

What is Flexbox?

Flexbox (Flexible Box Layout) is a one-dimensional layout method for arranging items in rows or columns. It helps you:

- Align items easily (left, right, center, stretch, etc.)
- Control spacing between elements
- Create responsive designs without floating or positioning

Basic Flexbox Concepts

1. Flex Container

This is the parent element. It becomes flexible when you add:

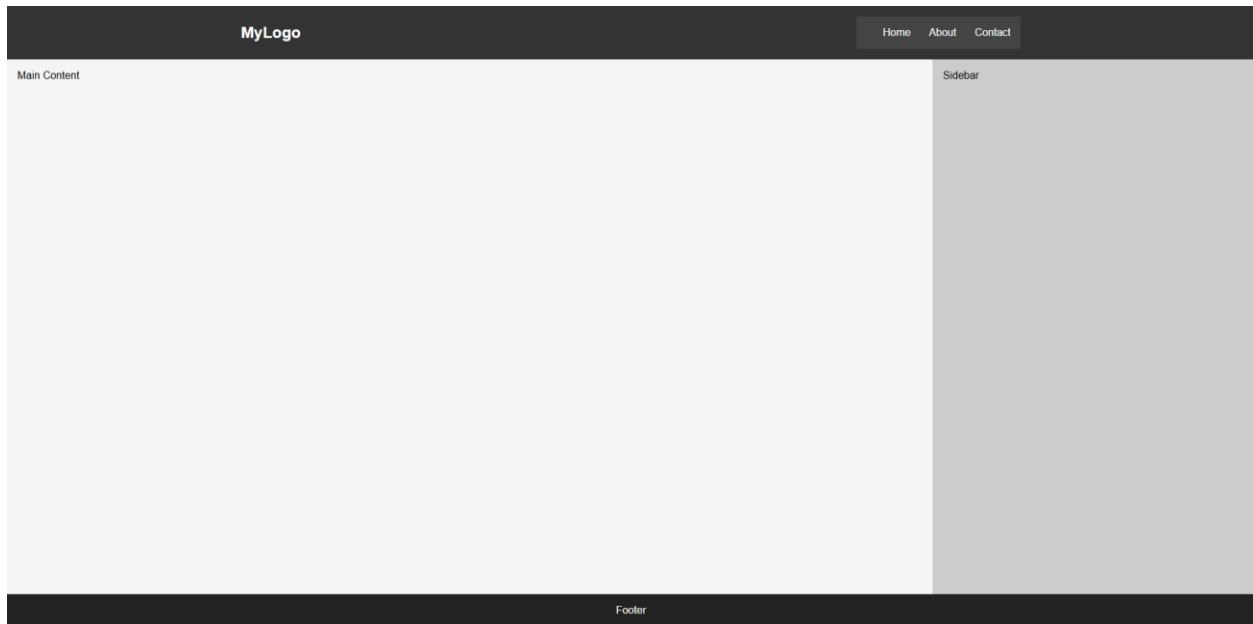
```
display: flex;
```

2. Flex Items

The children of the flex container. These are the boxes you move around and style using flex properties.

□ Flex Container Properties:-

| Property | What it does |
|------------------------------|---|
| <code>display: flex</code> | Makes the element a flex container |
| <code>flex-direction</code> | Row or column layout (<code>row</code> , <code>column</code>) |
| <code>justify-content</code> | Aligns items horizontally |
| <code>align-items</code> | Aligns items vertically |
| <code>flex-wrap</code> | Wraps items to the next line if needed |



layout.css file code:-

```
/* Reset default spacing */  
  
* {  
  margin: 0;  
  padding: 0;  
  box-sizing: border-box;  
}
```

```
body {  
  font-family: Arial, sans-serif;  
  min-height: 100vh;  
  display: flex;  
  flex-direction: column;
```

```
}
```

```
/* Updated Header Styles */
```

```
header {  
  background-color: #333;  
  color: white;  
  padding: 1rem 2rem;  
}
```

```
.header-container {  
  display: flex;  
  justify-content: space-between; /* Logo left, menu right */  
  align-items: center;  
  max-width: 1200px;  
  margin: 0 auto;  
}
```

```
.logo {  
  font-size: 1.5rem;  
  font-weight: bold;  
}
```

```
.menu a {  
  color: white;  
  text-decoration: none;
```

```
margin-left: 1.5rem;
font-size: 1rem;
}
```

```
.menu a:hover {
text-decoration: underline;
}
```

```
/* Navigation bar style (below header) */
nav {
background-color: #444;
color: white;
padding: 1rem;
text-align: center;
}
```

```
/* Content area as flex */
.content {
display: flex;
flex: 1; /* Take up available space */
flex-direction: row; /* Place main and aside side-by-side */
}
```

```
/* Main content styles */
main {
```

```
flex: 3;
padding: 1rem;
background-color: #f4f4f4;
}
```

```
/* Sidebar styles */
```

```
aside {
  flex: 1;
  padding: 1rem;
  background-color: #ccc;
}
```

```
/* Footer stays at bottom */
```

```
footer {
  background-color: #222;
  color: #fff;
  padding: 1rem;
  text-align: center;
}
```

Layout.html file code:-

```
<!DOCTYPE html>

<html>

<head>

<link rel="stylesheet" href="layout.css">

</head>

<body>

  <header>

    <div class="header-container">

      <div class="logo">MyLogo</div>

      <nav class="menu">

        <a href="#">Home</a>

        <a href="#">About</a>

        <a href="#">Contact</a>

      </nav>

    </div>

  </header>

  <div class="content">

    <div class="main">Main Content</div>

    <div class="aside">Sidebar</div>

  </div>

  <footer>Footer</footer>

</body>
```

</html>

Note: details explanation of css code:-

Let's go **line by line** and explain what each part of your CSS code does in simple terms.

□ Reset default spacing

```
* {  
  margin: 0;  
  padding: 0;  
  box-sizing: border-box;  
}
```

- *: Selects **all elements** on the page.
 - margin: 0;: Removes default outer spacing.
 - padding: 0;: Removes default inner spacing.
 - box-sizing: border-box;: Makes width/height include padding and border. This makes layout sizing much easier and more predictable.
-

□ Body styles

```
body {  
  font-family: Arial, sans-serif;  
  min-height: 100vh;  
  display: flex;  
  flex-direction: column;  
}
```

- font-family: Arial, sans-serif;: Uses **Arial** font, or any sans-serif if Arial isn't available.
- min-height: 100vh;: Makes sure the body is at least the height of the **viewport** (100% of screen height).

- `display: flex;` Makes the body a **flex container**.
 - `flex-direction: column;` Stacks the child elements **vertically**.
-

□ Header styles

```
header {  
  background-color: #333;  
  color: white;  
  padding: 1rem 2rem;  
}
```

- `background-color: #333;` Dark gray background.
 - `color: white;` White text.
 - `padding: 1rem 2rem;` Adds **vertical padding of 1rem**, and **horizontal padding of 2rem**.
-

□ Header container styles

```
.header-container {  
  display: flex;  
  justify-content: space-between;  
  align-items: center;  
  max-width: 1200px;  
  margin: 0 auto;  
}
```

- `display: flex;` Makes the `.header-container` a flexbox.
 - `justify-content: space-between;` Spaces child items out so **logo is left, menu is right**.
 - `align-items: center;` Vertically centers items.
 - `max-width: 1200px;` Keeps the header from getting too wide.
 - `margin: 0 auto;` Horizontally centers the container.
-

□ Logo styles

```
.logo {  
  font-size: 1.5rem;  
  font-weight: bold;  
}
```

- `font-size: 1.5rem;` Slightly larger text (usually 24px).
- `font-weight: bold;` Makes the logo text bold.

□ Menu link styles

```
.menu a {  
  color: white;  
  text-decoration: none;  
  margin-left: 1.5rem;  
  font-size: 1rem;  
}
```

- `color: white;`: White text for menu links.
- `text-decoration: none;`: Removes the underline.
- `margin-left: 1.5rem;`: Spaces each link apart from the previous one.
- `font-size: 1rem;`: Normal text size (typically 16px).

```
.menu a:hover {  
  text-decoration: underline;  
}
```

- When you **hover over** a menu link, it adds an underline to show it's interactive.
-

□ Navigation bar below header

```
nav {  
  background-color: #444;  
  color: white;  
  padding: 1rem;  
  text-align: center;  
}
```

- `background-color: #444;`: A slightly lighter dark background.
 - `color: white;`: White text.
 - `padding: 1rem;`: Space inside the element.
 - `text-align: center;`: Centers any text inside.
-

□ Main content and sidebar container

```
.content {
  display: flex;
  flex: 1;
  flex-direction: row;
}
```

- `display: flex;`: Makes `.content` a flex container.
 - `flex: 1;`: Allows it to grow and take up remaining space.
 - `flex-direction: row;`: Aligns `<main>` and `<aside>` **side by side**.
-

□ Main content area

```
main {
  flex: 3;
  padding: 1rem;
  background-color: #f4f4f4;
}
```

- `flex: 3;`: Takes up **3 parts** of available space (75%).
 - `padding: 1rem;`: Adds inner spacing.
 - `background-color: #f4f4f4;`: Light gray background.
-

□ Sidebar

```
aside {
  flex: 1;
  padding: 1rem;
  background-color: #ccc;
}
```

- `flex: 1;`: Takes up **1 part** of available space (25%).
 - `padding: 1rem;`: Adds inner spacing.
 - `background-color: #ccc;`: Medium gray background.
-

□ Footer

```
footer {
  background-color: #222;
  color: #fff;
  padding: 1rem;
  text-align: center;
}
```

}

- `background-color: #222;`: Very dark gray.
- `color: #fff;`: **White text.**
- `padding: 1rem;`: Adds spacing inside.
- `text-align: center;`: Centers the text.