

CSS Grid & Responsive Design

1. CSS Grid Layout

While Flexbox is 1-dimensional (rows OR columns), Grid is 2-dimensional (rows AND columns). It is powerful for overall page layout.

Basic Grid Setup:

CSS

```
.grid-container {  
  display: grid;  
  grid-template-columns: 1fr 1fr 1fr; /* Three equal columns */  
  grid-template-rows: 200px 200px; /* Two rows, 200px high */  
  gap: 20px; /* Space between grid cells */  
}
```

- `fr`: Fractional unit (e.g., `1fr` takes 1 part of the available space).

2. Responsive Design (Media Queries)

Responsive design ensures your website looks good on phones, tablets, and desktops. We use **Media Queries** to apply different CSS rules based on screen size.

Syntax:

CSS

```
/* Default style (Desktop) */  
body {  
  background-color: blue;  
}
```

```
}  
/* Style for devices smaller than 600px (Mobile) */  
@media only screen and (max-width: 600px) {  
  body {  
    background-color: red;  
  }  
}
```

3. Transitions

Transitions allow property changes to happen smoothly over a given duration.

CSS

```
button {  
  background: blue;  
  transition: background 0.5s; /* Animation takes 0.5 seconds */  
}  
  
button:hover {  
  background: green; /* Smoothly changes from blue to green */  
}
```