**Q1. Describe the main difference between the CSS Flexbox layout model and the CSS Grid layout model. when would you choose to use one over the other?**

**Ans-**

### **1. CSS Flexbox Layout Model:**

* **Purpose: Flexbox is designed for one-dimensional layouts. It works either in a row (horizontal) or a column (vertical), but not both at the same time.**
* **Layout: It aligns items along a single axis (either horizontal or vertical). Flexbox is ideal for distributing space and aligning items within a container, even when their sizes are unknown or dynamic.**
* **Use Case: Use Flexbox when you have a simple layout that involves aligning items in a single row or column, like a navigation bar, a toolbar, or a list of items.**

### **2. CSS Grid Layout Model:**

* **Purpose: CSS Grid is designed for two-dimensional layouts, meaning it can handle both rows and columns simultaneously.**
* **Layout: It allows for complex layouts by defining areas in a grid, making it easy to position items precisely in both horizontal and vertical spaces.**
* **Use Case: Use Grid when you need a complex, multi-dimensional layout, such as a webpage layout with headers, footers, sidebars, and content areas. It’s ideal for scenarios where you need to control both columns and rows.**

### **When to Choose One Over the Other:**

* **Choose Flexbox when you are working with a single axis and need to align items within a container, especially if the layout is straightforward and does not require the placement of items in a grid-like pattern.**
* **Choose Grid when you need a more complex layout with multiple rows and columns, where items need to be positioned precisely within a larger structure. Grid is also preferable when the layout involves overlapping elements or when you need more control over both axes.**