YOU SHOULD SEE A DR. ABOUT YOUR

SCALING
Phaser ScaleManager

“The ScaleManager object handles the the scaling, resizing, and alignment of the Game size and the game Display canvas.”

Phaser CE ScaleManager Documentation
Class: ScaleManager

Phaser. ScaleManager

The ScaleManager object handles the scaling, resizing, and alignment of the Game size and the game Display canvas.

The Game size is the logical size of the game; the Display canvas has size as an HTML element.

The calculations of these are heavily influenced by the bounding Parent size which is the computed dimensions of the Display canvas's Parent container/element – the effective CSS rules of the canvas’s Parent element play an important role in the operation of the ScaleManager.

The Display canvas - or Game size, depending scaleMode - is updated to best utilize the Parent size. When in Fullscreen mode or with parentisWindow the Parent size is that of the visual viewport (see getParentBounds).

Parent and Display canvas containment guidelines:

- Style the Parent element (of the game canvas) to control the Parent size and thus the Display canvas's size and layout.
- The Parent element's CSS styles should effectively apply maximum (and minimum) bounding behavior.
- The Parent element should not apply a padding as this is not accounted for. If a padding is required apply it to the Parent's parent or apply a margin to the Parent. If you need to add a border, margin or any other CSS around your game container, then use a parent element and apply the CSS to this instead, otherwise you'll be constantly resizing the shape of the game container.
- The Display canvas layout CSS styles (i.e. margins, size) should not be altered/specifed as they may be updated by the ScaleManager.

Example Uses

- Fixed game size; scale canvas proportionally to fill its container
  - Use scaleMode SHOW_ALL.

- Fixed game size; stretch canvas to fill its container (uncommon)
  - Use scaleMode EXACT_FIT.

- Fixed game size; scale canvas proportionally by some other criteria
  - Use scaleMode USER_SCALE. Examine parentBounds in the resize callback and call setUserScale if necessary.

- Fluid game/canvas size
  - Use scaleMode RESIZE. Examine the game or canvas size from the onSizeChange signal or the Phaser.State#resize callback and reposition game objects if necessary.

- Preferred orientation
  - Call forceOrientation with the preferred orientation and use any of the onOrientationChange, enterIncorrectOrientation, or leaveIncorrectOrientation signals.
SETTING THE SCALE MODE

```javascript
create: function() {
    // set scaling
    game.scale.scaleMode = Phaser.ScaleManager.SHOW_ALL;
}
```

scaleMode property

a Phaser constant describing what type of scaling we want

Only one line of code gets you proportional scaling!
**scaleMode**: integer

The scaling method used by the ScaleManager when not in fullscreen.

**Phaser.ScaleManager.NO_SCALE**
The Game display area will not be scaled - even if it is too large for the canvas/screen. This mode *ignores* any applied scaling factor and displays the canvas at the Game size.

**Phaser.ScaleManager.EXACT_FIT**
The Game display area will be *stretched* to fill the entire size of the canvas's parent element and/or screen. Proportions are not maintained.

**Phaser.ScaleManager.SHOW_ALL**
Show the entire game display area while *maintaining* the original aspect ratio.

**Phaser.ScaleManager.RESIZE**
The dimensions of the game display area are changed to match the size of the parent container. That is, this mode *changes the Game size* to match the display size. Any manually set Game size (see `setGameSize`) is ignored while in effect.

**Phaser.ScaleManager.USER_SCALE**
The game Display is scaled according to the user-specified scale set by `setUserScale`. This scale can be adjusted in the `resize callback` for flexible custom-sizing needs.

Phaser gives us FIVE options for scaling, of varying usefulness.
BE AWARE OF “PARENT ELEMENTS” 🤖

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>Scaling</title>
  <!-- load external dependencies -->
  <script src="//cdn.jsdelivr.net/npm/phaser-ce@2.13.0"></script>
  <script type="text/javascript" src="scaling01.js"></script>
</head>
<body>
  <!-- Target div for Phaser-created <canvas> -->
  <div id="phaser"></div>
</body>
</html>

In this case, <body> is the “phaser” <div>‘s parent element.
Let’s check our scaling options in index.html and scaling01.js
My God, Nathan, can you do horizontal *and* vertical centering in Phaser?

Why YES...
...BUT YOU’LL NEED SOME C$$

/* using border-box and 0 margin/padding to remove scrollbar when using 100vh */
*
* {
  box-sizing: border-box;
}

body, html {
  margin: 0;
  padding: 0;
}

#container {
  height: 100vh; /* 1vh = 1% of current viewport height */
  min-height: 525px;
  border: 1px solid green;
}

#phaser {
  height: 100%;
}

[ Check out index02.html, scaling02.js, and scale02.css ]
YOU'RE ON A ROLL, NATHAN... HOW ABOUT FULLSCREEN... ?!?!
Next, we need to be aware of Phaser’s rules for using the Fullscreen API.

```
startFullScreen([antialias] [, allowTrampoline] [, options])
```

Display the game in the browser's fullscreen mode.

This *must* be called from a user-input Pointer or Mouse event (and possibly a "user gesture"), e.g.,

- `Phaser.Events#onInputUp`
- `Phaser.Input#onUp` or `Phaser.Input#onTap`
- `click`, `mousedown`, `mouseup`, `pointerup`, or `touchend`

Games within an iframe will also be blocked from fullscreen unless the iframe has the `allowfullscreen` attribute.

The Fullscreen API must be supported by the browser for this to work - it is not the same as setting the game size to fill the browser window. See `compatibility.supportsFullScreen` to check if the current device is reported to support fullscreen mode.

The fullScreenFailed signal will be dispatched if the fullscreen change request failed or the game does not support the Fullscreen API.

Safari blocks access to keyboard events in fullscreen mode (as a security measure).

**Parameters:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Argument</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>antialias</td>
<td>boolean</td>
<td>&lt;optional&gt;</td>
<td></td>
<td>Changes the anti-alias feature of the canvas before jumping in to fullscreen (false = retain pixel art, true = smooth art). If not specified then no change is made. Only works in CANVAS mode.</td>
</tr>
<tr>
<td>allowTrampoline</td>
<td>boolean</td>
<td>&lt;optional&gt;</td>
<td></td>
<td>Internal argument. If false click trampolining is suppressed.</td>
</tr>
<tr>
<td>options</td>
<td>object</td>
<td>&lt;optional&gt;</td>
<td>{navigationUI: 'hide'}</td>
<td>Options passed to requestFullscreen().</td>
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This, for instance, is pretty important.

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Hey, watch out, buddy!

```javascript
create: function() {
    // set scaling for NON fullscreen
    game.scale.scaleMode = Phaser.ScaleManager.SHOW_ALL;
    // set scaling for fullscreen
    game.scale.fullScreenScaleMode = Phaser.ScaleManager.SHOW_ALL;
}
```

Fullscreen gets its own scaling mode! Phaser, you tricksy hobbits!
Be sure to test on different browsers and devices.

[Hop back to index.html with scaling03.js]