Foldable/dual-screen form factors

CS50

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Surface Duo 2

- Two screens
- Front and back cameras
- Android 11
- NFC
- 5G
- and more...
Responsive design
- Media queries
- Environment variables
- JavaScript

Testing
- Browser developer tools (Edge and Chrome)

Progressive Web Apps (PWA)
- Starter kit

Docs & samples
- Design Kit guidance
- Dual-screen web docs
- Other developer platforms
Building apps for foldable/dual-screen devices

https://docs.microsoft.com/dual-screen
Responsive design
Responsive design
Responsive design
Responsive design

About Surface Duo

Surface Duo is a new dual-screen device that fits in your pocket, based on Android. With two screens connected by a revolutionary 360° hinge, Surface Duo brings together the best of Microsoft and Android to reimagine productivity on the go. Your Android and Xamarin/Android apps will just work on the Surface Duo, but you can take a few steps to make them work better and take advantage of the dual-screen nature of the Surface Duo to provide unique experiences for your users.

For more info, see Introducing Surface Duo.
A new class of devices...
How can we handle this?
Media queries in CSS

```css
@media print {
    // styles applied only when printing/previewing
    // set appropriate layouts and colors
    // (i.e. no background color)
}

@media screen and (max-width: 600px) {
    // narrow screens only (like mobile)
    // hide or shrink elements
}

<link rel="stylesheet" media="print" href="example.css" >
```
Media queries – print

```css
@media print {
    // styles applied only when printing/previewing
    // set appropriate layouts and colors

    // e.g. no background color
    html {background-color: white;}

    // e.g. hide menus or nav
    .nav {display:none;}
}
```
Media queries – print
About Surface Duo

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For more info, see Introducing Surface Duo.
Media queries – screen width

```css
@media screen and (max-width: 600px) {
  // narrow screens only (like mobile)
}

@media screen and (min-width: 768px) {
  // wide screens (like maximized desktop)
}

@media (min-width: 768px) {
  // 'screen' is optional
  // wide screens (like maximized desktop)
}
```
Media queries - width
We need a new @media standard!

World Wide Web Consortium (W3C)
https://www.w3.org/

Proposal process
https://github.com/w3c/csswg-drafts/issues/4736

Adoption…

Microsoft Edge

Google Chrome
New media query

```css
@media (screen-spanning: single-fold-vertical) {
    // styles applied in double-portrait (wide) mode
}

@media (screen-spanning: single-fold-horizontal) {
    // styles applied in double-landscape (tall) mode
}
```
New environment variables

env(fold-left)
env(fold-top)
env(fold-width)
env(fold-height)
```javascript
const screenSegments = window.getWindowSegments();

if (screenSegments.length > 1) {
    // now we know the device is a foldable
    // and we can update CSS classes in our layout
    document.body.classList.add('is-foldable');
    // other changes as required for layout
}
```
```css
@media (screen-spanning: single-fold-vertical) {
  .yellow {
    height: 100px;
    width: calc(100vw - env(fold-left) - env(fold-width)); /*fold-right*/
    position: absolute;
    left: calc(env(fold-left) + env(fold-width)); /*fold-right*/
    top: 0;
    background-color: #yellow;
    text-align: center;
  }
}
...but what about this?
Updated media query

```css
@media (horizontal-viewport-segments:2) {
  // styles applied in double-portrait (wide) mode
}
@media (vertical-viewport-segments:2) {
  // styles applied in double-landscape (tall) mode
}
@media (horizontal-viewport-segments:3) {
  // styles applied in triple-portrait (really wide) mode
}
```
Updated environment variables

\texttt{env(viewport-segment-width 0 0)}
\texttt{env(viewport-segment-height 0 0)}
\texttt{env(viewport-segment-right 0 0)}
\texttt{env(viewport-segment-left 1 0)}
const screenSegments = window.visualViewport.segments;

if (screenSegments) {
  if (screenSegments.length > 1) {
    // now we know there are multiple segments
    // and we can update CSS classes in our layout
    document.body.classList.add('is-foldable');
    // other changes as required for layout
  }
}

Testing

Enable via flags

edge://flags

crhome://flags

https://docs.microsoft.com/dual-screen/web/desktop-developer-tools
Samples

- Webboard
- SimpleEdit photos
- Photo gallery
- Battleship game
- FoldNews reader
- StarFold game

https://aka.ms/cs50-demo
Design patterns

**Extended Canvas**
Expand content across the seam

**List-Detail**
Drill down one layer deeper into content

**Two Page**
Document-oriented, made for reading

**Dual View**
Alternate or transient view of the same info

**Companion Pane**
Supporting content or smart suggestions
Surface Duo Design Kit

v 2.1

https://aka.ms/SurfaceDuoDesign
Extended Canvas

Expand content across the seam
List-Detail

Drill down one layer deeper into content
The Roman Colosseum

Contrary to popular belief, Lorem Ipsum is not simply random text. It has roots in a piece of classical Latin literature from 45 BC, making it over 2000 years old. Richard McClintock, a Latin professor at Hampden-Sydney College in Virginia, looked up one of the more obscure Latin words, consectetur, from a Lorem Ipsum passage, and going through the cites of the word in classical literature, discovered the undoubtable source.

Why do we use it?

It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout. The point of using Lorem Ipsum is that it has a more-or-less normal distribution of letters, as opposed to using ‘Content here, content here’, making it look like readable English. Many desktop publishing packages and web page editors now use Lorem Ipsum as their default model text, and a search for ‘Lorem ipsum’ will uncover many web sites still in their infancy.

Where can I get some?

There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don’t look even slightly believable. If you are going to use a passage of Lorem Ipsum, you need to be sure there isn’t anything embarrassing hidden in the middle of text. All the Lorem Ipsum generators on the Internet tend to repeat predefined chunks as necessary, making this the first true generator on the Internet. It uses a dictionary of over 200 Latin words, combined with a handful of model sentence structures, to generate Lorem Ipsum which looks reasonable.
Dual View

Alternate or transient view of the same info
Companion Pane

Supporting content or smart suggestions
We look forward to welcoming you to the latest show and meeting everyone who's joining us!

Lots of people have confirmed the invite so just make sure that you have as well so we can ensure you're names on the list!

We're going to start with some food and drinks and then we'll officially introduce everyone to your teams so make sure you go around and meet everyone. This should be a lot of fun!

Can't wait to see all of you!
Atlassian Jira Cloud
## Other developer platforms

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Surface Duo Emulator
Enhance your final project

What will you do with that extra screen?
Progressive Web Apps (PWA)

• Build for web (HTML, CSS, JavaScript)
• Deploy to web
• Bundle as downloadable/installable apps
  • Desktop
  • Mobile

aka.ms/pwa-starter
aka.ms/starter-docs
Responsive design
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Thank you.

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