

## Lesson : Grid in CSS

### Introduction to Grid

- Layout System: CSS Grid is a 2-dimensional layout system for arranging elements in rows and columns.
- Activation: Use `display: grid;` on a container to enable grid layout.
- Structure: The grid consists of a grid container (parent) and grid items (children).
- Grid Lines: Define column and row boundaries within the grid.
- Grid Properties: Includes `grid-template-columns`, `grid-template-rows`, `grid-column`, and `grid-row` for defining layout specifics.
- Advantages: Offers flexibility, simplicity in creating layouts, and precise control over element positioning.

### Grid container properties

- `Display`: Activates grid layout on an element using `display: grid;`.
- `grid-template-columns`: Defines the number and sizes of columns in the grid layout.
- `grid-template-rows`: Specifies the number and sizes of rows in the grid layout.
- `grid-auto-rows`: Sets the size of rows that are not explicitly defined in `grid-template-rows`.
- `grid-auto-columns`: Sets the size of columns that are not explicitly defined in `grid-template-columns`.
- `grid-template-areas`: Defines named grid areas where grid items can be placed.
- `grid-column-gap`: Specifies the size of gaps between columns in the grid layout.
- `grid-row-gap`: Specifies the size of gaps between rows in the grid layout.
- `justify-content`: Aligns grid items along the main axis (horizontal) of the grid container.
- `align-content`: Aligns grid lines along the cross axis (vertical) of the grid container when there is extra space.
- `justify-items`: Aligns grid items along the inline (horizontal) axis within their grid area.
- `align-items`: Aligns grid items along the block (vertical) axis within their grid area.

### Grid item properties

- `grid-column-start` and `grid-column-end`: Specifies the starting and ending positions of a grid item along the columns.
- `grid-column`: Shorthand for setting `grid-column-start`, `grid-column-end`, or both.
- `grid-row-start` and `grid-row-end`: Specifies the starting and ending positions of a grid item along the rows.
- `grid-row`: Shorthand for setting `grid-row-start`, `grid-row-end`, or both.
- `grid-area`: Defines a grid item's size and location within the grid by referencing named grid areas.
- `justify-self`: Aligns a grid item along the inline (horizontal) axis within its grid area.
- `align-self`: Aligns a grid item along the block (vertical) axis within its grid area.
- `order`: Controls the order in which grid items appear in the grid layout. Items with lower order values appear first.