# CSS Layout - Flexbox

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# Table of Contents

- Flexbox
- Properties for the Container
- Properties for the Children

# Have a Question?

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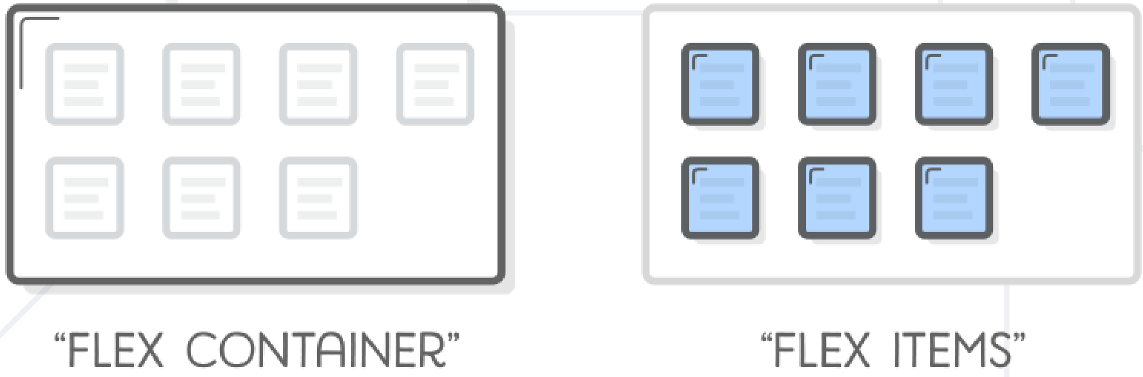
#html-css

# Flexbox

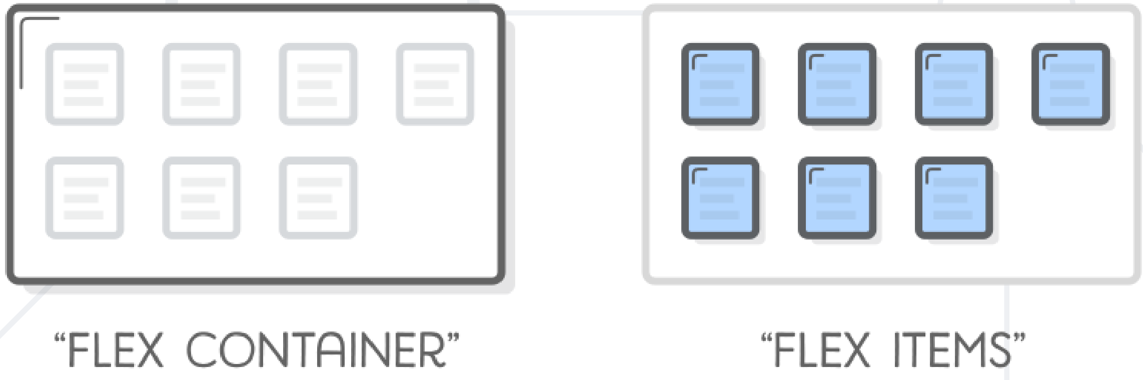
# What is Flexbox?

- The Flexible Box Module, usually referred to as flexbox, was designed as a one-dimensional layout model, and as a method that could offer space distribution between items in an interface and powerful alignment capabilities.
- https://developer.mozilla.org/en-US/docs/Learn/CSS/CSS_layout/Flexbox



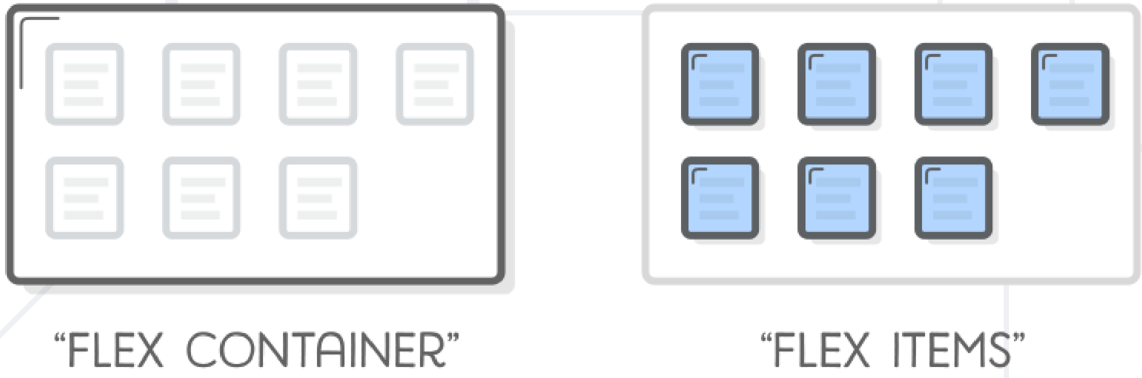
# Why Flexbox?

- For a long time, the only reliable cross browser-compatible tools available for creating CSS layouts were things like floats and positioning. These are fine and they work, but in some ways, they are also rather limiting and frustrating.
- Flexbox can be look at as a logical system to arrange boxes in 2 dimensions. There are many places where an understanding of the ideas of Flexbox will be very useful.

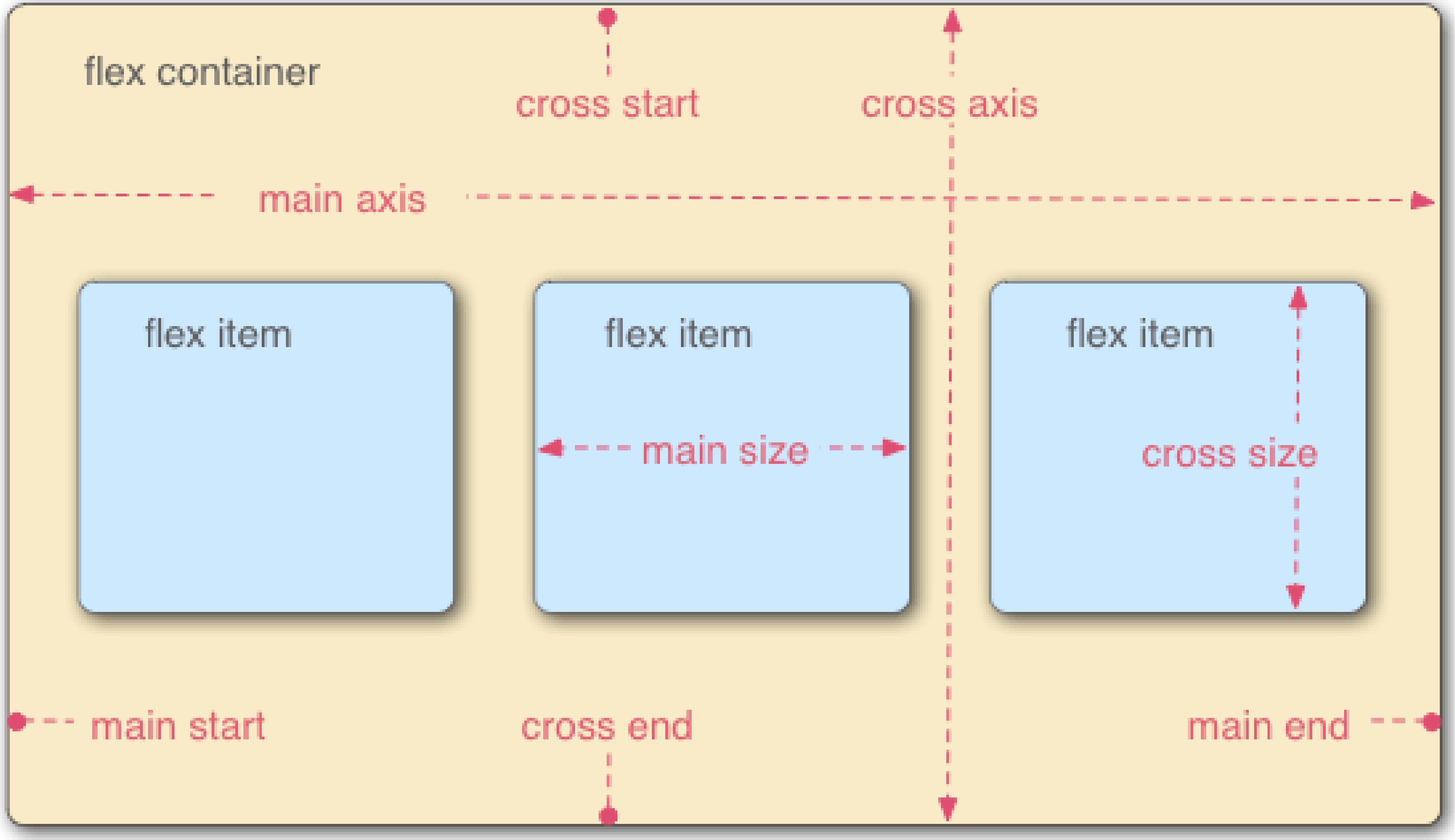


# The Flex Model

- For elements to be laid out as flexible boxes we set a special value of display on the parent element of the elements you want to affect. This causes the element to become a ***flex container*** and its children to become ***flex items***.
- When elements are laid out as flex items, they are laid out along two axes:



# The Flex Model



# Flexbox properties

- Complexity and the value of reference
  - The entire specification with all possible properties that are related to flexbox can be overwhelming, especially in the beginning. Don't try to learn and remember everything. Try to understand the basic concepts – the properties will be learned through exercise and repetition.
  - https://css-tricks.com/snippets/css/a-guide-to-flexbox/

# Flexbox properties

- Container and Item properties
  - We can separate the collection of properties related to Flexbox in to two main categories. Properties that are applied to the Flex container and properties applied to the Flex items.

# Flexbox properties – Flex Container

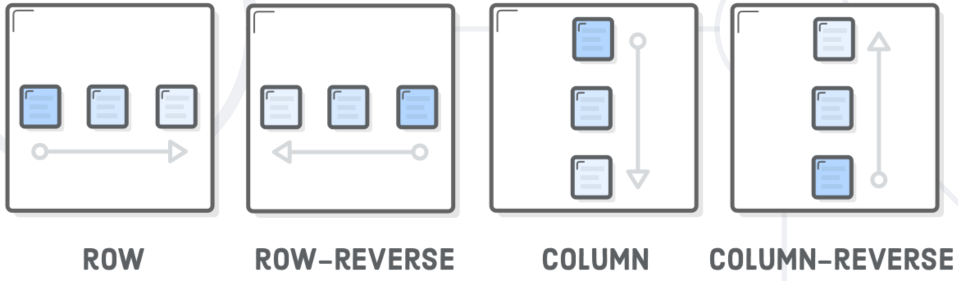
- **display: flex;**
  - We set a value of 'flex' to the display property on the parent element of the elements you want to affect.

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

# Flexbox properties – Flex Container

- Columns or rows? - **flex-direction**
  - Flexbox provides a property called flex-direction that specifies which direction the main axis runs (which direction the flexbox children are laid out in). By default, this is set to row, which causes them to be laid out in a row in the direction your browser's default language works in.

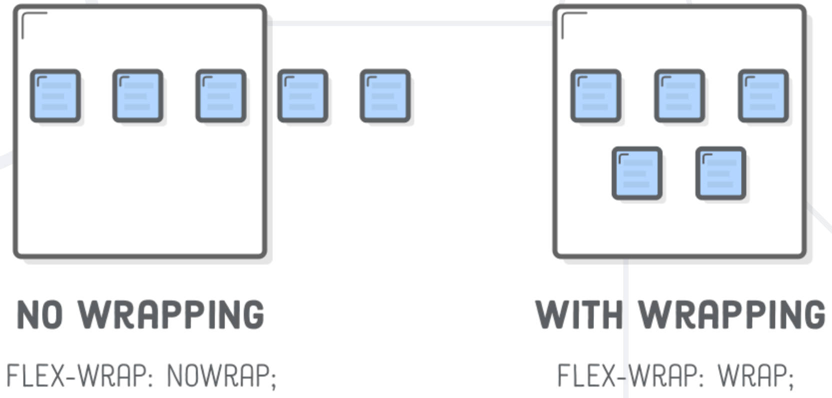
```
.box {
  flex-direction: row;
}
```



# Flexbox properties – Flex Container

- Wrapping - **flex-wrap**
  - One issue that arises when you have a fixed width or height in your layout is that eventually your flexbox children will overflow their container, breaking the layout.

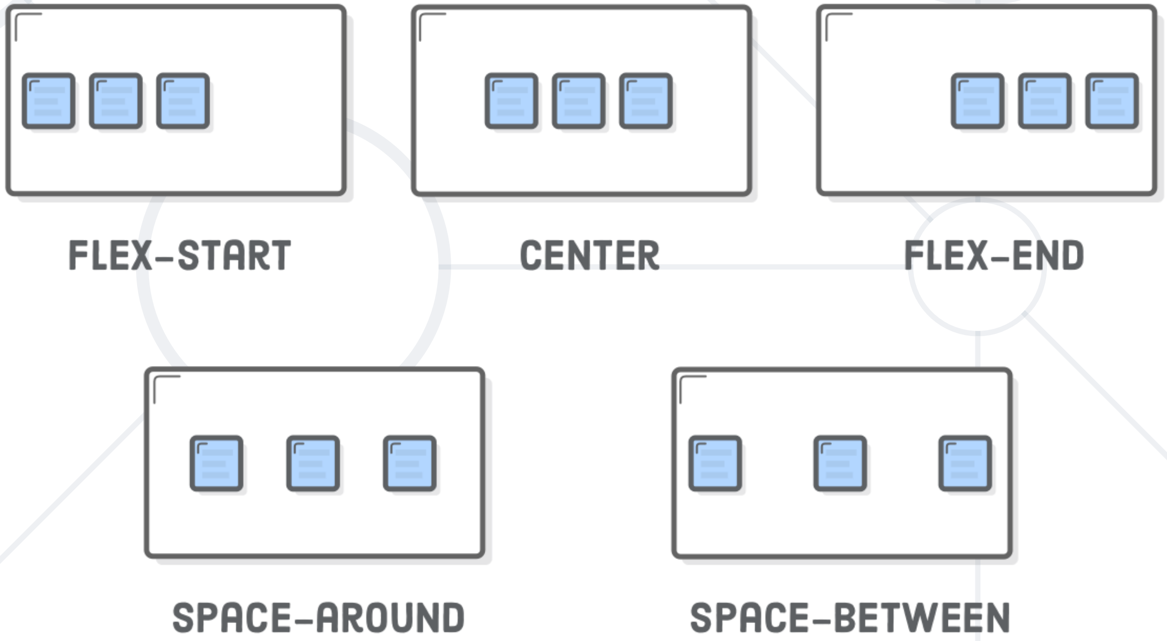
```
.box {
  flex-wrap: wrap;
}
```



# Flexbox properties – Flex Container

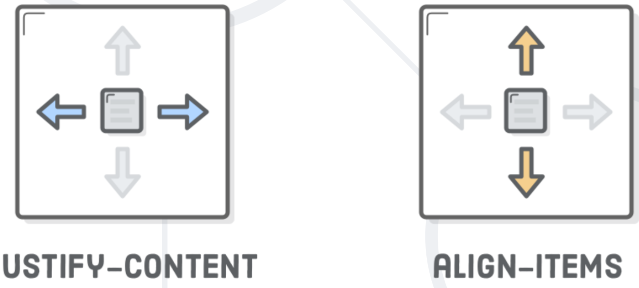
- Horizontal alignment- **justify-content**
  - Defines how the browser distributes space between and around content items along the main-axis of a flex container, and the inline axis of a grid container.

```
.box {
  justify-content: center;
}
```

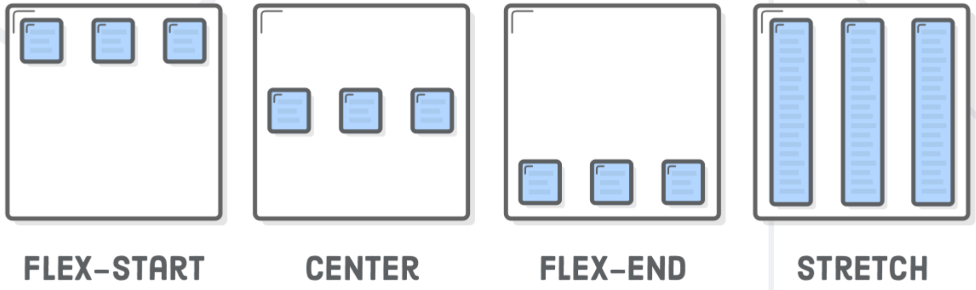


# Flexbox properties – Flex Container

- Horizontal alignment- **align-items**
  - sets the align-self value on all direct children as a group. In Flexbox, it controls the alignment of items on the Cross Axis.



```
.box {
  align-items: stretch;
}
```



# Flexbox properties – Flex Container

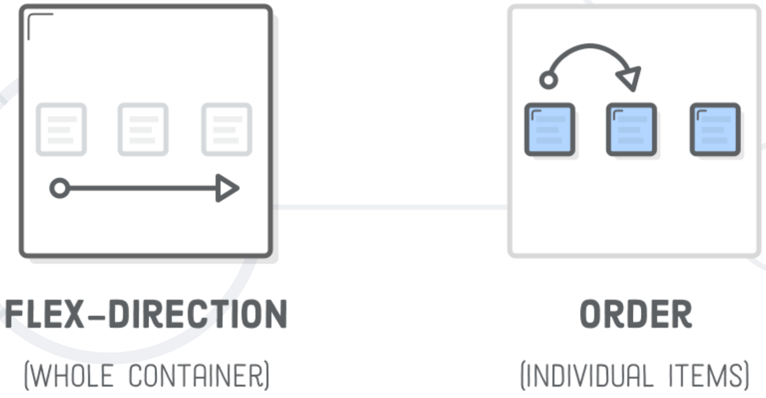
- Spacing - **gap**
  - Sets the gaps (gutters) between rows and columns.

```
.box {
  gap: 2em;
}
```

# Flexbox properties – Flex Item

- Ordering flex items - **order**
  - Sets the order to lay out an item in a flex container. Items in a container are sorted by ascending order value and then by their source code order.

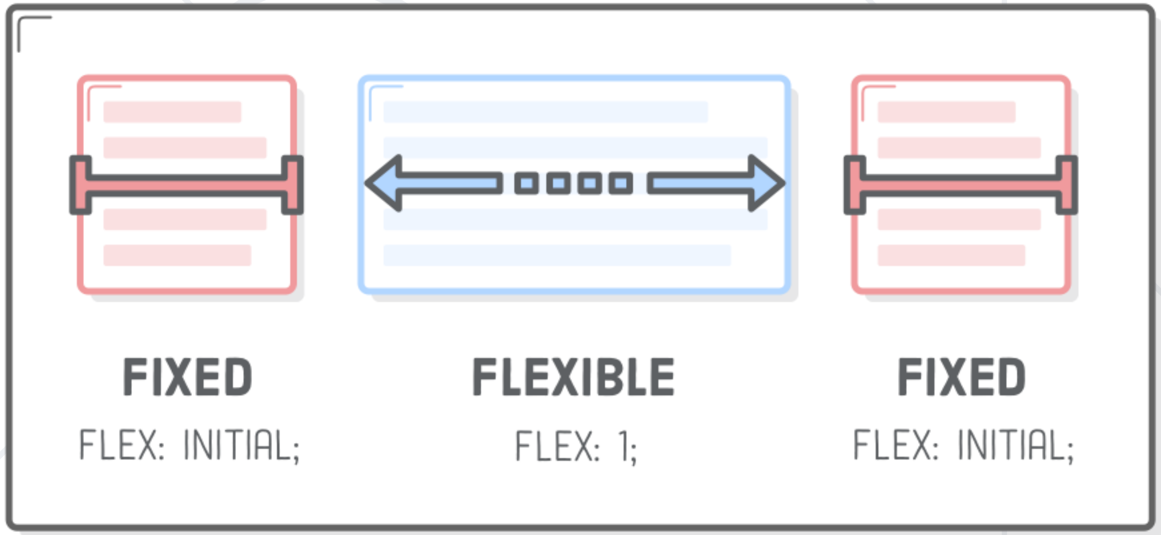
```
.box {
  order: 1;
}
```



# Flexbox properties – Flex Item

- Flexible sizing of flex items – **flex-grow**
  - Sets the flex grow factor, which specifies how much of the flex container's remaining space should be assigned to the flex item's main size

```
.box {
  flex-grow: 1;
}
```



# Flexbox properties – Flex Item

- Flexible sizing of flex items – **flex-shrink**
  - Sets the flex shrink factor of a flex item. If the size of all flex items is larger than the flex container, items shrink to fit according to flex-shrink.

```
.box {
  flex-shrink: 1;
}
```

# Flexbox properties – Flex Item

- Flexible sizing of flex items – **flex-basis**
  - Sets the initial main size of a flex item. It sets the size of the content box unless otherwise set with box-sizing.

```
.box {
  flex-basis: 20em;
}
```

# Flexbox - Let's try it ...

Demo

# Resources

- https://developer.mozilla.org/en-US/docs/Learn/CSS/CSS_layout/Flexbox
- https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Flexible_Box_Layout/Basic_Concepts_of_Flexbox
- https://css-tricks.com/snippets/css/a-guide-to-flexbox/
- https://www.youtube.com/watch?v=hs3piaN4b5I
- https://www.flexboxgame.com/

# Summary

- Flexbox
- Properties for the Container
- Properties for the Children

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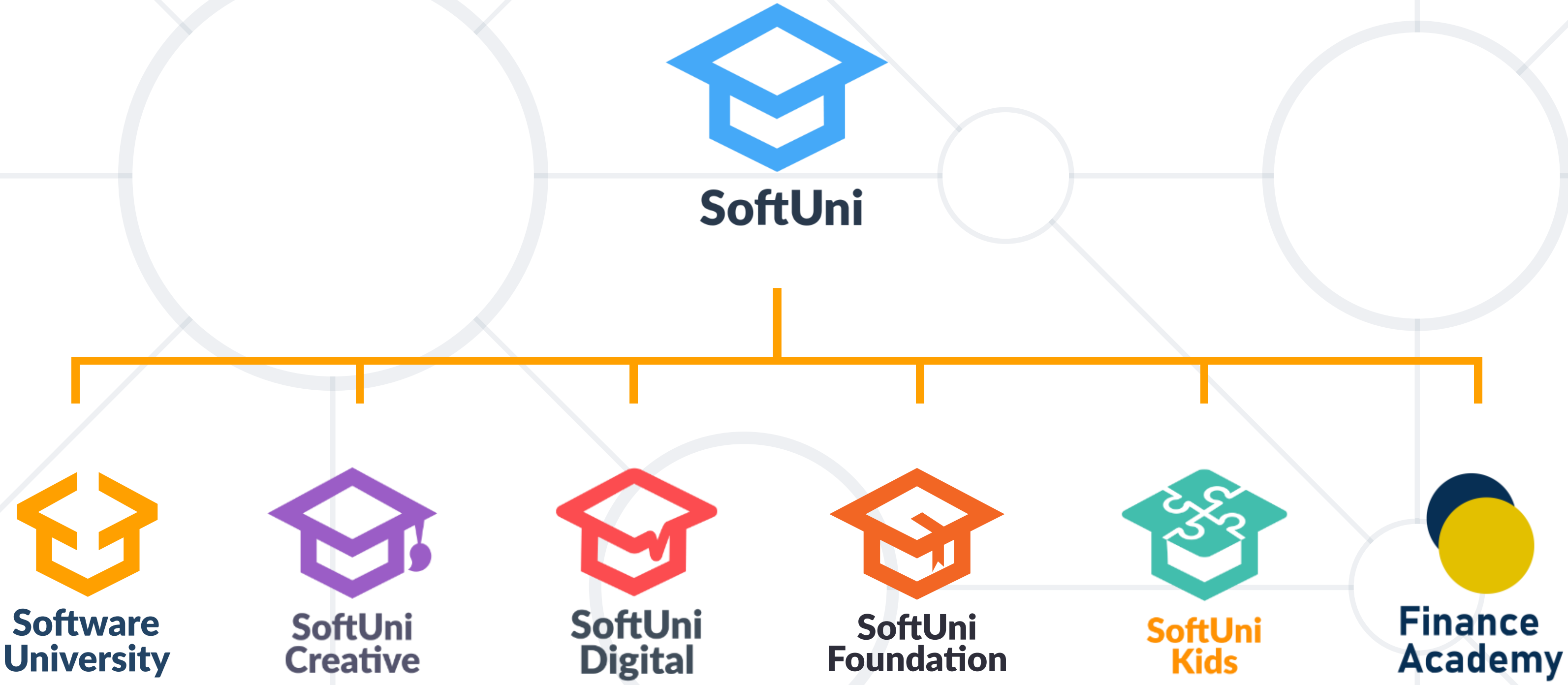
# Questions?



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