

# Grid, content re-ordering and accessibility

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CSS layout has changed

There are new problems alongside  
our new powers.

## This talk covers:

- Potential accessibility problems.
- Ways to avoid those problems.
- Web platform improvements to help.

# CSS Grid

Separation of content and presentation for the first time

```
<table>
  <tr>
    <td colspan="3">My header</td>
  </tr>
  <tr>
    <td></td>
    <td></td>
    <td></td>
  </tr>
</table>
```



A demonstration of what can be accomplished through `CSS`-based design. Select any style sheet from the list to load it into this page.

Download the example  HTML FILE and  CSS FILE

## THE ROAD TO ENLIGHTENMENT

Littering a dark and dreary road lay the past relics of browser-specific tags, incompatible `DOMs`, broken `CSS` support, and abandoned browsers.

We must clear the mind of the past. Web enlightenment has been achieved thanks to the tireless efforts of folk like the `W3C`, `WASP`, and the major browser creators.

The CSS Zen Garden invites you to relax and meditate on the important lessons of the masters. Begin to see with clarity. Learn to use the time-honored techniques in new and invigorating fashion. Become one with the web.

## SO WHAT IS THIS ABOUT?

There is a continuing need to show the power of `CSS`. The Zen Garden aims to excite, inspire, and encourage participation. To begin, view some of the existing designs in the list. Clicking on any one will load the style sheet into this very page. The `HTML` remains the same, the only thing that has changed is the external `CSS` file. Yes, really.

`CSS` allows complete and total control over the style of a hypertext document. The only way this can be illustrated in a

MID CENTURY MODERN  
*by* Andrew Lohman

GARMENTS  
*by* Dan Mall

STEEL  
*by* Steffen Knoeller

APOTHECARY  
*by* Trent Walton

SCREEN FILLER  
*by* Elliot Jay Stocks

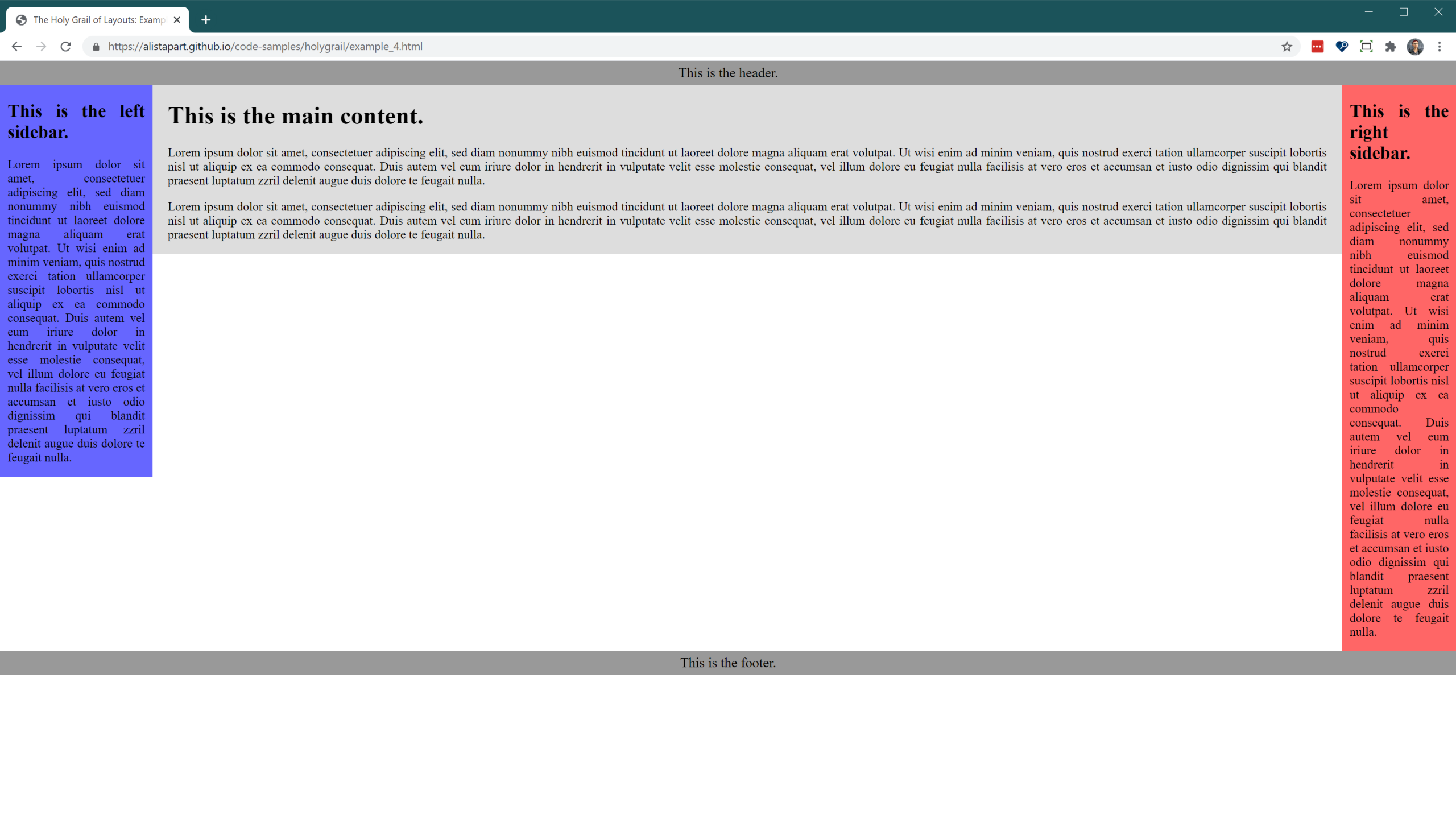
FOUNTAIN KISS  
*by* Jeremy Carlson

A ROBOT NAMED JIMMY  
*by* meltmedia

# The “Holy Grail” layout

<https://alistapart.com/article/holygrail/>





This is the header.

## This is the left sidebar.

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## This is the main content.

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## This is the right sidebar.

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This is the footer.

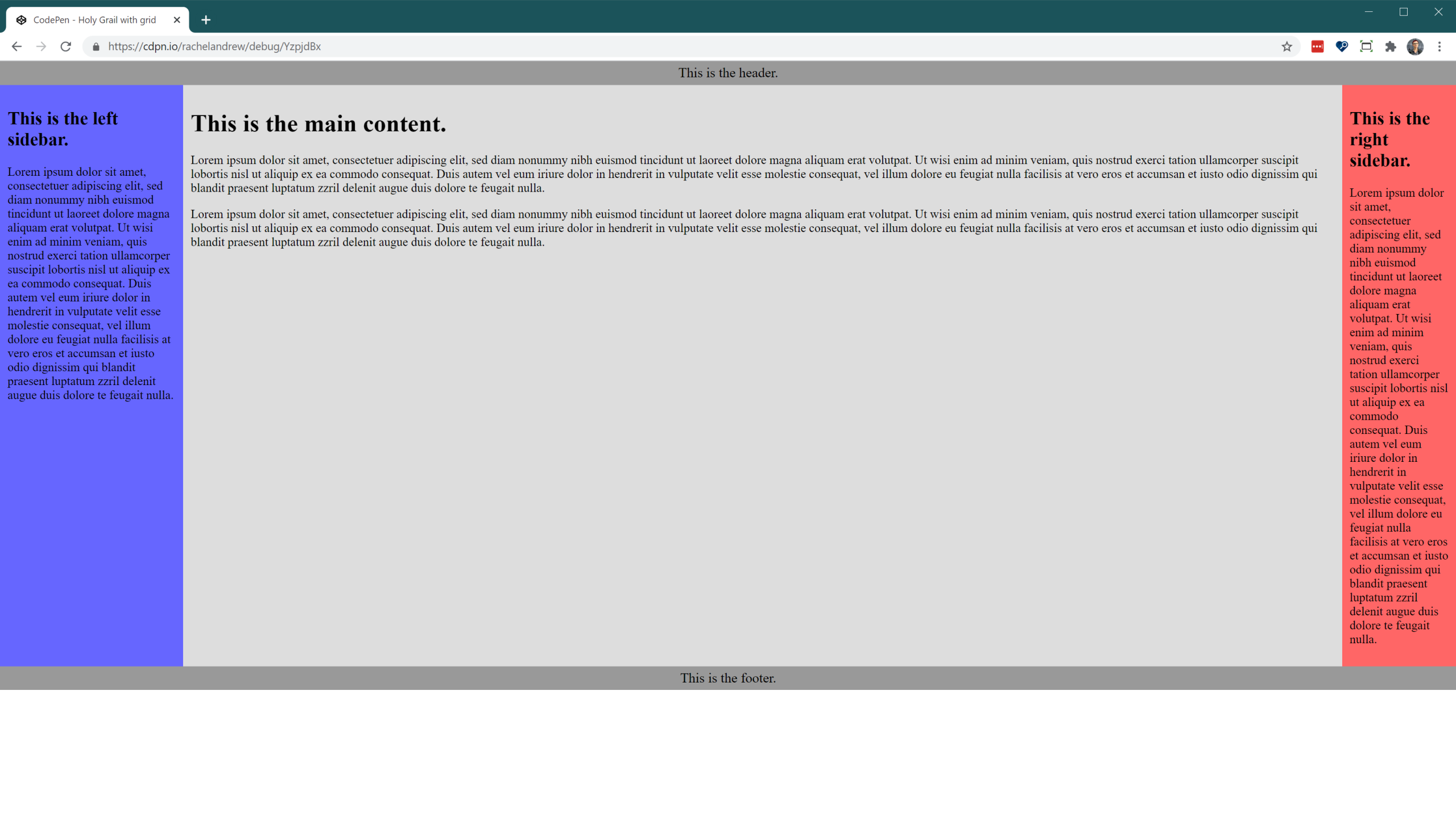
```
<div class="row">
  <div class="col-md-4">.col-md-4</div>
  <div class="col-md-4">.col-md-4</div>
  <div class="col-md-4">.col-md-4</div>
</div>
<div class="row">
  <div class="col-md-6">.col-md-6</div>
  <div class="col-md-6">.col-md-6</div>
</div>
```

We couldn't get too far away from  
the document source order

# Normal flow

The design and content had to flow together

```
body {  
  display: grid;  
  grid-template-columns: 240px 1fr 150px;  
  grid-template-areas:  
    "hd hd hd"  
    "lt bd rt"  
    "ft ft ft";  
}  
  
#left { grid-area: lt;}  
  
#header { grid-area: hd; }  
  
#footer { grid-area: ft; }  
  
#right { grid-area: rt; }  
  
#center { grid-area: bd; }
```



## This is the left sidebar.

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## This is the main content.

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## This is the right sidebar.

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# The technical limitation has gone

Just because you can doesn't mean you should.

```
ul {
  display: grid;
  gap: 20px;
  grid-template-columns: repeat(6, minmax(0,1fr));
  grid-template-areas:
    "a a b b b b"
    "c c d d e e"
    "f f g g h h";
}
```

```
.card1 { grid-area: c; }
.card2 { grid-area: f; }
.card3 { grid-area: d; }
.card4 { grid-area: h; }
.card5 { grid-area: e; }
.card6 { grid-area: a; }
.card7 { grid-area: g; }
.card8 { grid-area: b; }
```





```
ul {  
  display: grid;  
  gap: 20px;  
  grid-template-columns: repeat(7, minmax(0,1fr));  
  grid-auto-flow: dense;  
}
```



```
nav ul {  
  display: flex;  
  gap: .2em;  
  flex-direction: row-reverse;  
}
```



# Avoiding source/layout disconnect

How can web developers avoid this problem?

# Don't forget about the document

Can you load your document without CSS and it still make sense?

Work with normal flow.



A well-ordered document makes  
creating fallbacks much easier.

Resist the temptation to flatten your  
source to make everything a child of  
the grid container.

# subgrid

Allowing child grid to inherit track sizing from a parent.

## Card title 1 is a longer title

---

Gumbo beet greens corn soko endive  
gumbo gourd. Parsley shallot courgette  
tatsoi pea sprouts fava bean collard  
greens dandelion okra wakame tomato.

[More about card 1](#)

## Card title 2

---

Gumbo beet greens corn soko endive  
gumbo gourd

[More about card 2](#)

## Card title 3

---

Celery quandong swiss chard chicory  
earthnut pea potato. Salsify taro catsear  
garlic gram celery bitterleaf wattle seed  
collard greens nori. Grape wattle seed  
kombu beetroot horseradish carrot  
squash brussels sprout chard.

[More about card 3](#)

```
.cards {
  display: grid;
  gap: 20px;
  grid-template-columns: repeat(3, 1fr);
}

.cards li {
  display: grid;
  grid-template-rows: auto 1fr auto;
}

@supports (grid-template-rows: subgrid) {
  .cards {
    grid-auto-rows: auto 1fr auto;
  }
  .cards li {
    grid-row: auto / span 3;
    grid-template-rows: subgrid;
    gap: 0;
  }
}
```

## Card title 1 is a longer title

---

Gumbo beet greens corn soko endive  
gumbo gourd. Parsley shallot courgette  
tatsoi pea sprouts fava bean collard  
greens dandelion okra wakame tomato.

More about card 1

## Card title 2

---

Gumbo beet greens corn soko endive  
gumbo gourd

More about card 2

## Card title 3

---

Celery quandong swiss chard chicory  
earthnut pea potato. Salsify taro catsear  
garlic gram celery bitterleaf wattle seed  
collard greens nori. Grape wattle seed  
kombu beetroot horseradish carrot  
squash brussels sprout chard.

More about card 3

<https://cdpn.io/VwmEMap>

# display: contents;

Remove boxes from visual layout

```
<div class="flex">
  <div class="item"><a href="/">Flex item 1</a></div>
  <div class="item"><a href="/">Flex item 2</a></div>
  <ul>
    <li><a href="/">One</a></li>
    <li><a href="/about">Two</a></li>
    <li><a href="/history">Three</a></li>
  </ul>
</div>
```



Flex item 1

Flex item 2

One  
Two  
Three

```
.flex ul {  
  display: contents;  
}
```

Flex item 1

Flex item 2

One

Two

Three

<https://cdpn.io/oNYapVb>

# Warning!

A bug in display: contents implementation can cause elements to be removed from the accessibility tree.

# Don't fix source problems with grid or flexbox

For example: using order to rearrange items.

[Home](#)

[About](#)

[History](#)

[Penguins](#)

[Contact](#)

```
ul {  
  display: flex;  
  gap: .2em;  
}  
  
li:nth-child(4) {  
  order: -1;  
}
```





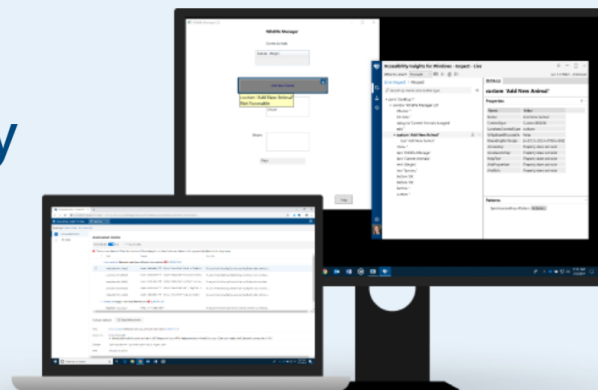
# Start with a solid document

Some good advice never changes!

# Test tab ordering

# Solve accessibility issues before they reach your customers.

Get Accessibility Insights



## For Android

Windows, Linux, and MacOS desktop tool to test accessibility of Android applications

[Learn about Accessibility Insights for Android](#)

## For Web

Browser extension for Chrome and the new Microsoft Edge to test accessibility of webpages and web applications

[Learn about Accessibility Insights for Web](#)

## For Windows

Windows desktop tool to test accessibility of Windows applications

[Learn about Accessibility Insights for Windows](#)

Ship accessible products to your customers

Card title 6

Nori grape silver beet broccoli kombu  
beet greens fava bean potato quandong  
celery.

More about card 6

Card title 8

Gumbo kakadu plum komatsuna black-eyed pea.

More about card 8

Card title 1

Veggies es bonus vobis, proinde vos  
postulo essum magis.

More about card 1

Card title 3

Turnip greens yarrow ricebean rutabaga  
endive cauliflower.

More about card 3

Card title 5

Brussels sprout coriander water chestnut  
gourd swiss chard.

More about card 5

Card title 2

Gumbo beet greens corn soko endive  
gumbo gourd

More about card 2

Card title 7

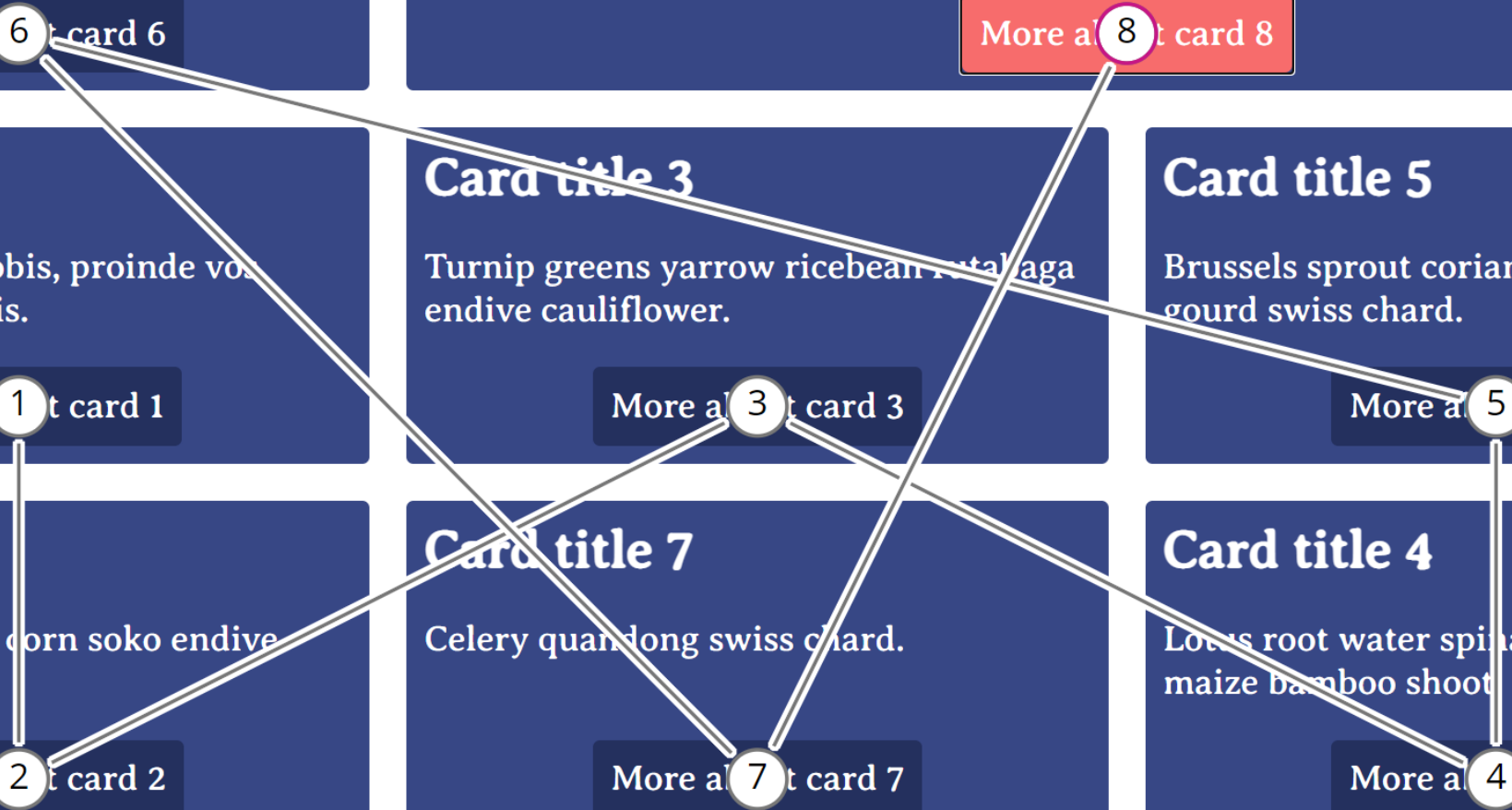
Celery quandong swiss chard.

More about card 7

Card title 4

Lotus root water spinach fennel kombu  
maize bamboo shoot

More about card 4



Check that changing display type  
has not changed how things report  
to accessibility technology.

# Solving this problem

Allowing developers to take advantage of content re-ordering

Why doesn't the tab order default to following the layout?

The web is about good defaults



Initial values of CSS properties stop things vanishing or stacking on top of each other.

Tab order following the document is  
a good default. It makes sure we  
have a sensible document.

I believe that we need to find a way  
to allow developers to indicate a  
switch to follow visual layout.

# Spatial navigation

<https://www.w3.org/TR/css-nav-1>

Telling the browser that you are  
taking control of order.

```
<div class="container" progress-order="layout">
```

We need to keep having this  
conversation.

We need to solve this before adding  
more new layout methods.



We need to solve it before more web layout is created in visual tools.

# Join the conversation

<https://github.com/w3c/csswg-drafts/issues/5675>

# Thank you!

<https://noti.st/rachelandrew>