

# CSS Grid Layout

CSS Grid Layout is a two-dimensional layout system for the web that allows you to create grid-based layouts easily. It provides a more efficient and flexible way to structure content compared to traditional methods.

## 1. Grid Container:

To create a grid, you first need a grid container. This is done by applying `display: grid;` to the container element.

```
.grid-container {  
  display: grid;  
}
```

## 2. Grid Template:

Specify the columns and rows of the grid using `grid-template-columns` and `grid-template-rows`. You can use various units like pixels, percentages, or `fr` (fraction of available space).

```
.grid-container {  
  display: grid;  
  grid-template-columns: 1fr 2fr 1fr;  
  grid-template-rows: 100px auto 50px;  
}
```

## 3. Grid Gaps:

Set the gap between columns and rows using `grid-column-gap` and `grid-row-gap`, or `grid-gap` for both.

```
.grid-container {  
  display: grid;  
  grid-column-gap: 20px;  
  grid-row-gap: 10px;  
}  
/* OR shorthand */  
.grid-container {  
  display: grid;
```

```
    grid-gap: 10px 20px;
}
```

#### 4. Grid Rows and Columns:

Items inside the grid are placed based on grid lines. You can define the number of rows and columns for an item using `grid-row` and `grid-column`.

```
.grid-item {
  grid-row: 2 / 4; /* spans from row line 2 to row line 4 */
  grid-column: 1 / 3; /* spans from column line 1 to column line 3 */
}
```

Sample Code:

Here's a simple example combining the concepts discussed:

```
.grid-container {
  display: grid;
  grid-template-columns: 1fr 2fr 1fr;
  grid-template-rows: 100px auto 50px;
  grid-gap: 10px;
}
```

```
.grid-item {
  background-color: #3498db;
  color: #fff;
  padding: 20px;
  text-align: center;
}
```

```
.item1 {
  grid-row: 1 / 3;
  grid-column: 1 / 3;
}
```

```
.item2 {
  grid-row: 2 / 4;
  grid-column: 2 / 4;
}
```

In this example, the grid container has three columns and three rows with specific sizes. Two items (`item1` and `item2`) are placed in the grid with different row and column spans.