

Q1: What is CSS Flexbox, and how is it useful for layout design?

Explain the terms flex-container and flex-item?

CSS Flexbox (Flexible Box Layout) is a layout system in CSS that helps arrange elements in rows or columns. It makes it easy to align, distribute space, and adjust elements inside a container—even when their sizes change.

Key Terms:

- **Flex-container** → The parent element that has `display: flex;`. It controls the layout.
 - `.container {`
 - `display: flex;`
 - `}`
- **Flex-item** → The child elements inside the flex-container. They are the boxes that get arranged by Flexbox.
 - `<div class="container">`
 - `<div class="item">1</div>`
 - `<div class="item">2</div>`
 - `</div>`

Why useful?

- Handles both horizontal and vertical alignment easily.
- Makes responsive design simpler (adapts well to screen size).
- Avoids the need for floats and complicated positioning.

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

justify-content Aligns items **horizontally** (along the main axis).

- Values:

- flex-start = items at the start
 - flex-end = items at the end
 - center = items in the center
 - space-between = equal space *between* items
 - space-around = equal space *around* items
 - space-evenly = equal space *between and around*
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2. **align-items** → Aligns items **vertically** (along the cross axis).

- Values:

- flex-start = top
 - flex-end = bottom
 - center = middle
 - stretch = items stretch to fill container
 - baseline = align text baselines
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3. **flex-direction** → Decides the **main axis direction** (row or column).

- Values:

- row (default) = items go left to right
- row-reverse = right to left
- column = top to bottom
- column-reverse = bottom to top