CSS Flexbox

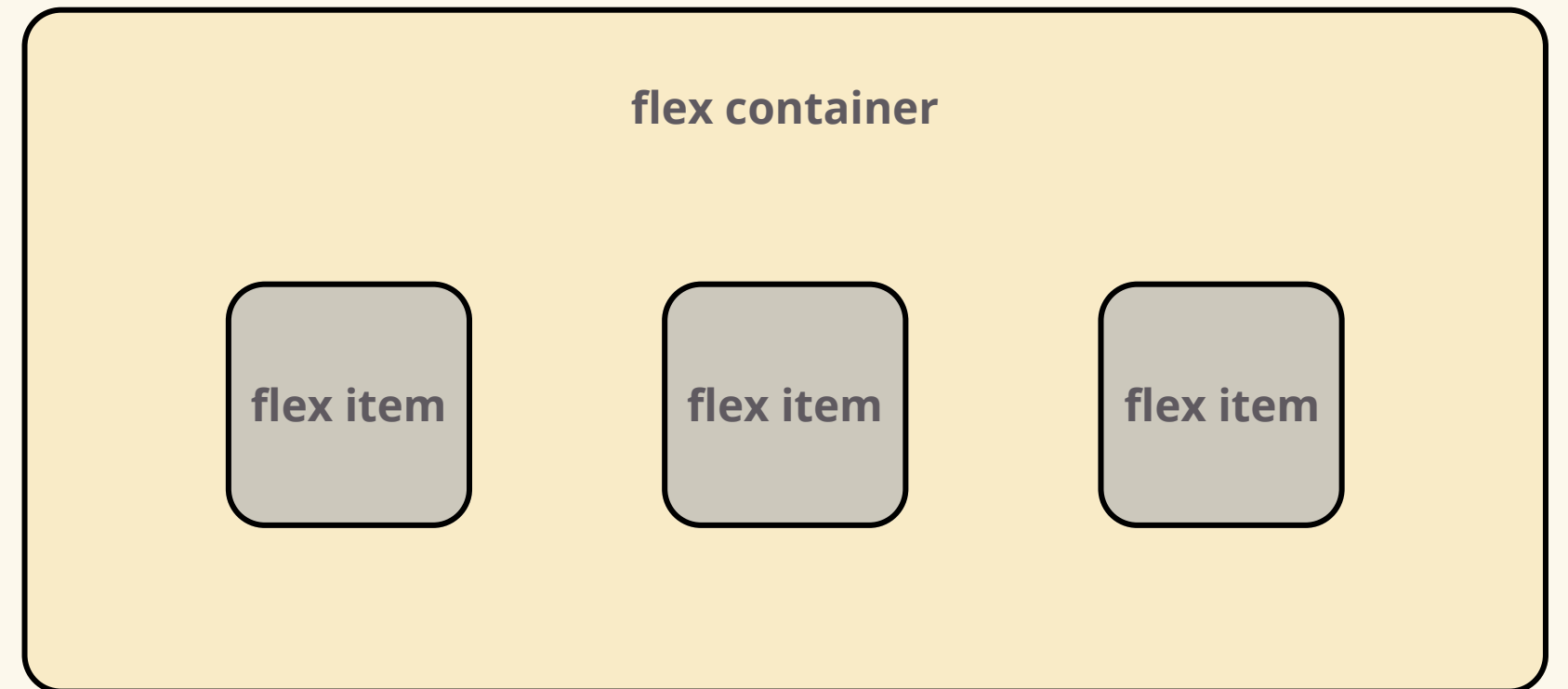Stefano Cherio and Nicolò Galizia

WHAT IS FLEXBOX?

- **Flexbox** (Flexible Box Layout) is a CSS layout model which allows to **place and align items inside a flexible container**.

- Organizes items along a primary and secondary axis, **automatically scaling object sizes based on available space**.

- It manages the **alignment**, **spacing** and **scaling** of elements, improving the responsiveness of web interfaces.

Code:

```
selector {
    display: flex;
}
```
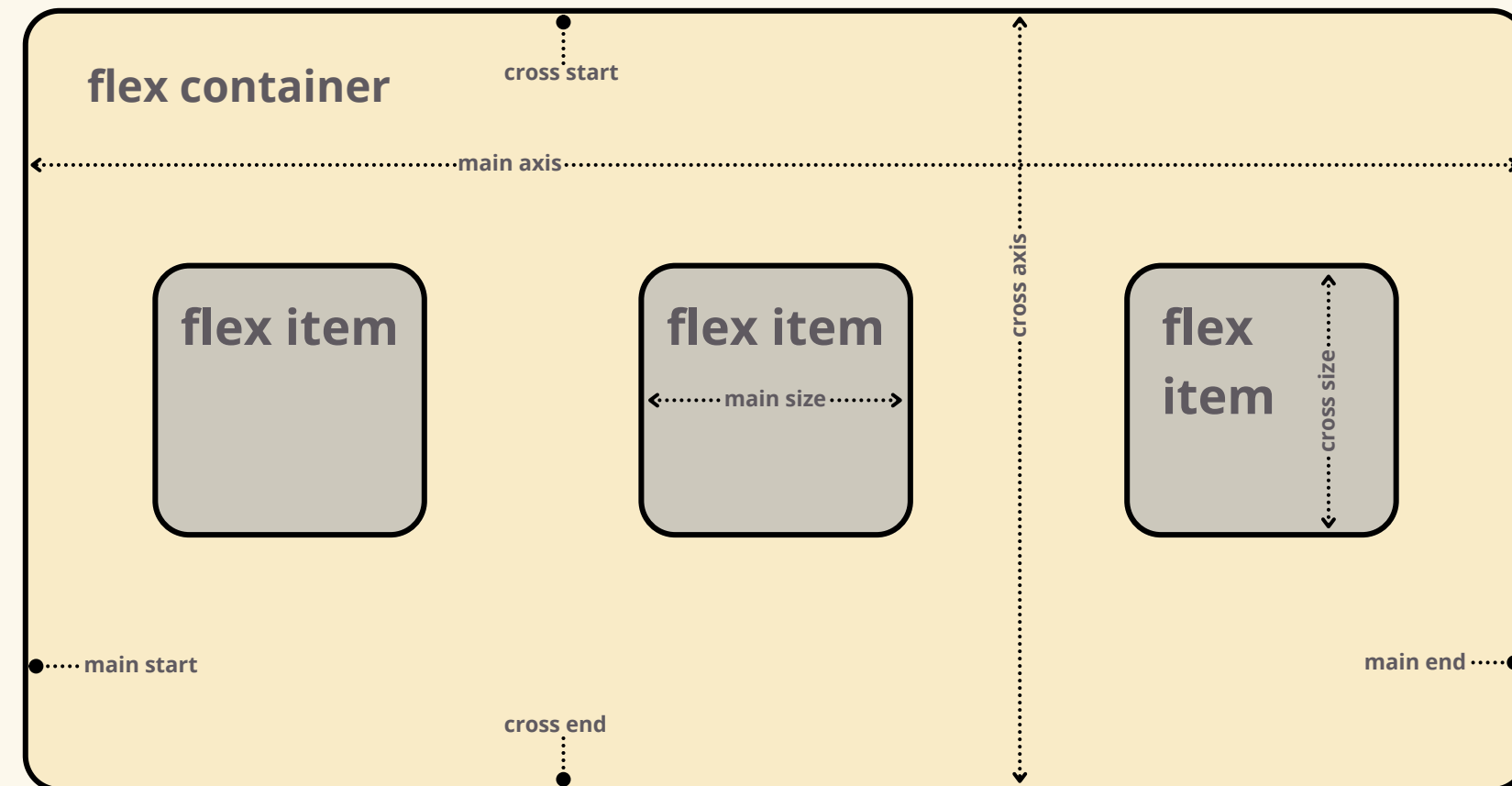
THE FLEX MODEL

- The parent element that has `display: flex` set on it is called the **flex container**

- The items laid out as flexible boxes inside the flex container are called **flex items**.

flex container

flex item   flex item   flex item

THE FLEX MODEL

- The **main axis** is the axis running in the direction the flex items are laid out in. The start and end of this axis are called the **main start** and **main end**. The length from the main-start edge to the main-end edge **is the main size**.

- The **cross axis** is the axis running perpendicular to the direction the flex items are laid out in. The start and end of this axis are called the **cross start** and **cross end**. The length from the cross-start edge to the cross-end edge is the **cross size**.

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CSS FLEXBOX

- **FLEX CONTAINER**

- **FLEX ITEMS**

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FLEX CONTAINER

FLEX-DIRECTION

FLEX-WRAP

FLEX-FLOW

JUSTIFY-CONTENT

ALIGN-ITEMS

ALIGN-CONTENT

```
.container {
  display: flex;
  flex-direction: row/row-reverse/column/column-reverse;
}
```

row - flex items from left to right

row-reverse - flex items from right to left

column - flex items from top to bottom

column-reverse - flex items from bottom to top

FLEX-DIRECTION

FLEX-WRAP

FLEX-FLOW

JUSTIFY-CONTENT

ALIGN-ITEMS

ALIGN-CONTENT

```
.container {
  display: flex;
  flex-wrap: wrap/nowrap/wrap-reverse;
}
```

nowrap - default value. Specifies that the flexible items will not wrap

wrap - specifies that the flexible items will wrap if necessary

wrap-reverse - specifies that the flexible items will wrap, if necessary, in reverse order

FLEX-DIRECTION

FLEX-WRAP

FLEX-FLOW

JUSTIFY-CONTENT

ALIGN-ITEMS

ALIGN-CONTENT

```css
.container {
  display: flex;
  flex-flow: propriety-flex-direction propriety-flex-wrap
}
```

The flex-flow property is a shorthand property for **flex-direction** and flex-wrap.

FLEX-DIRECTION

FLEX-WRAP

FLEX-FLOW

JUSTIFY-CONTENT

ALIGN-ITEMS

ALIGN-CONTENT

```css
.container {
  display: flex;
  justify-content: flex-start/flex-end/center/space-between/
  space-around/space-evenly;
}
```

The **justify-content** property defines how the browser distributes space between and around content items along the main axis.

flex-start - aligns the items to the start of the main axis

flex-end - aligns the items to the end of the main axis

center - aligns the items to the center of the main axis

FLEX-DIRECTION

FLEX-WRAP

FLEX-FLOW

JUSTIFY-CONTENT

ALIGN-ITEMS

ALIGN-CONTENT

space-between - items are evenly distributed along the main axis. The spacing between each pair of adjacent items is the same. The first item is flush with the main-start edge, and the last item is flush with the main-end edge.

space-around - items are evenly distributed along the main axis. The spacing between each pair of adjacent items is the same. The empty space before the first and after the last item equals half of the space between each pair of adjacent items. If there is only one item, it will be centered.

space-evenly - items are evenly distributed along the main axis. The spacing between each pair of adjacent items, the main-start edge and the first item, and the main-end edge and the last item, are all exactly the same.

FLEX-DIRECTION

FLEX-WRAP

FLEX-FLOW

JUSTIFY-CONTENT

ALIGN-ITEMS

ALIGN-CONTENT

```css
.container {
  display: flex;
  align-items: flex-start/flex-end/center/stretch/baseline;
}
```

The **align-items** property sets the align-self value on all direct children as a group. In flexbox, it controls the alignment of items on the cross axis.

flex-start - aligns the items to the start of the cross axis

flex-end - aligns the items to the end of the cross axis

center - aligns the items to the center of the cross axis

stretch - items stretch to fill the container in cross axis

baseline - items are aligned such as their baselines align

FLEX-DIRECTION

FLEX-WRAP

FLEX-FLOW

JUSTIFY-CONTENT

ALIGN-ITEMS

ALIGN-CONTENT

```
.container {
  display: flex;
  align-content: flex-start/flex-end/center/stretch/
  space-between/space-around;
}
```

The **align-content** property sets the distribution of space between and around content items along the cross axis (similar to justify-content, but with the cross axis).

FLEX ITEMS

ORDER

FLEX-GROW

FLEX-SHRINK

FLEX-BASIS

FLEX

ALIGN-SELF

```
.container {
  display: flex;
}
```

```
#item1 {          #item2 {          #item3 {
  order: 2;          order: 1;          order: 3;
}                 }                 }
```

The **order** property specifies the order of the flex items.

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ORDER

FLEX-GROW

FLEX-SHRINK

FLEX-BASIS

FLEX

ALIGN-SELF

```css
.container {
  display: flex;
}
```

```css
#item1 {            #item2 {            #item3 {
  flex-grow: 1;       flex-grow: 3;       flex-grow: 1;
}                   }                   }
```

The **flex-grow** property specifies how much the item will grow relative to the rest of the flexible items inside the same container.

ORDER

FLEX-GROW

FLEX-SHRINK

FLEX-BASIS

FLEX

ALIGN-SELF

```css
.container {
  display: flex;
}


#item2 {
  flex-shrink: 3;
}
```

The **flex-shrink** property specifies how the item will shrink relative to the rest of the flexible items inside the same container.

ORDER

FLEX-GROW

FLEX-SHRINK

FLEX-BASIS

FLEX

ALIGN-SELF

```css
.container {
  display: flex;
}


#item2 {
  flex-basis: 200px;
}
```

The **flex-basis** property specifies the initial length of a flexible item.

ORDER

FLEX-GROW

FLEX-SHRINK

FLEX-BASIS

FLEX

ALIGN-SELF

```css
.container {
  display: flex;
}


#item2 {
  flex: 2 0 auto;
}
```

The **flex** property is a shorthand property for: **flex-grow**, **flex-shrink**, **flex-basis**.

ORDER

FLEX-GROW

FLEX-SHRINK

FLEX-BASIS

FLEX

ALIGN-SELF

```
.container {
  display: flex;
}


#item2 {
  align-self: center;
}
```

The **align-self** property specifies the alignment in the block direction for the selected item inside a flexbox container.

ORDER

FLEX-GROW

FLEX-SHRINK

FLEX-BASIS

FLEX

ALIGN-SELF

auto - default. The element inherits its parent container's align-items property, or "stretch" if it has no parent container

stretch - the element is positioned to fit the container

center - the element is positioned at the center of the container

flex-start - the element is positioned at the beginning of the container

flex-end - the element is positioned at the end of the container

baseline - the element is positioned at the baseline of the container

ANY QUESTIONS?

SOURCES:

MDN
W3SCHOOLS