1.What is the grid?

Ans. Grid" can mean different things depending on the context. Could you clarify what you're referring to? Here are some common meanings:

1. **In Design & Layout** – A grid is a framework of intersecting vertical and horizontal lines used for alignment, such as in graphic design, web design, and typography.
2. **In Computing & Data** – A grid can refer to a **grid system** used in software development, data visualization, or spreadsheets.
3. **In Energy** – The **power grid** refers to the network that delivers electricity from power plants to homes and businesses.
4. **In Sports** – In motorsports, the **starting grid** is the arrangement of cars before a race.
5. **In Science & Engineering** – A grid can refer to a coordinate system used for mapping or simulations.

2. What is the difference between Flex and grid

Ans. **1. Flexbox (Flexible Box Layout)**

- **One-dimensional** – Works in either a row **(horizontal)** or a column **(vertical)**, but not both at the same time.
- **Best for layouts where elements are arranged in a single direction**, like navigation bars, form inputs, or simple component alignment.
- Uses **main axis (row or column) and cross axis** for alignment.
- Example:

2. Grid (CSS Grid Layout)

- **Two-dimensional** – Works in both rows **and** columns simultaneously.
- **Best for complex layouts**, like full web page structures, dashboards, and card layouts.
- Uses **grid-template-rows and grid-template-columns** to define structure.
- Example:

When to Use What?

- **Use Flexbox** for simple, linear layouts (e.g., navbar, buttons, form fields).
- **Use Grid** for complex, structured layouts (e.g., full-page layouts, cards, galleries).
- **You can combine both!** For example, use **Grid** for overall page structure and **Flexbox** for aligning items inside a grid cell.

3. How can you define rows and columns for your grid?

Ans. In **CSS Grid**, you define rows and columns using the `grid-template-rows` and `grid-template-columns` properties. Here's how you do it:

Defining Columns

You use `grid-template-columns` to set the number and width of columns.
Example:

```
css
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.container {
  display: grid;
  grid-template-columns: 100px 200px 300px; /* Three columns with fixed
widths */
}
```

This creates:

- 1st column: 100px wide
- 2nd column: 200px wide
- 3rd column: 300px wide

Defining Rows

You use `grid-template-rows` to define row heights.
Example:

```
css
CopyEdit
.container {
  display: grid;
  grid-template-rows: 100px 150px; /* Two rows with fixed heights */
}
```

This creates:

- 1st row: 100px high
- 2nd row: 150px high

Using `fr` for Flexible Sizing

Instead of fixed pixel values, you can use `fr` (**fractional unit**) to make columns flexible.
Example:

```
css
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.container {
  display: grid;
  grid-template-columns: 1fr 2fr 1fr; /* Three columns, 2nd column is twice
as wide */
}
```

Using `repeat()` for Simplicity

Instead of writing multiple values, you can use `repeat()`.
Example:

```
css
CopyEdit
.container {
  display: grid;
  grid-template-columns: repeat(3, 1fr); /* Creates 3 equal columns */
  grid-template-rows: repeat(2, 200px); /* Creates 2 rows of 200px each */
}
```

Full Example

```
css
CopyEdit
.container {
  display: grid;
  grid-template-columns: repeat(3, 1fr);
  grid-template-rows: 100px 200px;
  gap: 10px; /* Adds spacing between grid items */
}
```

4. List any two properties of the grid item
and grid container.?

Ans. Two Properties of Grid Container

1. **`grid-template-columns` & `grid-template-rows`** – Defines the structure of columns and rows in the grid.

```
css
CopyEdit
.container {
  display: grid;
  grid-template-columns: 1fr 2fr 1fr; /* Three columns */
  grid-template-rows: 100px 200px; /* Two rows */
}
```

2. **`gap` (or `row-gap` & `column-gap`)** – Sets spacing between grid items.

```
css
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.container {
  display: grid;
  gap: 20px; /* Adds space between grid items */
}
```

Two Properties of Grid Item

1. **`grid-column`** – Controls how many columns a grid item spans.

```
css
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.item {
  grid-column: 1 / 3; /* Item spans from column 1 to 3 */
}
```

2. **`grid-row`** – Controls how many rows a grid item spans.

css
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```
.item {
  grid-row: 1 / 3; /* Item spans from row 1 to 3 */
}
```