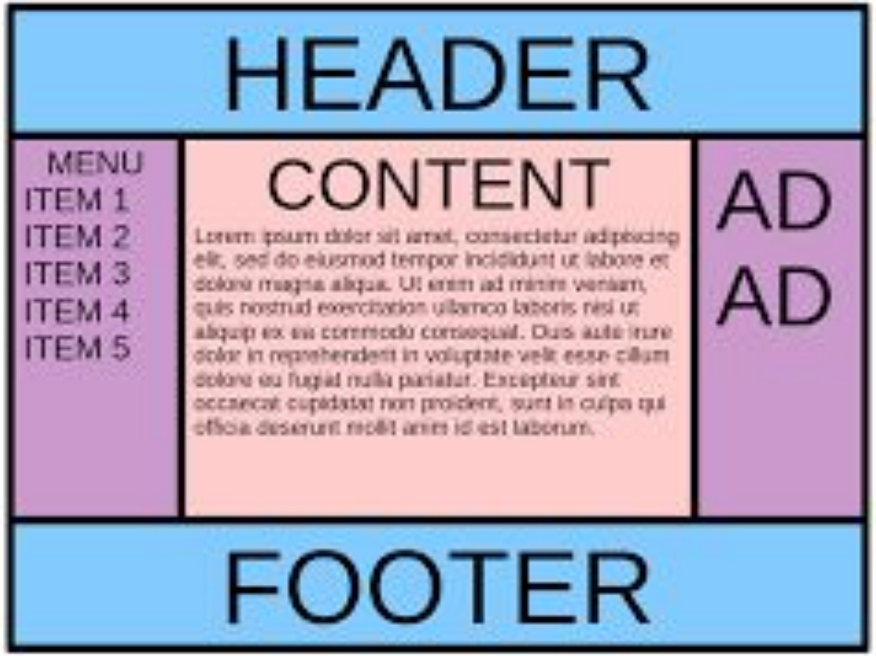
Module 3 - Lecture 3

CSS Layouts & Intro to Responsive Design

The Holy Grail Layout



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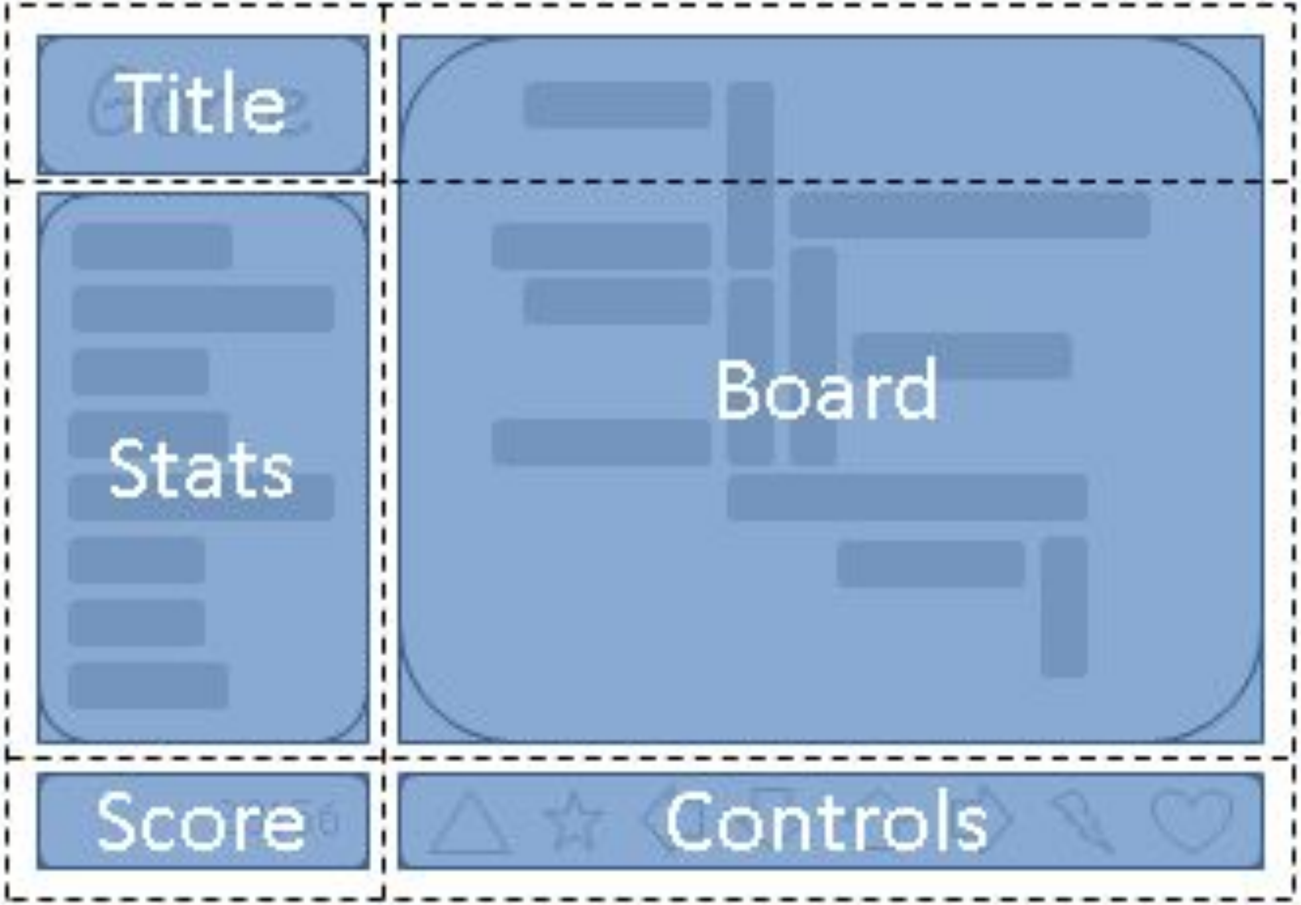
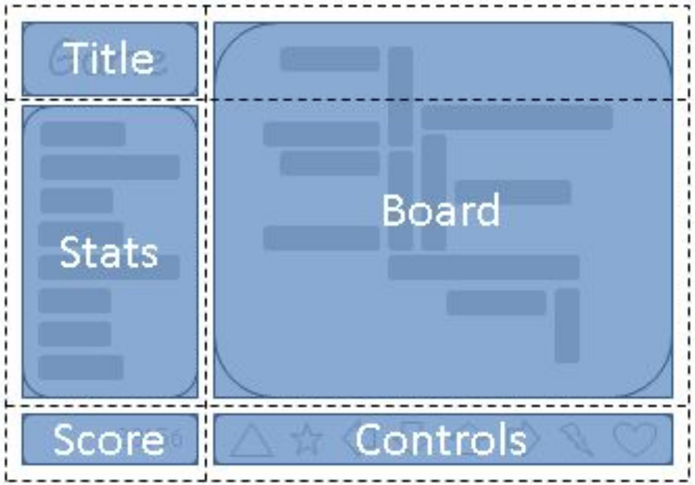
CSS Grid

https://www.w3.org/TR/css-grid-1/


Title
Board
Stats
Score
Controls

Terminology

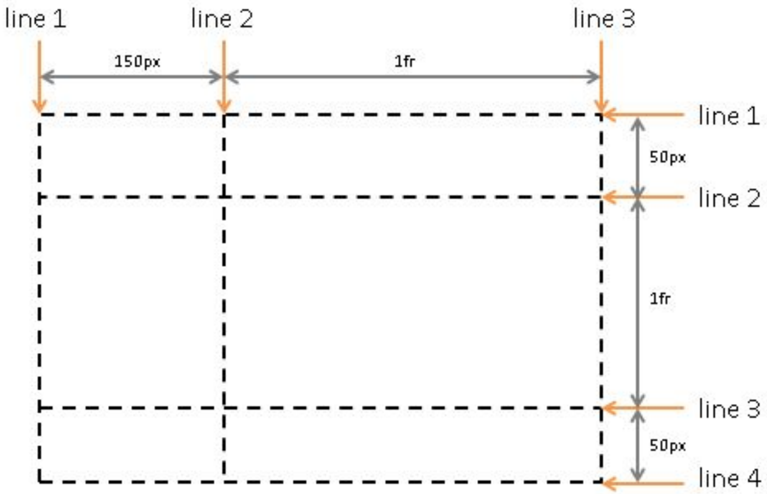
- **Grid lines** are the vertical and horizontal dividing lines of the grid.
- A **grid cell** refers to one block within a grid.
- A **grid track** is a term referencing an entire column or row.
- A **gutter** is the space between adjacent grid tracks.



Starting a Grid Layout

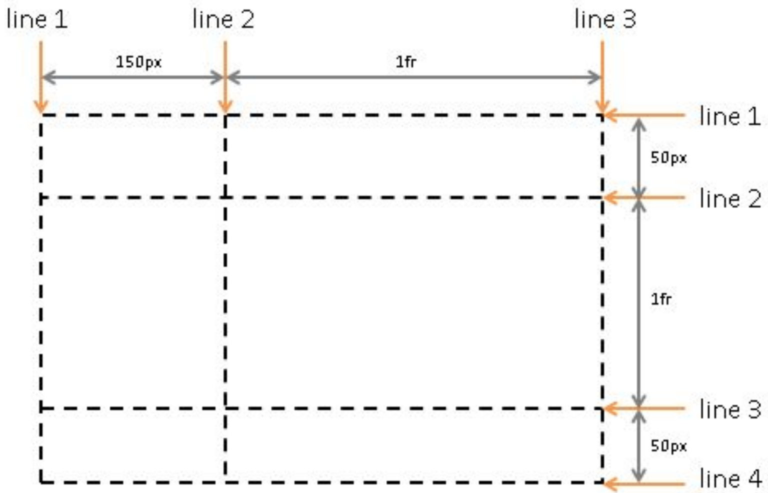
```
{
     display: grid;
     grid-template-columns: 150px 1fr;
     grid-template-rows: 50px 1fr 50px;
}
```

* The fr unit is a flexible length representing a fraction of the remaining space.



Placing Items

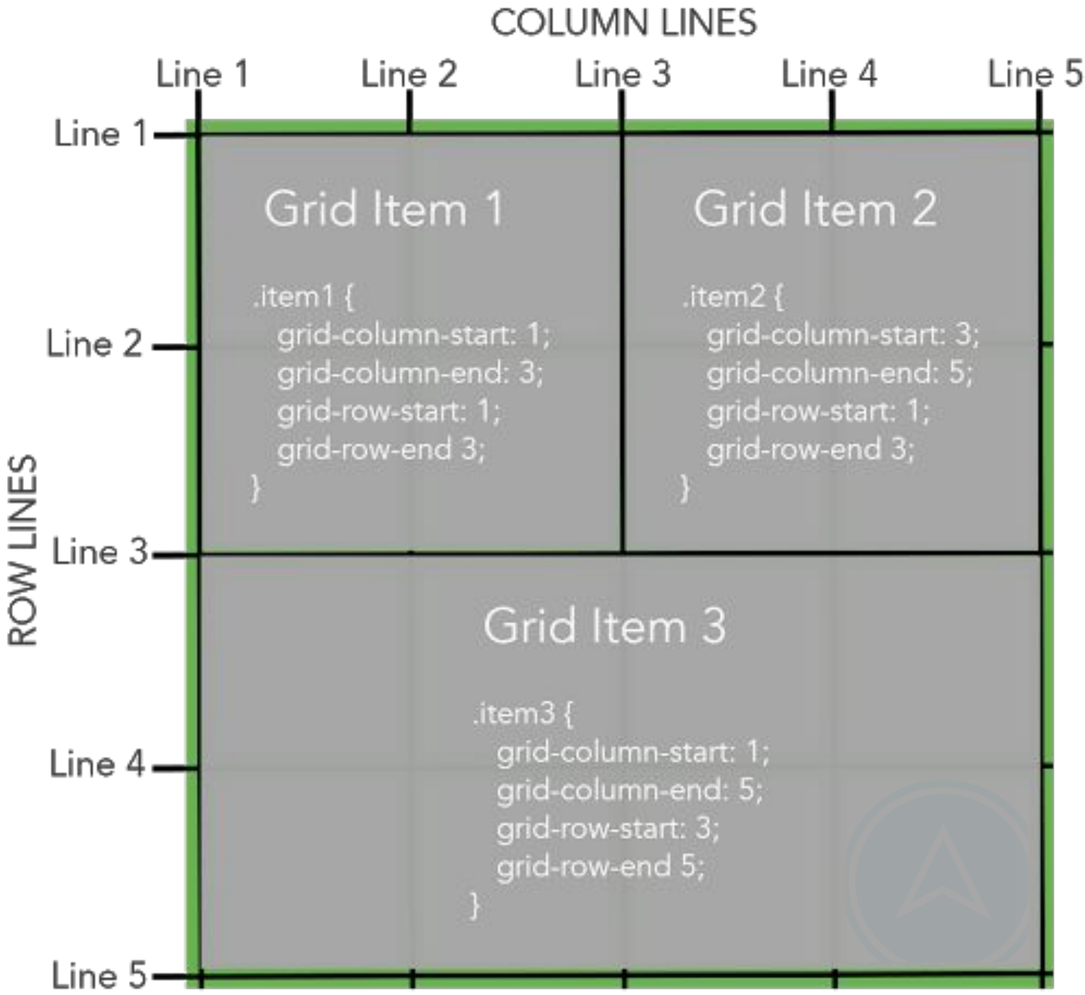
```
{
      display: grid;
      grid-template-areas: “. a”
                           “b .”
                           “. c”;
      grid-template-columns: 150px 1fr;
      grid-template-rows: 50px 1fr 50px;
}

#item1 { grid-area: a }
#item2 { grid-area: b }

#item3 { grid-area: c }
```



grid-column-start,
grid-column-end,

grid-row-start,
grid-row-end

control the starting and ending location within the grid where a grid item appears.



```
.item1 {
  grid-column-start: 1;
  grid-column-end: 3;
  grid-row-start: 1;
  grid-row-end 3;
}
```

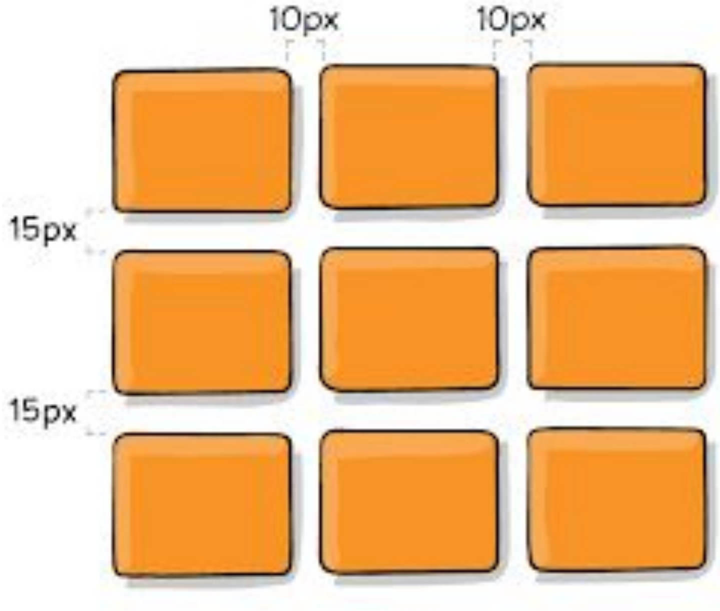
```
.item2 {
  grid-column-start: 3;
  grid-column-end: 5;
  grid-row-start: 1;
  grid-row-end 3;
}
```

```
.item3 {
  grid-column-start: 1;
  grid-column-end: 5;
  grid-row-start: 3;
  grid-row-end 5;
}
```

Grip Gap

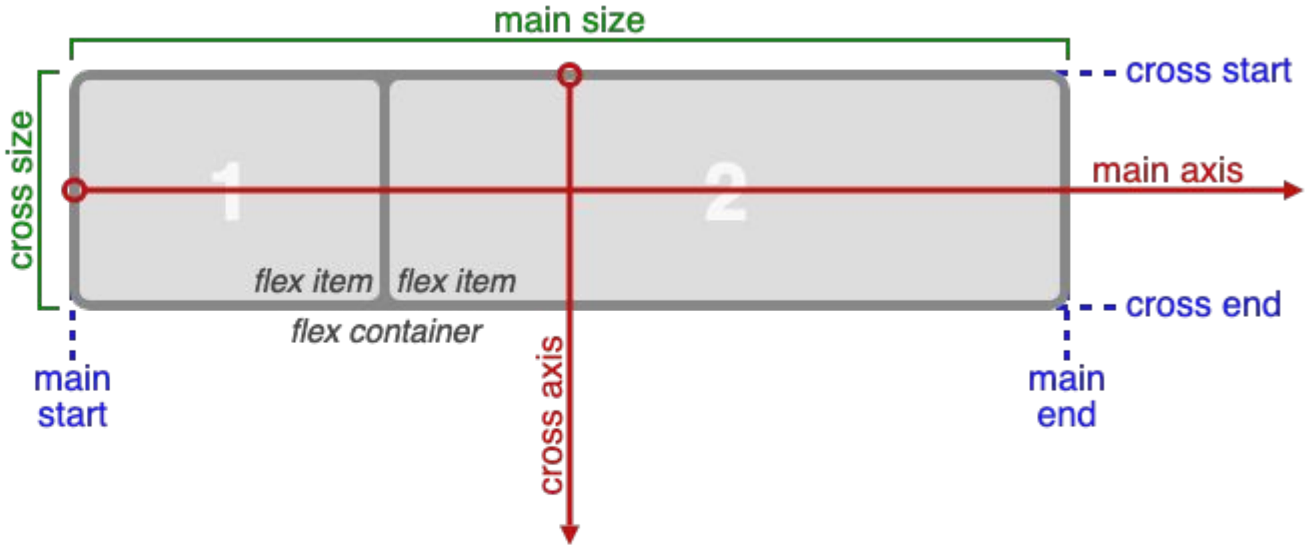
The space between the grid tracks. The gutter.

```
{
      grid-template-columns: 1fr 1fr 1fr;
      grid-column-gap: 10px
      grid-row-gap: 15px;
}
```



CSS Flexbox

https://www.w3.org/TR/css-flexbox-1/

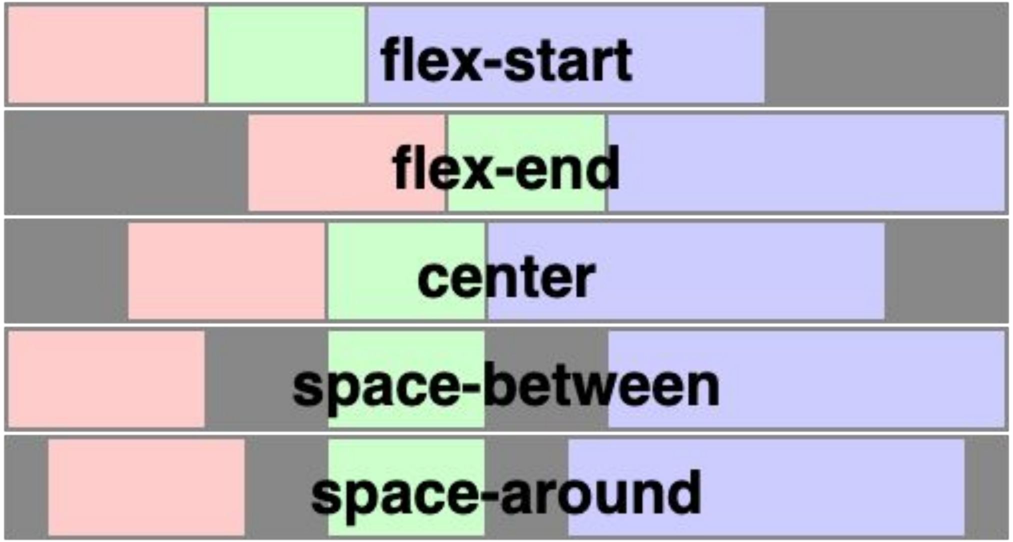


A flex container takes away some of the functionality of the block container

- For example: float and vertical alignment do not apply.

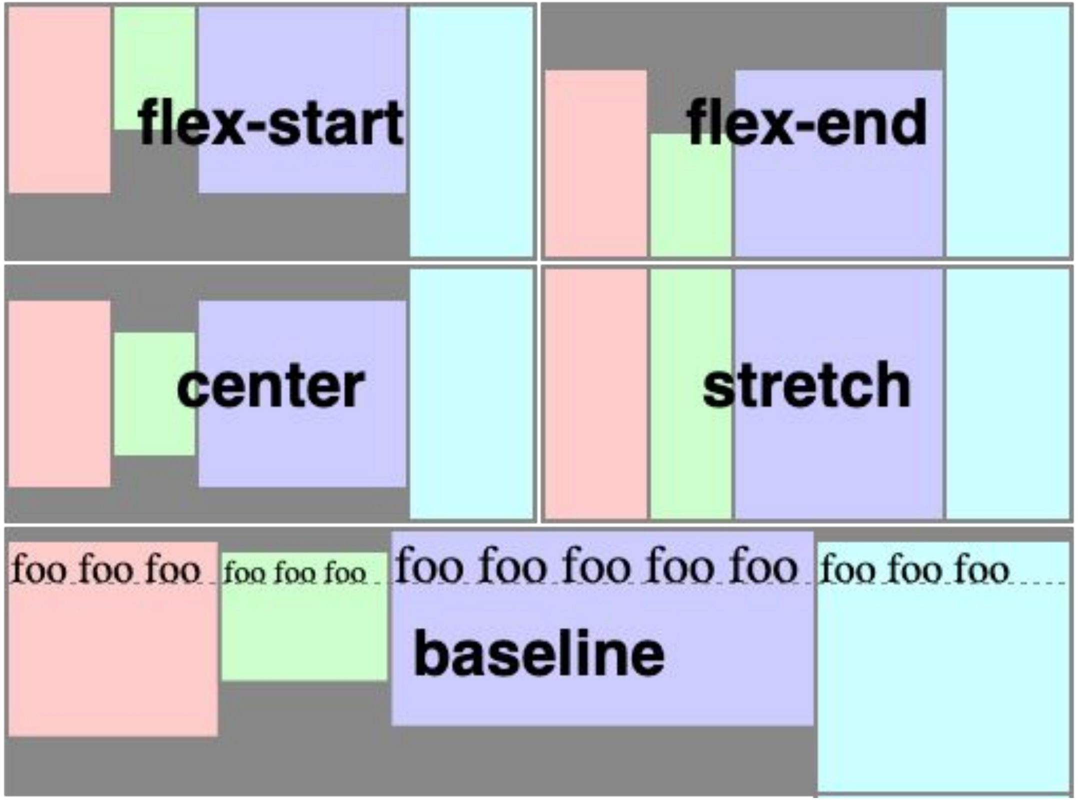
Main Axis Alignment

justify-content



Cross Axis Alignment

align-items



Sizing Flex Items

flex-basis: The base size of the flex item.

flex-grow: How much a flex item will grow relative to other flex items.

flex-shrink: How much a flex item will shrink relative to other flex items.

Using the **flex** property enables sizing flex items using 3 separate components.

flex: <flex-grow> <flex-shrink> <flex-basis>

Responsive Design

Media Queries

```
@media only screen and (min-width: 1024px) {
  /* Target screen sizes 1024px and above */
}


@media only screen and (max-width: 1023px) {
  /* Target screen sizes 1023px and below */
}
```

Relative Sizing

- **em** and root em (or **rem**) are sizing measurements relative to the font size.

- Sizing can also be done in percentages, from 0-100%

- CSS3 introduced a unit of sizing that allows sizing relative to the height and width of the viewport (browser window).
    - The unit is **vh for viewport height** and **vw for viewport width.** Each ranges from 0 - 100, meaning 0 to 100% of the viewport.

Images

- Images make up 60% of a webpage’s size, on average.

- Use relative sizing for images to prevent them from overflowing the container.

- Use the **<picture>** element to specify different images based on media queries. This is called **art direction**.

- Use **srcset** attribute in the **<img>** element to render different images based on the device’s pixel density.

- JPG vs. PNG

- Vector vs. Raster

Resources

Grid

- A Complete Guide to Grid
- Grid Garden
- Holy Grail Layout
- Holy Grail Demo

Flexbox

- A Complete Guide to Flexbox
- Flexbox Playground
- Flexbox Examples

Responsive Image Demos

QUESTIONS?