Lesson : Flexbox in CSS

Introduction to CSS Flexbox

- Flexbox (Flexible Box):
    - Designed for UIs, aligns and distributes space among items.
    - Ensures consistent layout across screen sizes.
- Axes Understanding:
    - Main axis: Primary layout direction (horizontal or vertical).
    - Cross axis: Perpendicular to main axis, determines alignment.
- Usage:
    - Apply display: flex; to enable Flexbox.
    - Default: Horizontal main axis, vertical cross axis.
- Direction:
    - flex-direction: row;: Horizontal main axis.
    - flex-direction: column;: Vertical main axis.
- Cross Axis:
    - Determined by perpendicular axis to flex-direction.
    - Horizontal cross axis for flex-direction: row;, vertical for flex-direction: column;.

Flex container properties

- Align Items
    - Aligns flex items along the cross-axis.
    - Possible values: stretch, center, flex-start, flex-end.
    - The default value is stretch.
- Align Content
    - Aligns the flex lines within a flex container when there is extra space on the cross-axis.
    - Possible values: stretch, center, flex-start, flex-end, space-between, space-around.
    - Used when there are multiple lines of flex items.

- Justify Items
    - Aligns individual items along the main axis within their alignment container.
    - Possible values: auto, normal, start, end, center, stretch.
    - Influences the distribution of space around content items.
- Justify Content
    - Aligns the entire flex container's items along the main axis.
    - Possible values: flex-start, flex-end, center, space-between, space-around, space-evenly.
    - Determines how space is distributed around items.
- Gap
    - Sets the spacing between items in a flex container.
    - Can be defined for rows (row-gap) and columns (column-gap), or both (gap).
    - Useful for creating consistent spacing without margins.

- Flex Wrap

- Controls whether flex items are forced into a single line or can wrap onto multiple lines.
- Possible values: nowrap, wrap, wrap-reverse.
- The default value is nowrap.
- Flex Flow
  - Shorthand for setting both flex-direction and flex-wrap.
  - Values are space-separated: flex-direction flex-wrap.
  - Defines both the direction and wrapping behavior of flex items.
- Flex Direction
  - Specifies the direction of the flex items in the flex container.
  - Possible values: row, row-reverse, column, column-reverse.
  - Determines the main axis direction (horizontal or vertical).

Flex item :
- A child element of a flex container.
- Inherits all the properties and behaviors of flexbox layout.
- Can be manipulated individually using flex properties (order, flex-grow, flex-shrink, flex-basis.).
- order
  - Defines the item's order within the container.
  - Default: 0.
- flex-grow
  - Determines how much the item can grow.
  - Default: 0 (no growth).
- flex-shrink
  - Determines how much the item can shrink.
  - Default: 1.
- flex-basis
  - Sets the initial size of the item.
  - Default: auto.
- flex
  - Shorthand for flex-grow, flex-shrink, flex-basis.
  - Default: 0 1 auto.
- align-self
  - Overrides align-items for an individual item.
  - Possible values: auto, flex-start, flex-end, center, baseline, stretch.