1. **Differences between flex and grid.**

| **Feature** | **Flexbox** | **CSS Grid** |
| --- | --- | --- |
| Layout Type | One-dimensional (row or column) | Two-dimensional (rows and columns) |
| Direction of Control | Single axis (horizontal or vertical) | Both axes (rows and columns) |
| Alignment | Alignment within a single line | Alignment in both rows and columns |
| Common Use Cases | Navigation menus, toolbars, centering | Complex page layouts, grid-based designs |
| Nested Layouts | Suited for nested layouts within a Flex container | Powerful for creating nested grids |
| Browser Support | Good support, more universal | Good support, slightly more modern browsers |
| Compatibility | Suitable for one-dimensional layouts | Ideal for two-dimensional layouts |

1. **Properties for parent and child.**

These properties help you to control the layout and positioning of elements in Flexbox and CSS Grid.

**Flexbox:**

| **Property** | **Parent (Flex Container)** | **Child (Flex Item)** |
| --- | --- | --- |
| **display** | Turn on the flexbox mode for a group of items (e.g., **flex**) | N/A |
| **flex-direction** | Set the main alignment direction (e.g., **row**, **column**) | N/A |
| **justify-content** | Align items along the main axis (e.g., **flex-start**, **center**) | N/A |
| **align-items** | Align items along the cross axis (e.g., **flex-start**, **center**) | N/A |
| **flex-wrap** | Control whether items wrap to a new line when there's no space (e.g., **nowrap**, **wrap**) | N/A |
| **align-content** | Align wrapped lines along the cross axis (e.g., **flex-start**, **center**) | N/A |
| **flex** | N/A | Determine how much space a specific item can take |
| **order** | N/A | Change the order in which a specific item appears |

CSS Grid:

| **Property** | **Parent (Grid Container)** | **Child (Grid Item)** |
| --- | --- | --- |
| **display** | Turn on the grid mode for a group of items (e.g., **grid**) | N/A |
| **grid-template-rows** and **grid-template-columns** | Define the rows and columns in the grid | N/A |
| **grid-template-areas** | Define named areas in the grid where items can be placed | N/A |
| **grid-template** | A shorthand property for defining rows and columns | N/A |
| **justify-items** and **align-items** | Align all items within the grid horizontally and vertically | N/A |
| **justify-content** and **align-content** | Position grid content within the grid | N/A |
| **grid-column** and **grid-row** | Specify where an item starts and ends in the grid (e.g., **2 / 4**) | Determine the grid placement for a specific item |
| **grid-area** | Place an item into a named area defined in the parent grid | Specify the named area where a specific item should go |
| **justify-self** and **align-self** | Individually control alignment of a specific item within its grid space | N/A |