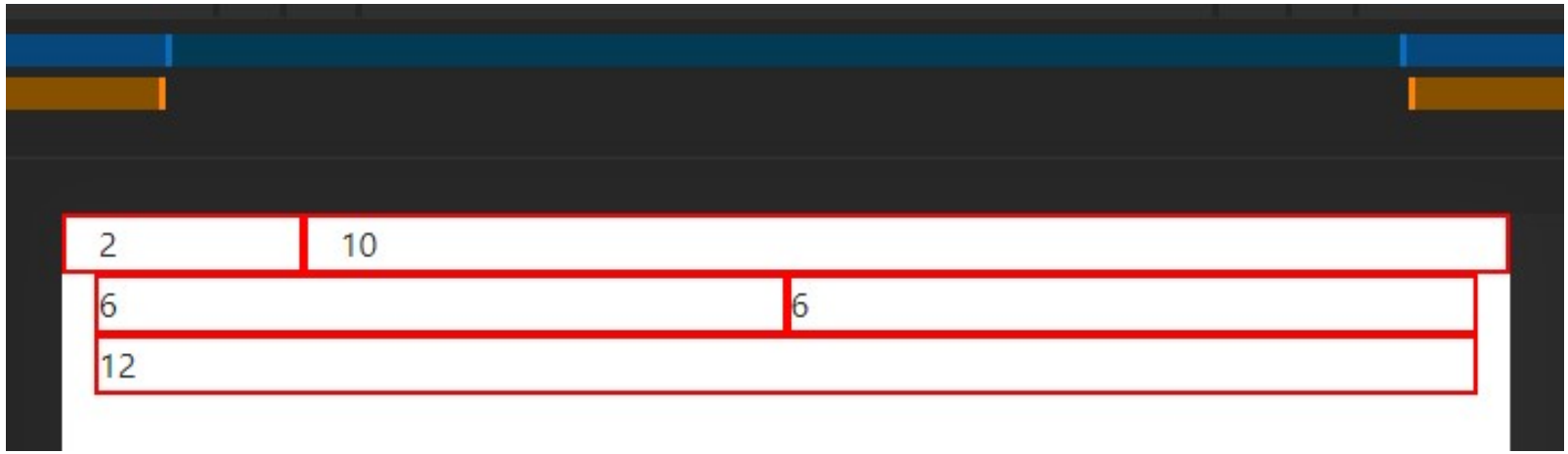


BOOTSTRAP – GRID SYSTEM

```
<main class="container-fluid">

  <section class="row">
      <article class="col-sm-2">2</article>
      <article class="col-sm-10">10</article>
   </section>

   <section class="row no-gutters">
     <article class="col-sm">6</article>
     <article class="col-sm">6</article>
     <article class="col-sm-12">12</article>
   </section>

</main>
```

.container-fluid → contentor ocupará toda o width disponível (100%)

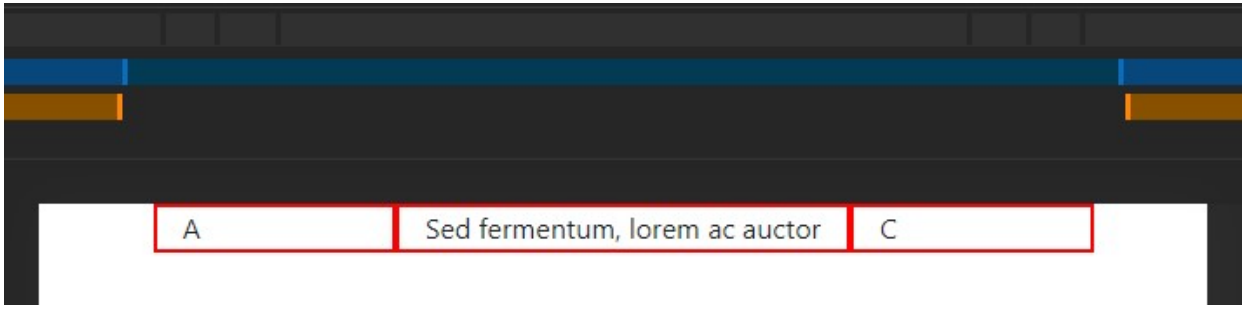
.no-gutters → remove margins nas rows & paddings nas colunas

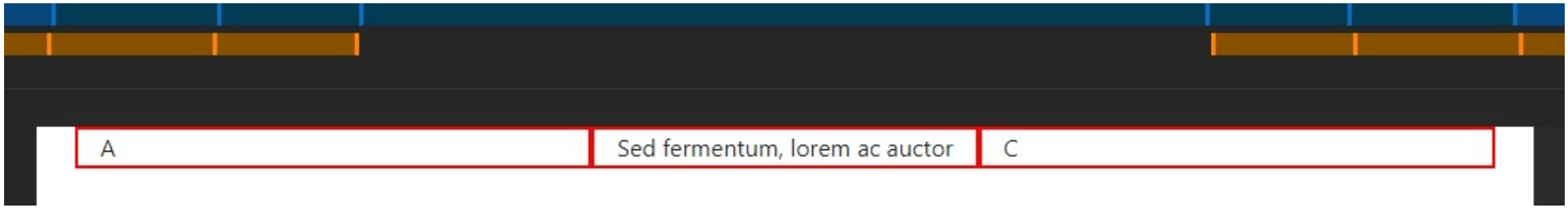


BOOTSTRAP – GRID SYSTEM

```
<main class="container">
    <section class="row">
      <article class="col">A</article>
      <article class="col-sm-auto">Sed fermentum, lorem ac auctor</article>
      <article class="col">C</article>
   </section>
</main>
```

.col-prefixo-auto → a largura ocupada pela caixa (num ecrã do tipo indicado pelo prefixo), dependerá do conteúdo aí existente

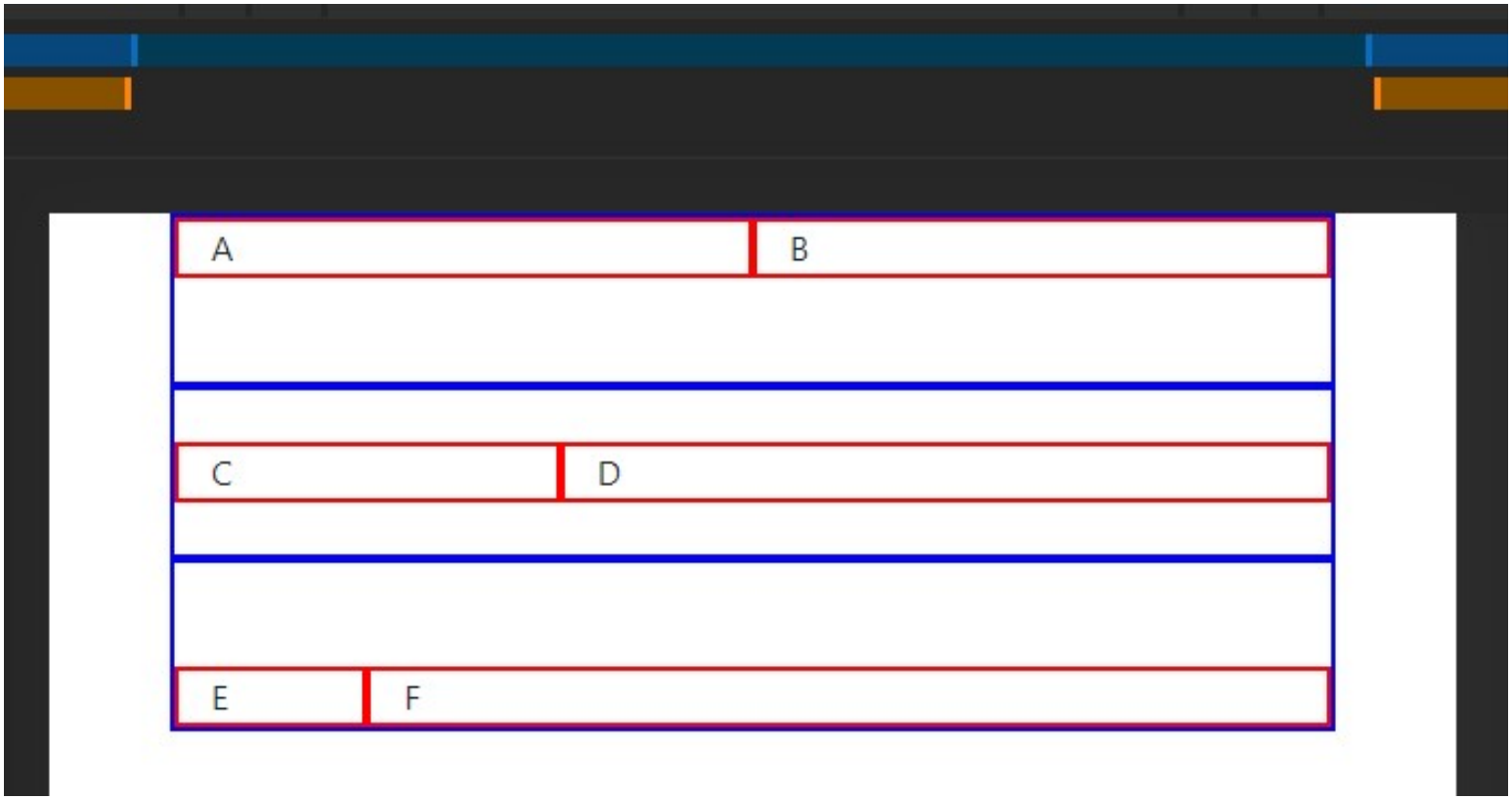




BOOTSTRAP – GRID SYSTEM

<section class="row align-items-start"> → (itens da linha alinhados verticalmente no topo)
<section class="row align-items-center"> → (itens da linha alinhados verticalmente no centro)
<section class="row align-items-end"> → (itens da linha alinhados verticalmente no fundo)

```
.row {
  height: 5rem;
  border: 2px solid blue;
    }
```



BOOTSTRAP – GRID SYSTEM

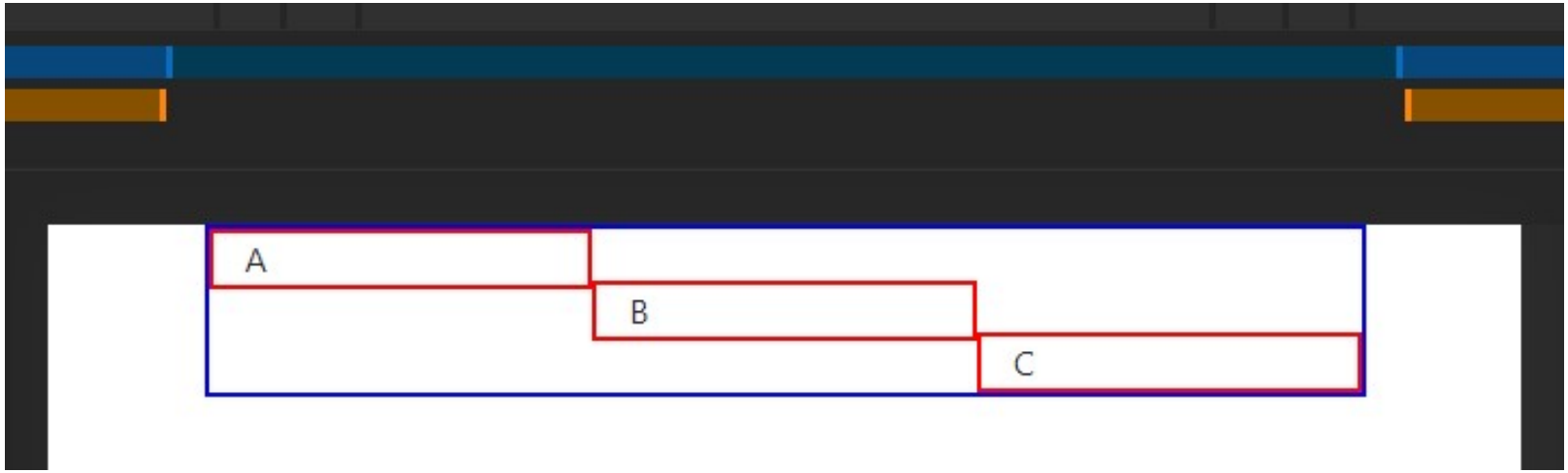
```
.row {
  height: 5rem;
  border: 2px solid blue;
    }
```

Alinhamento vertical de cada item numa row

<article class="col align-self-start">A</article> → (item da linha alinhado verticalmente no topo)

<article class="col align-self-center">B</article> → (item da linha alinhado verticalmente no centro)

<article class="col align-self-end">C</article> → (item da linha alinhado verticalmente no fundo)



BOOTSTRAP – GRID SYSTEM

```
<section class="row justify-content-start">
      <article class="col-3">START</article>
      <article class="col-5">START</article>
</section>

<section class="row justify-content-center">
      <article class="col-3">CENTER</article>
      <article class="col-5">CENTER</article>
</section>

<section class="row justify-content-end">
      <article class="col-3">END</article>
      <article class="col-5">END</article>
</section>
```

Neste exemplo em cada linha não são ocupadas as 12 colunas
Assim haverá espaço para o alinhamento horizontal dos itens dentro das linhas