Responsive Layout w/ Flexbox

Aaron LuBean, Sr. Engineer, ICS

Why Another Layout Model?

- Existing layout models and tools require hacks to do complex layouts

- None of the existing tools were created explicitly for laying out content

Flexible Box Layout Model (Flexbox)

- CSS already has block, inline, table, and positioned layout model - Flexbox is just another one

- Flexbox aims to be a better way to lay out content

Flexbox spec: http://www.w3.org/TR/css3-flexbox/

Flexbox Key Ideas

- Let the container alter its items' width/height (and order) to best fill the available space

- Direction-agnostic instead of vertically-based (block) or horizontally-based (inline)

- Support complex layouts and and consider orientation changes, resizing, stretching, shrinking, etc.

Caveats

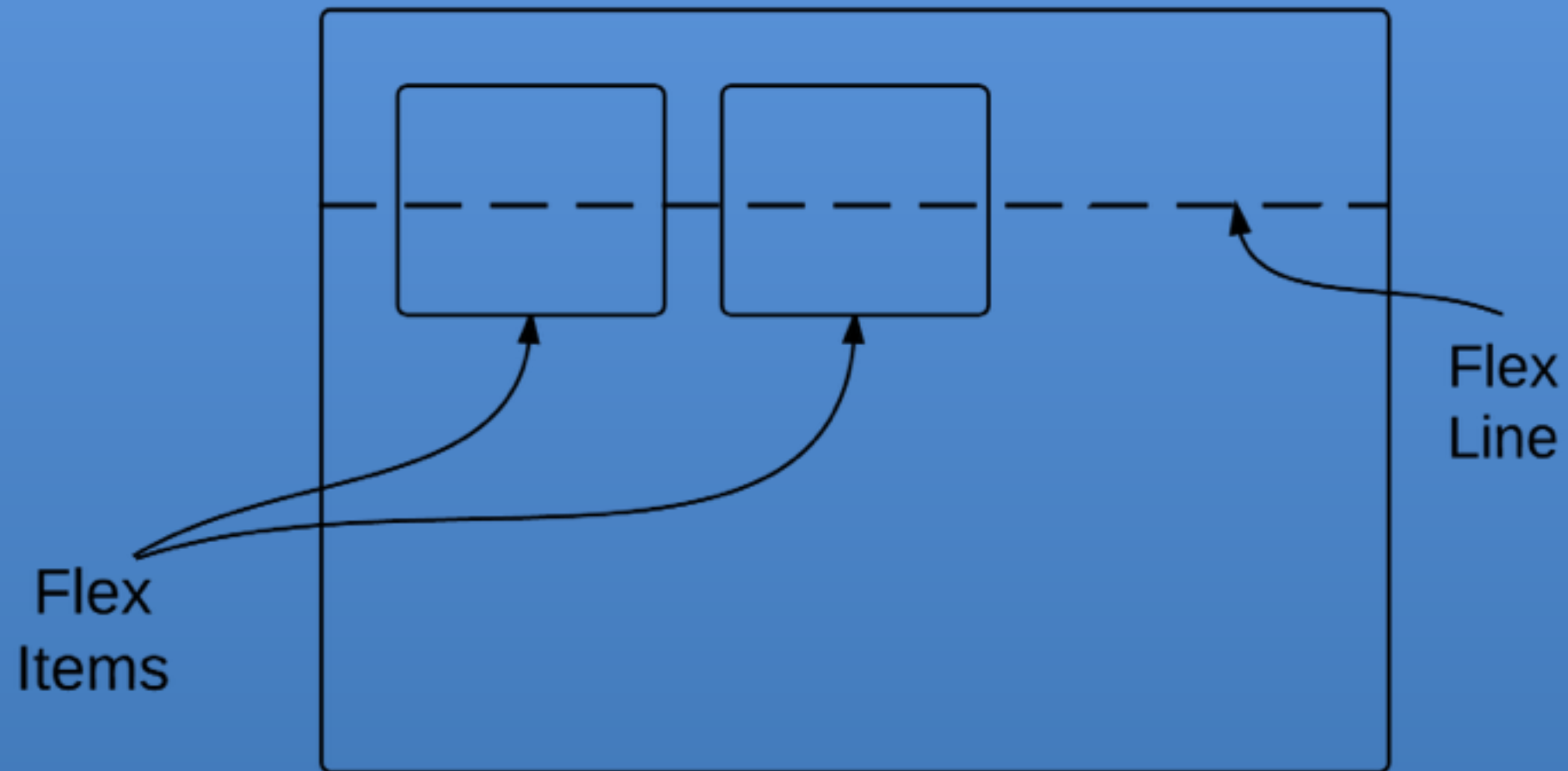- Limited but increasing support for Flexbox

  - http://caniuse.com/flexbox - Chrome 21+, Firefox 18+, IE 10+, Safari 6.1+, Android Browser 2.1+, iOS Safari 7.0+, IE Mobile 11+, etc. (Some version require --moz, --webkit, --ms prefixes)

  - Polyfill for Flexbox (http://flexiejs.com/) - still a work in progress.

- Concerns over performance

  - http://css-tricks.com/does-flexbox-have-a-performance-problem/

  - http://updates.html5rocks.com/2013/10/Flexbox-layout-isn-t-slow

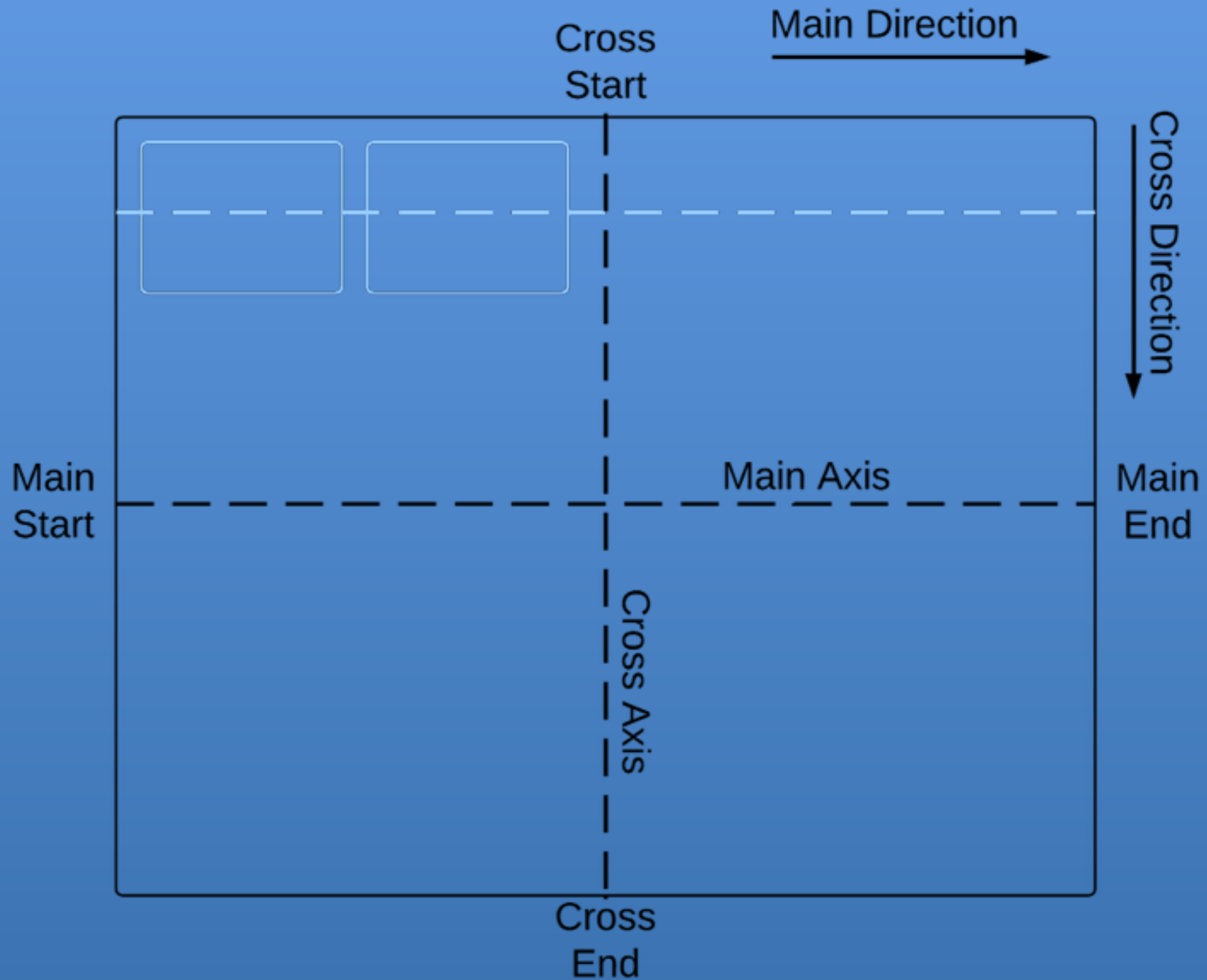 - http://benfrain.com/css-performance-test-flexbox-v-css-table-fight/

- Is Flexbox ready for primetime?

Anatomy & Terminology

- Flex Container: "display: flex" or "display: inline-flex" on an element
- Flex Item: immediate child (element or text) of the flex container

Anatomy & Terminology

Demo

flex container with flex items
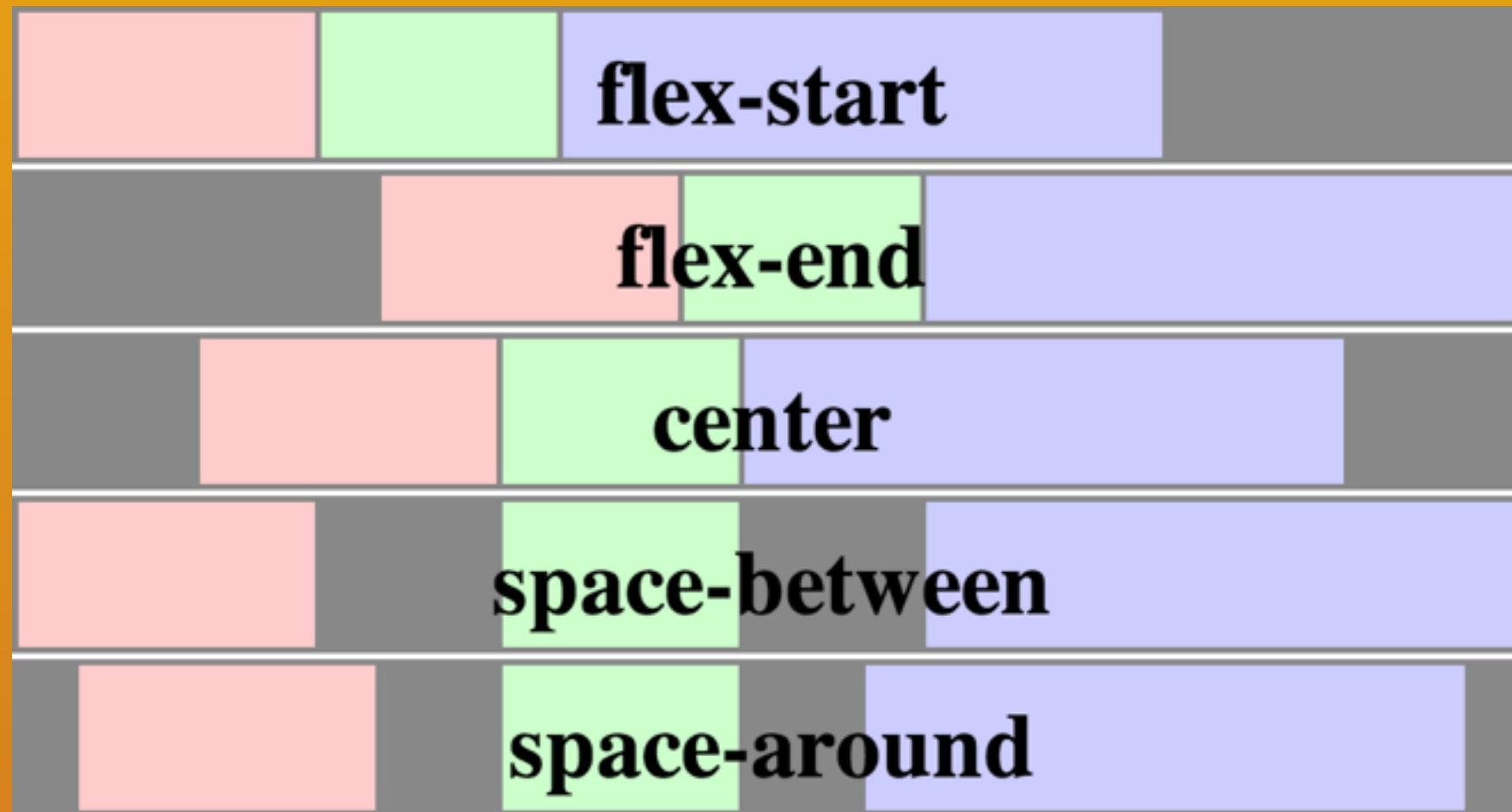
Flex Container Properties
flex-flow

- "flex-direction" change the axes of the Flex Container

  - Values: row (default), row-reverse, column, and column-reverse.

- "flex-wrap" lets you create Flex Containers with multiple Flex Lines. Values: nowrap (default), wrap, and wrap-reverse

- "flex-flow" is a convenient shorthand for "flex-direction" and "flex-wrap"

Demo

flex-flow (flex-direction & flex-wrap)
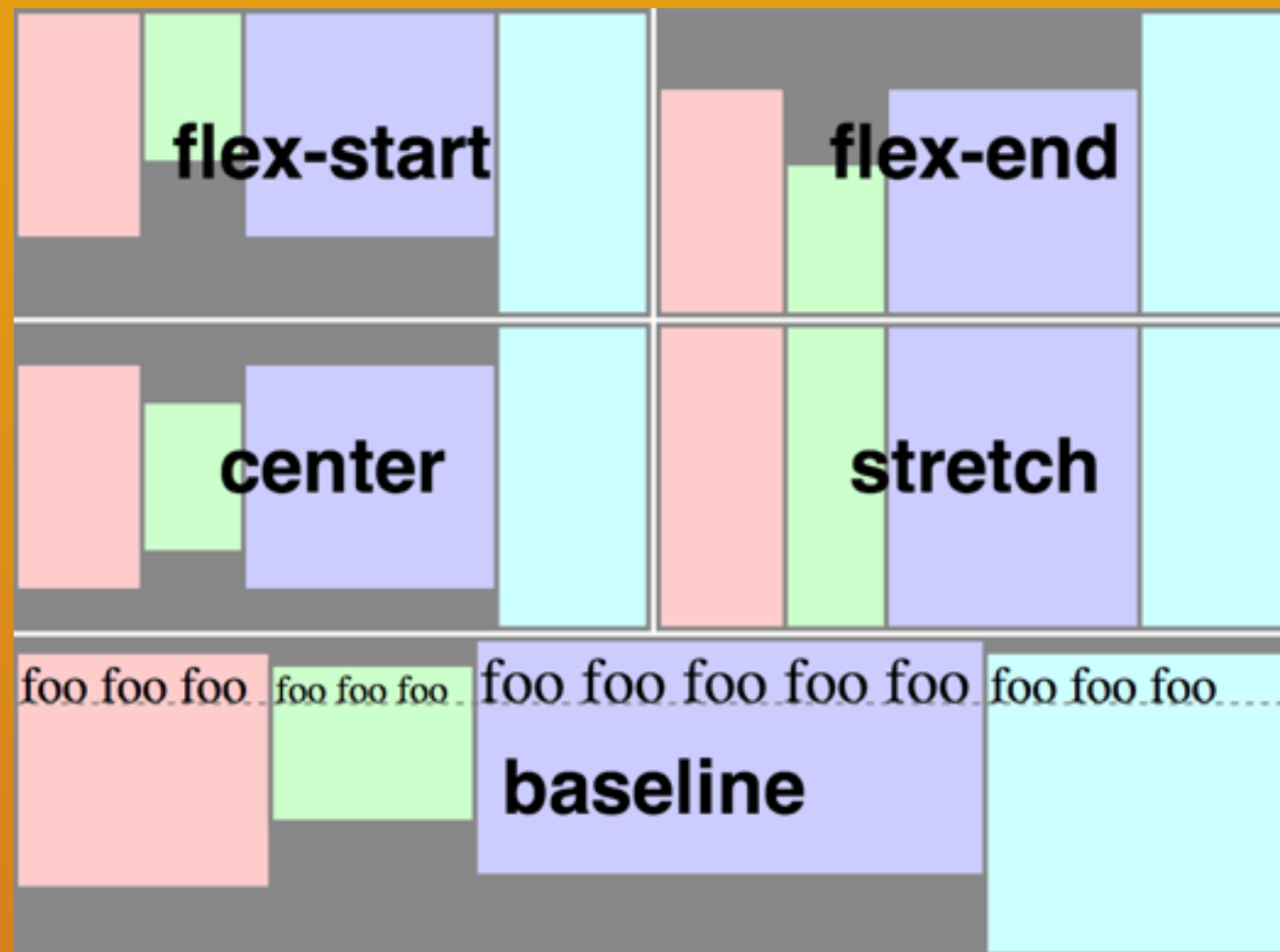
Flex Container

justify-content

- "justify-content" adjusts the positions of Flex Items on the Main Axis - default is flex-start

Demo

justify-content
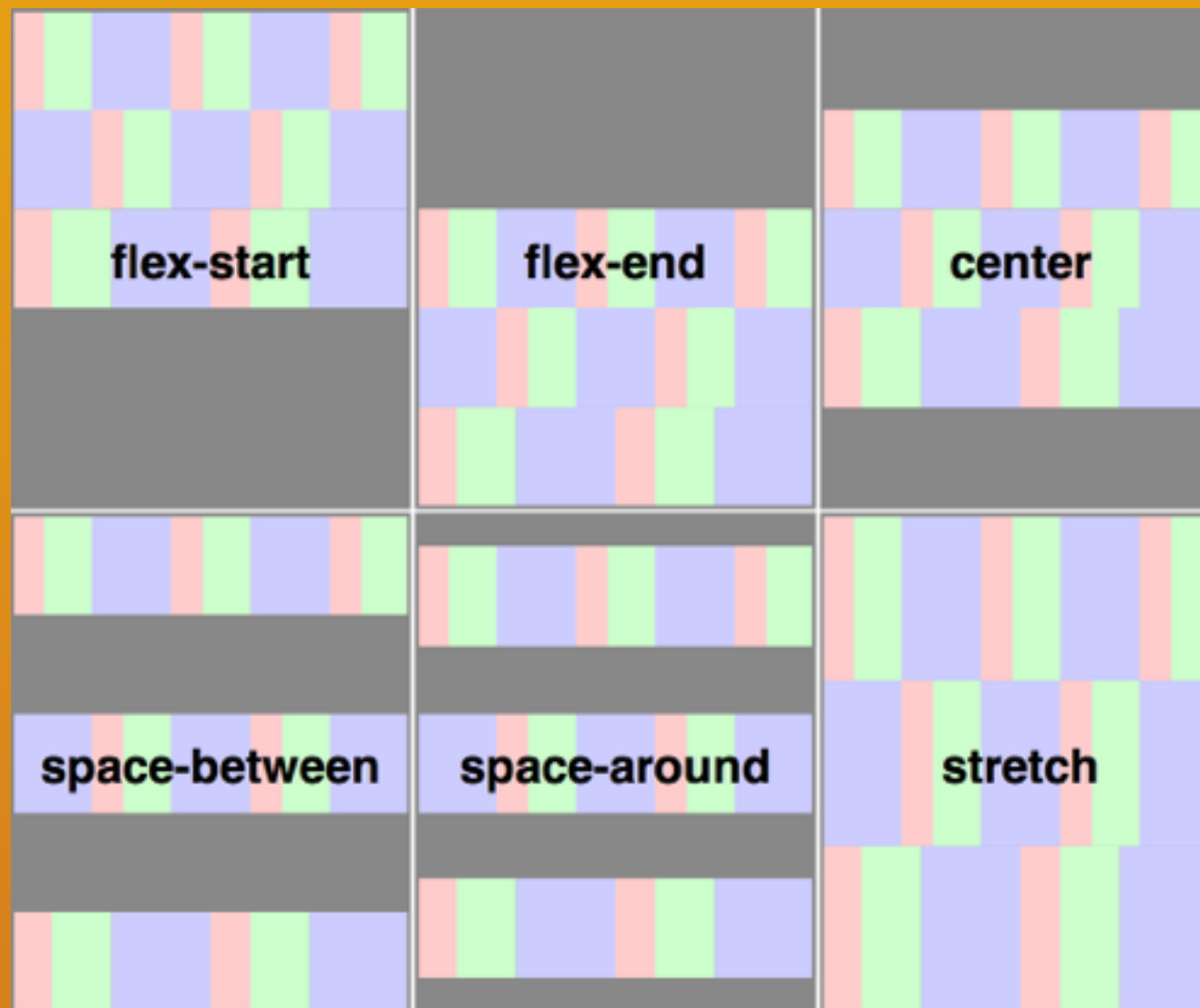
Flex Container

align-items

- "align-items" adjusts the way Flex Items are positioned on the Cross Axis - default is flex-start

Demo

align-items

Flex Container

align-content

- "align-content" modifies flex-wrap and aligns flex lines on the cross axis - default is stretch.

Demo

align-content

Flex Item Properties
margin and align-self

- "margin" works normally, but absorbs extra space

- "align-self" overrides container's "align-items" for a flex-item - default is stretch

Demo

margin: auto; margin-right: auto; and align-self

Flex Item Properties
flex

- "flex" controls how a flex item will be prioritized when distributing free space on the main axis

- The number is the ratio of free space the flex item can take relative to other flex items.

- Values: initial, auto, none

Demo

flex (basic)

Flex Item Properties
flex

- "flex" is shorthand for "flex-grow", "flex-shrink", and "flex-basis"

  flex: 1 1 100%; == flex-grow: 1; flex-shrink: 2; flex-basis: 100%;

- flex-grow default is 0

Demo

flex (advanced)

Flex Item Properties
order

- "order" - adjusts the order of a flex item relative to other flex items, independent of source order :)

Demo

order w/Holy Grail Layout

Playground

Flexplorer (http://bennettfeely.com/flexplorer/)

Flexy Boxes (http://the-echoplex.net/flexyboxes/)

CSS Flexbox Please! (http://demo.agektmr.com/flexbox/)

Problems Solved by Flexbox

http://philipwalton.github.io/solved-by-flexbox/

Thanks & Questions?