

## <!-- ! Flex -->

### Definition:

- Flexbox is a CSS layout model that allows you to design a flexible and responsive layout structure without using positioning.

### Key Concepts:

- **Flex Container:** The parent element where `display: flex;` is applied.
- **Flex Items:** The direct children of a flex container.

### Flex Container Properties:

#### 1. `display: flex;`

- Defines a flex container, enabling flex context for all its direct children.

- Example: `display: flex;`

#### 2. `flex-direction:`

- Specifies the direction of the flex items in the flex container.
- Values:
  - `row`: Default, items arranged horizontally (left to right).
  - `row-reverse`: Items arranged horizontally (right to left).
  - `column`: Items arranged vertically (top to bottom).
  - `column-reverse`: Items arranged vertically (bottom to top).

- Example: `flex-direction: row;`

#### 3. `flex-wrap:`

- Controls whether flex items should wrap onto multiple lines.
- Values:
  - `nowrap`: Default, all flex items will be on one line.
  - `wrap`: Flex items will wrap onto multiple lines, from top to bottom.
  - `wrap-reverse`: Flex items will wrap onto multiple lines, from bottom to top.

- Example: `flex-wrap: wrap;`

#### 4. justify-content:

- Aligns flex items along the main axis (horizontally if `flex-direction: row;`).
- Values:
  - `flex-start`: Items align to the start of the container.
  - `flex-end`: Items align to the end of the container.
  - `center`: Items align at the center.
  - `space-between`: Items are evenly distributed, with the first item at the start and last at the end.
  - `space-around`: Items are evenly distributed with equal space around them.
  - `space-evenly`: Items are distributed with equal space between them.
- Example: `justify-content: space-between;`.

#### 5. align-items:

- Aligns flex items along the cross axis (vertically if `flex-direction: row;`).
- Values:
  - `stretch`: Default, items stretch to fill the container.
  - `flex-start`: Items align to the start of the cross axis.
  - `flex-end`: Items align to the end of the cross axis.
  - `center`: Items align at the center of the cross axis.
- Example: `align-items: center;`.

### Flex Item Properties:

#### 1. flex-basis:

- Defines the default size of an element before the remaining space is distributed.
- Can be set in length units (px, % , etc.) or `auto`.
  - Example: `flex-basis: 30%;`.

