

Q1. What is CSS Flexbox, and how is it useful for layout design? Explain the terms flex-container and flex-item.

Ans: CSS Flexbox and Its Use in Layout Design

CSS Flexbox (Flexible Box Layout) is a layout system in CSS that makes it easier to design responsive and flexible web layouts. It allows items inside a container to automatically adjust their size, position, and spacing based on the available space.

Flexbox is especially useful for:

- Creating responsive layouts
- Centering items easily
- Arranging elements horizontally or vertically
- Handling spacing between elements without complex CSS

The **flex-container** is the parent element where Flexbox is applied.

It is created by adding: `display: flex;`

This container controls how the child elements behave using properties like:

- `flex-direction`
- `justify-content`
- `align-items`
- `flex-wrap`

Flex-Item

The **flex-items** are the child elements inside the flex-container.

Each item can grow, shrink, or take available space depending on:

- `flex-grow`
- `flex-shrink`
- `flex-basis`

Q2. Describe the properties justify-content, align-items, and flex-direction used in Flexbox.

Ans: (1) justify-content

This property controls horizontal alignment of flex items along the main axis.

Common values:

- flex-start — items start from the left
- flex-end — items move to the right
- center — items are centered horizontally
- space-between — equal space *between* items
- space-around — space around each item
- space-evenly — equal spacing everywhere

(2) align-items

This property controls vertical alignment of items along the cross axis.

Common values:

- flex-start — items align to the top
- flex-end — items align to the bottom
- center — items are centered vertically
- stretch — items stretch to fill height
- baseline — items align based on text baseline

(3) flex-direction

This property defines the direction of the main axis, determining how items are placed.

Common values:

- row — items placed left to right (default)
- row-reverse — right to left
- column — top to bottom
- column-reverse — bottom to top