

Day 09

CSS Grid

CSS Learning series



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What is Grid?

CSS Grid is a **2-dimensional layout system** in **CSS**. It allows you to **design web layouts in rows and columns** easily. Unlike Flexbox (which is one-dimensional), Grid handles both **horizontal (row) and vertical (column)** layout at the same time.

The **Grid Layout Module** makes it easier to design a responsive layout structure, without using float or positioning.

The **CSS grid properties** are supported in all modern browsers.



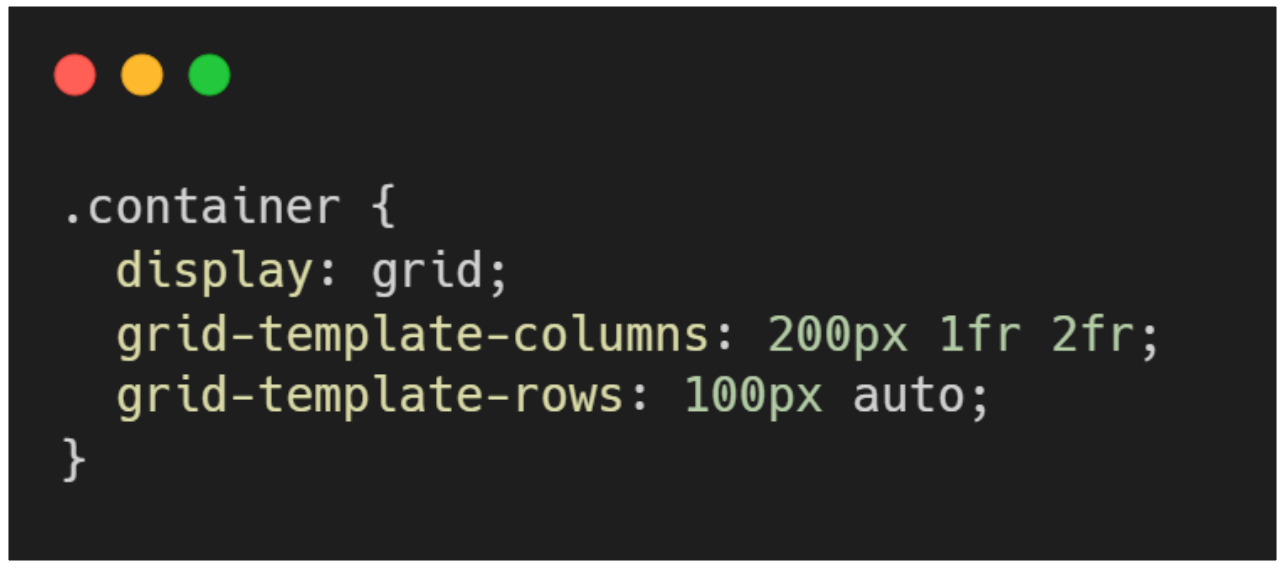
◆ Basic Concepts

Concept	Description
Grid Container	The parent element that uses <code>display: grid</code> or <code>display: inline-grid</code> .
Grid Items	The direct children of the grid container.
Grid Lines	The dividing lines that separate rows and columns.
Grid Tracks	Rows and columns are collectively called "tracks".
Grid Cell	The intersection of a row and column (like a single table cell).
Grid Area	A rectangular space that spans one or more cells.



Define Rows and Columns

- Using `grid-template-columns` and `grid-template-rows`

A code editor window with a dark background and a white border. It features three colored window control buttons (red, yellow, green) in the top-left corner. The editor contains CSS code for defining a grid layout.


```
.container {  
  display: grid;  
  grid-template-columns: 200px 1fr 2fr;  
  grid-template-rows: 100px auto;  
}
```

200px 1fr 2fr: 3 columns — fixed, flexible, and more flexible.

100px auto: 2 rows — fixed and automatic height.



◆ Grid Container Properties

Property	Description	Example	
<code>display: grid</code>	Enables grid layout on an element.	<code>display: grid;</code>	
<code>grid-template-columns</code>	Defines the number and size of columns.	<code>grid-template-columns: 1fr 2fr;</code>	
<code>grid-template-rows</code>	Defines the number and size of rows.	<code>grid-template-rows: 100px auto;</code>	
<code>grid-gap</code> / <code>gap</code>	Adds spacing between rows and columns.	<code>gap: 20px;</code>	
<code>grid-template-areas</code>	Names and arranges grid areas (semantic layout).	See below.	
<code>justify-items</code>	Aligns items horizontally inside their grid area.	<code>justify-items: center;</code>	
<code>align-items</code>	Aligns items vertically inside their grid area.	<code>align-items: center;</code>	
<code>justify-content</code>	Aligns the entire grid horizontally inside the container.	<code>justify-content: space-between;</code>	
<code>align-content</code>	Aligns the entire grid vertically inside the container.	<code>align-content: center;</code>	
<code>grid-auto-rows</code> / <code>columns</code>	Sets default size for implicit rows/columns.	<code>grid-auto-rows: 100px;</code>	
<code>auto-flow</code>	Controls direction of auto-placement (row vs column). 	<code>grid-auto-flow: row;</code>	



Grid vs Flexbox

◆ Feature	◆ Flexbox (1D)	◆ Grid (2D)
Layout Direction	One direction at a time – row or column	Two directions – rows and columns
Best For	Components, toolbars, navs, cards	Page layouts, dashboards, complex UI grids
Item Placement	Based on content flow	Precise control via grid lines or named areas
Parent Property	<code>display: flex</code>	<code>display: grid</code>
Responsive Support	Needs more media queries	More natural with auto-fit / auto-fill + fr units
Alignment	Powerful along main/cross axes	Powerful in both axes using <code>align</code> / <code>justify</code>
Gap Support	<code>gap</code> , <code>row-gap</code> , <code>column-gap</code>	Full support
Wrapping	Controlled with <code>flex-wrap</code>	Grid items wrap based on defined rows/columns
Item Order Control	Yes, with <code>order</code>	Possible, but less common
Learning Curve	Easier for beginners	Slightly more complex due to full layout capabilities



Day 01

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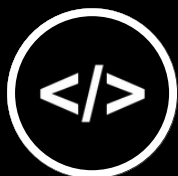
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