A comprehensive guide to using CSS Grid

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How to create responsive layouts with the CSS Grid Layout module.

https://codepen.io/hungryPhilomath/pen/LrdNvb

CSS GRID: QUICK LINKS

How to define the grid
Position items using line numbers
Position items using area names
Create a responsive layout
Fallbacks for older browsers
CSS Grid resources

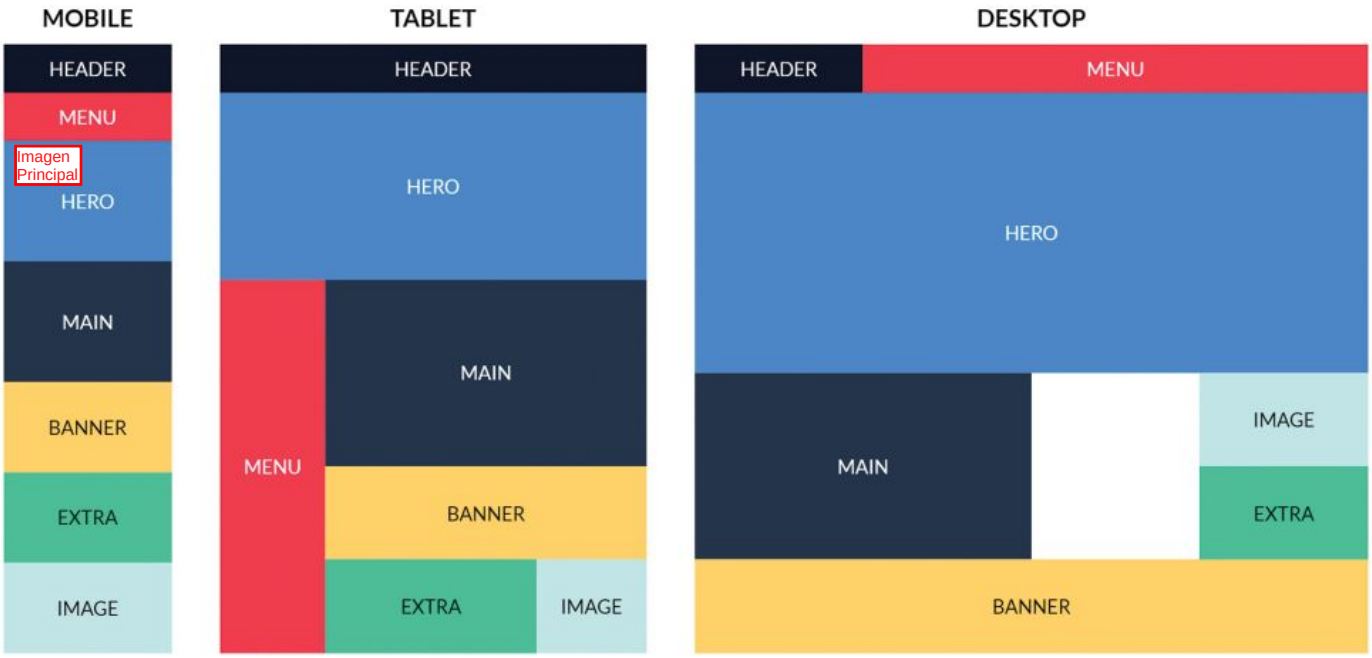
introduce un nuevo y versatil sistema para posicionando elementos dentro un a traves del

The CSS Grid Layout module introduces a new and versatile system for positioning elements within a website layout through the use of a highly customisable grid. CSS Grid is now supported by the last two versions of all major browsers so it's about time we start adopting it in all our projects. In this tutorial we will take an in-depth look at how to use main properties of CSS Grid.

ahora soportado por las ultimas versiones de todos los mayores navegadores

- Check out the code for this tutorial

What is CSS Grid?



With CSS Grid, designers can create completely different device-specific layouts in pure CSS

sin precedentes

CSS Grid is an extremely powerful tool for element layout. It introduces unprecedented flexibility in layout, using just pure CSS and without absolutely positioning elements (a technique that can lead to many problems). CSS Grid enables us to achieve extremely diverse and device-specific layouts from the same exact HTML markup.

no mas tenemos depender posicionamiento absoluto ni manipulación JavaScript DOM a dinámico dan cuenta diseños que cambian de forma

We no longer have to rely on hacks, absolute positioning nor JavaScript DOM manipulation to realise dynamic, shape-shifting layouts. CSS Grid gives designers a blank canvas to create whatever layouts they desire without having to worry about how to

da diseñadores un lienzo blanco crear el cual distribucion ellos deseara sin tener que preocuparte a lograr ellos

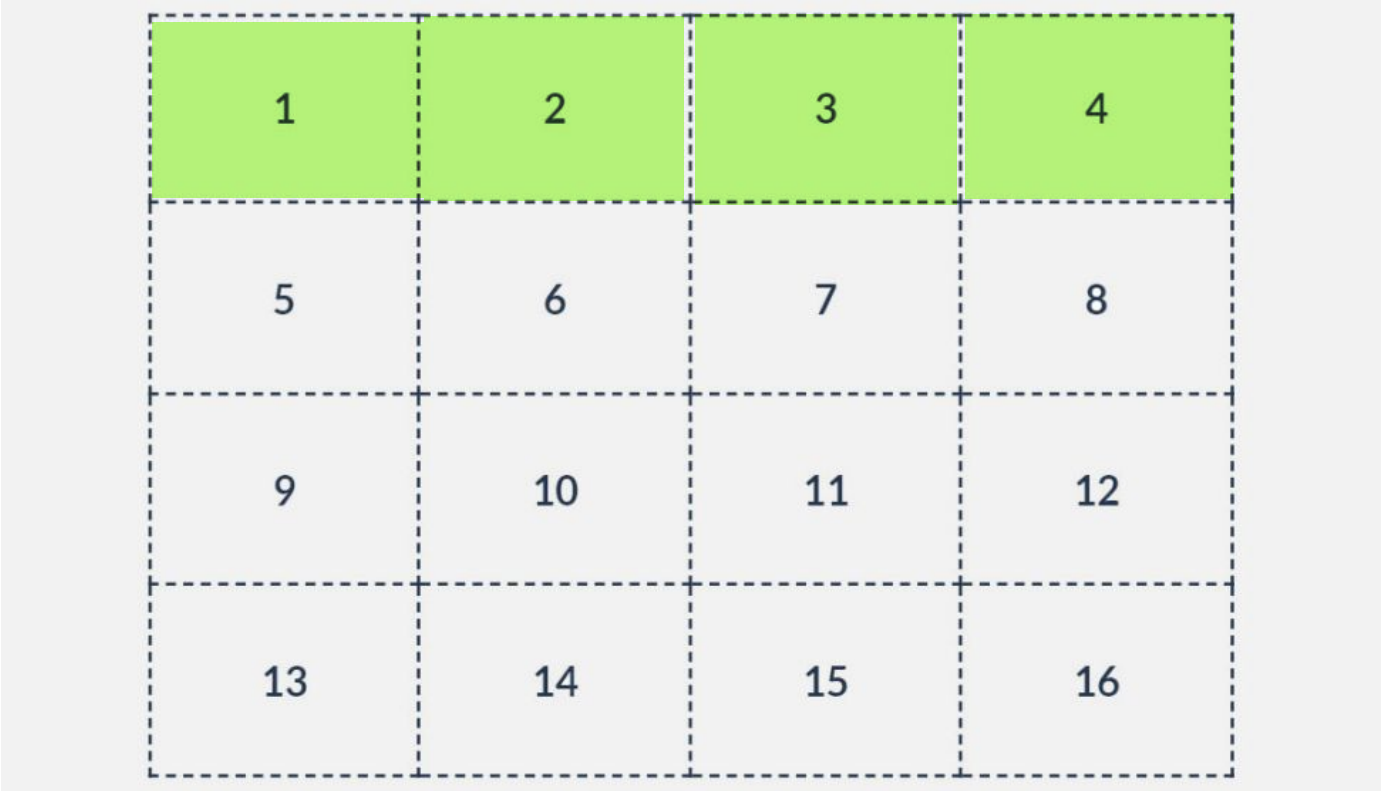
achieve it, ushering in a new era of web design and development with freedom from the CSS limitations and workarounds of the past.

How to define the Grid

In order to create a grid within a container it must be given the CSS property **display: grid**. The number of columns and rows are determined by the number of space-separated sizes assigned to **grid-template-columns** and **grid-template-rows respectively**.

Sizes can be any valid CSS unit such as **px** or **vw**, or the **auto** keyword that enables columns or rows to stretch across available space. For instance, **grid-template-columns: 10px auto** leads to a 10px column followed by a second column that fills all available space.

Grid also uses a 'fractional' unit **fr** that causes any remaining space to be distributed to columns or rows based on the ratios of these units. **grid-template-rows: 1fr 2fr** creates two dynamic rows with the second twice the size of the first, while **grid-template-columns: 1fr 1fr 1fr 1fr** defines four equal-sized columns. The latter can be simplified using the new **repeat()** function to **grid-template-columns: repeat(4, 1fr)**.



Grid with equally sized cells resulting from equal-ratio, dynamic-width columns and 75px tall rows

A grid can therefore be created inside a container of class grid with four equally sized, dynamic columns and four 75px tall rows (as shown above) using:

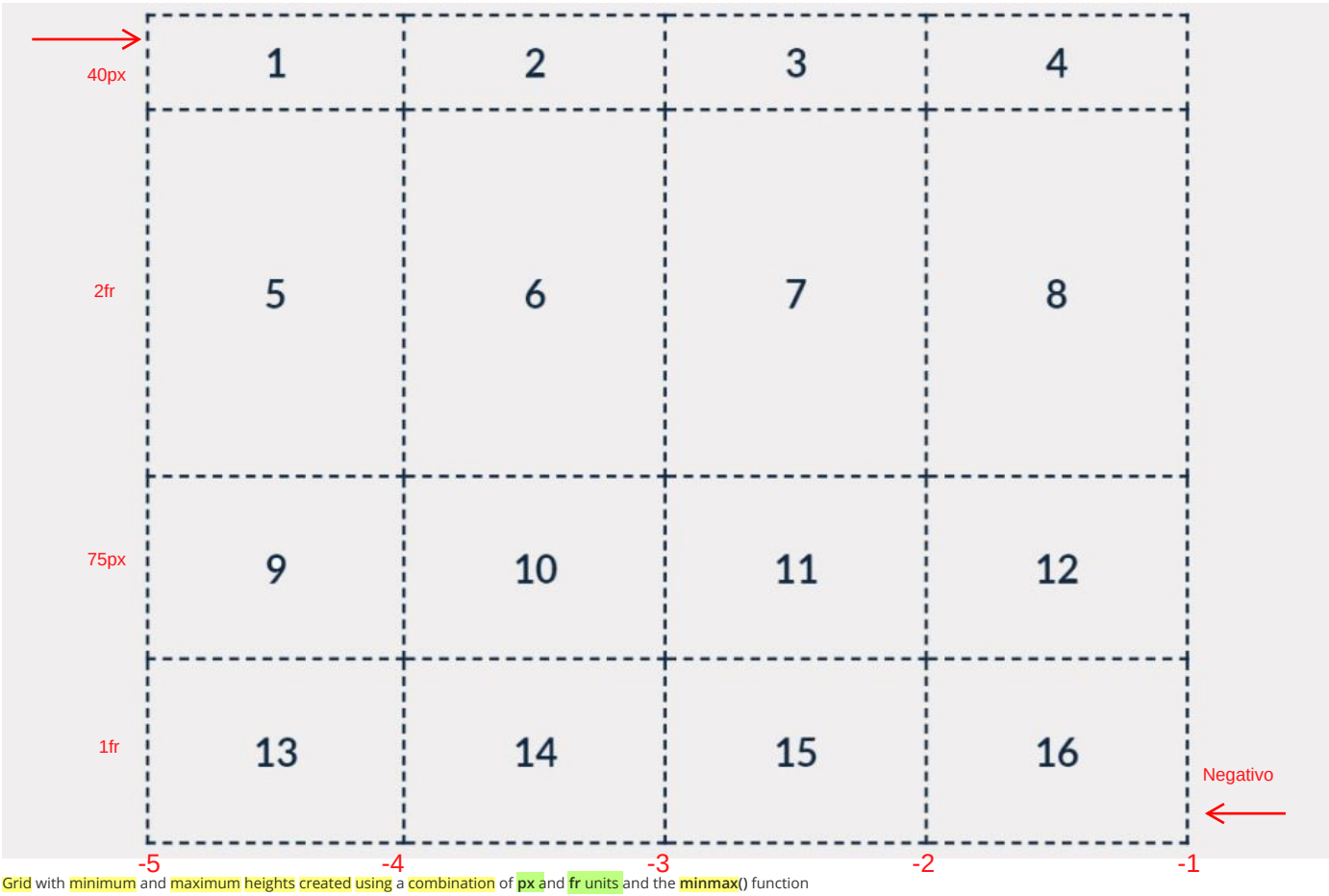
```
.grid {
 display: grid;
 grid-template-columns: repeat(4, 1fr);
 grid-template-rows: repeat(4, 75px);
}
```

Complex grids with unequal sized cells can be created by combining the different units mentioned earlier. We can also use the **minmax()** function to define the minimum and maximum sizes of dynamic columns and rows. Hence, **grid-template-rows: 40px 2fr repeat(2, minmax(75px, 1fr))** leads to four rows with the first 40px tall, the other three stretched over remaining space in a 2:1:1 ratio, and the last two having a minimum height of 75px, which sets the minimum height of the second row to 150px.

Once a grid is created, grid lines, represented by dotted lines in the images, are automatically numbered from the top for rows or from the left for columns. The lines are also given a second, negative number relative to their index from the bottom for rows or from the right for columns.

For instance, the first dotted vertical line on the left in the grids above is 1 and -5, and the third line is 3 and -2. These numbers can be used as the boundary lines of items placed in the grid. The grid lines can also be named by adding a string between square brackets in the property declarations, e.g. **grid-template-rows: [1st] 1fr [second-line] 1fr [last]**.

grid-template-rows: 40px 2fr repeat(2, minmax(75px, 1fr))



Grid with minimum and maximum heights created using a combination of **px** and **fr** units and the **minmax()** function

elementos hijos

Similar to Flexbox, the horizontal and vertical position of items placed in the grid can be controlled by setting **justify-items** and **align-items** respectively, to **start**, **center**, **end** or **stretch**.

The same is applicable for grid column and row positions within a larger container using **justify-content** and **align-content** respectively. Valid options for these properties also include **space-between**, where extra space is divided between columns/rows, as well as **space-around** and **space-evenly** where space is divided evenly between columns/rows with the same or half the amount of space on the ends respectively. We can also define **align-content** and **justify-content** (in that order) using **place-content**, and **align-items** and **justify-items** using **place-items**.

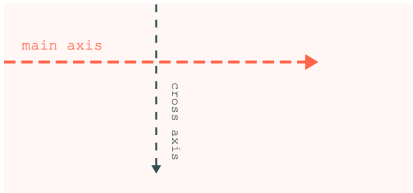
Posicionando Elementos usando numero de las lineas

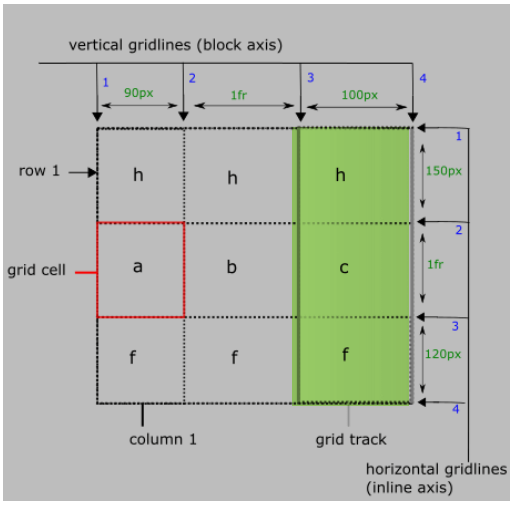
Positioning items using line numbers

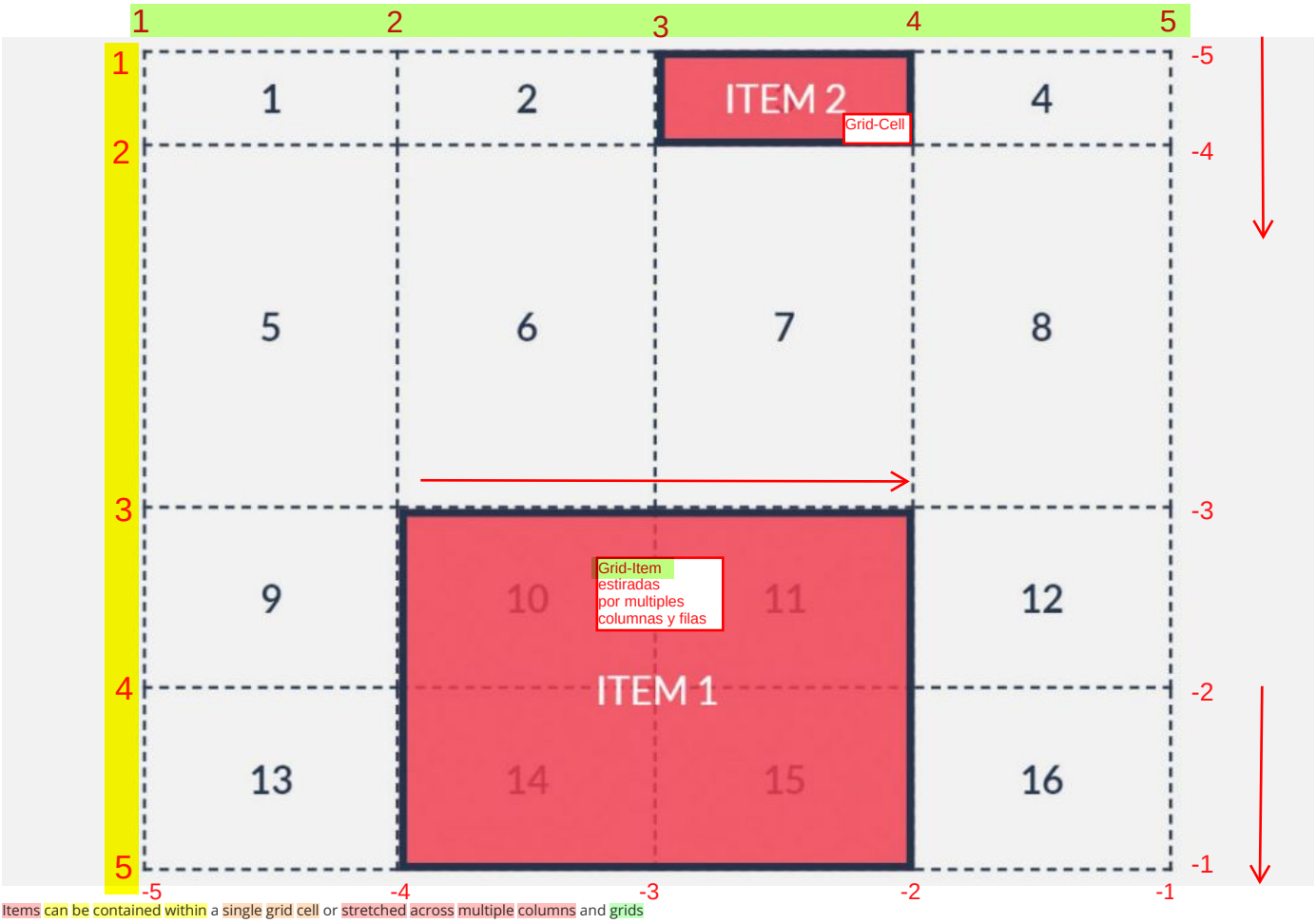
colocar un elemento en un grid podemos establecer propiedades a los linea de numeros verticales entre

To place an item in the grid we can set its **grid-column-start** and **grid-column-end** properties to the vertical line numbers between which the item should be stretched. For rows, the properties are **grid-row-start** and **grid-row-end** – and of course the numbers refer to the horizontal lines.

el cual el elemento deberia estar estirado para filas la propiedad son







Items can be contained within a single grid cell or stretched across multiple columns and grids

Podriamos tambien hacer uso de las claves

We could also make use of the shorthands **grid-column** and **grid-row**, by setting them to only the starting grid line, causing the item to automatically stretch to the next grid line only. As per the image above, using these methods, **item1** can be placed between vertical lines 2 and 4 and horizontal lines 3 and -1 (last line or first from bottom), and **item2** from vertical line 3 and horizontal line 1 to the next grid lines using:

para ajustando ello a solo la comenzanda 'grid-line'

causando el elemento automaticamente estirado a la siguiente grid-line solo

Segun

puede estar emplazado entre lineas verticales 2 y 4

```
#item1 {
 grid-column-start: 2;
 grid-column-end: 4;
 grid-row-start: 3;
 grid-row-end: -1;
}
#item2 {
 grid-column: 3;
 grid-row: 1;
}
```

otro/mas

To simplify further, the declarations **grid-column-start: 2** and **grid-column-end: 4** can be combined together as **grid-column: 2 / 4**, with the same applicable for rows using **grid-row**.

La salvedad/adevertencia con usando ese metodo colocacion is que a veces de la declaracion son algo inapropiados

The caveat with using these placement methods is that some of the declarations are somewhat misnomers. For example, **grid-column-end: 4** and **grid-column: 2 / 4** can be misinterpreted as meaning 'end item placement in column 4' and 'place item in columns 2, 3 and 4' respectively. This is of course not the case as the numbers represent the grid lines rather than columns. To avoid this potential pitfall, we can declare the starting grid line number and the number of columns or rows the item should span across use the span keyword.

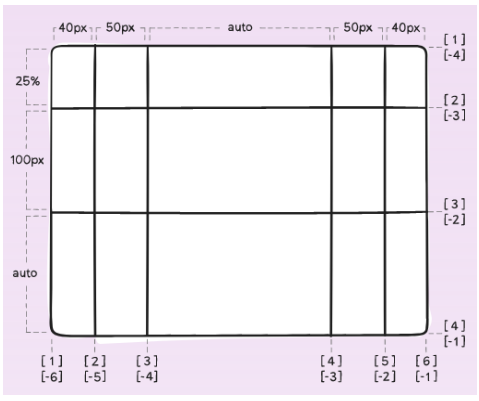
puede ser malintrepretados como significa final elemento colocado en columna 4 y colocado elemento en columna

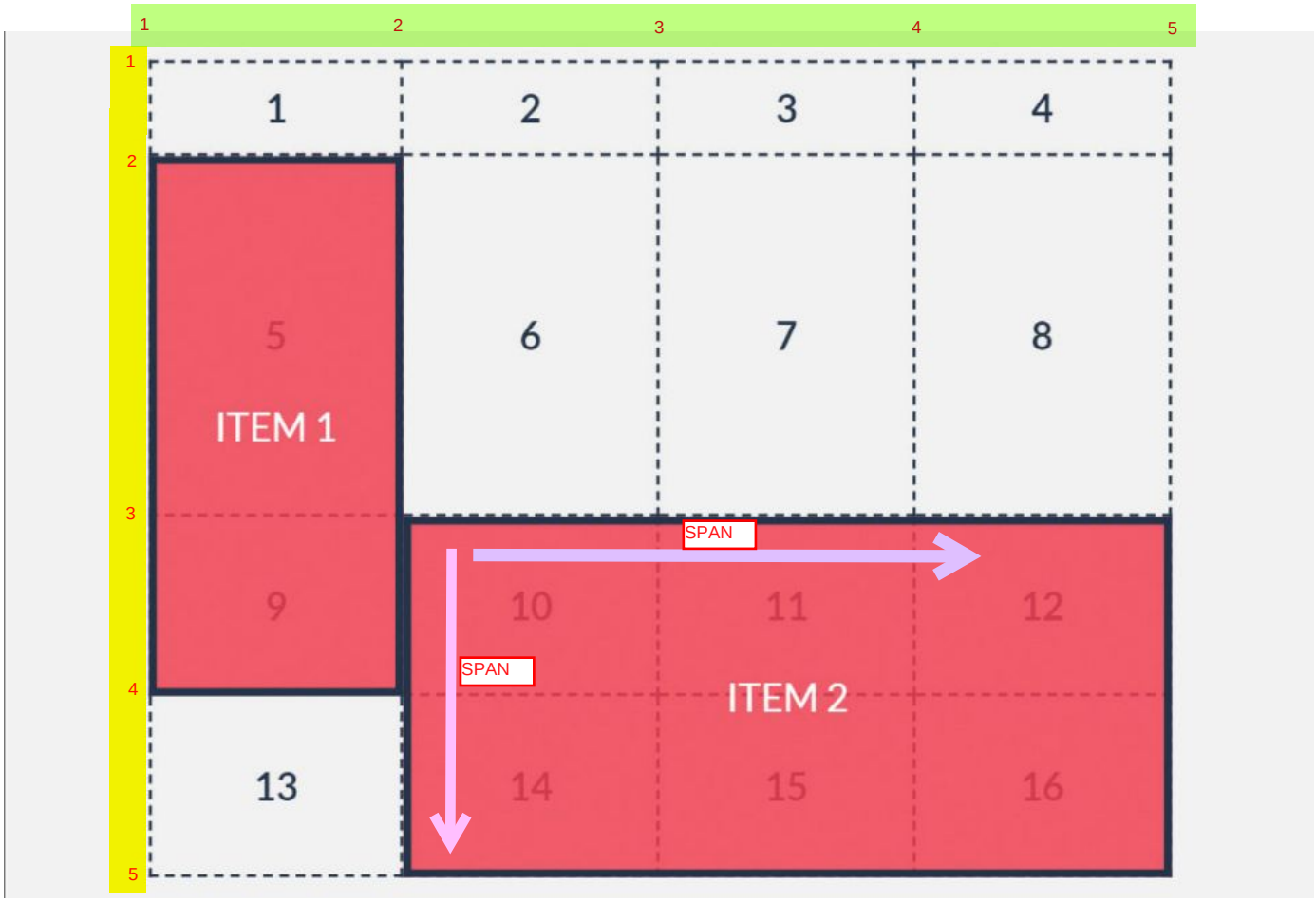
esto es de acuerdo el caso a como los numeros representados para el grid-line en lugar que las columnas

podemos declarar el comienzo numero grid line y el numero de columnas o filas el elemento deberia de espandir

cruzando uso del span

Distribución de los grid-line





Use the span keyword to determine the number of columns or rows you would like an item to span

Using these methods, we can reposition **item1** between horizontal lines 2 and 4 and vertical lines 1 and 2, and item2 starting from vertical line 2 and spanning across three columns and from horizontal line 3 spanning across two rows (as in the image above) using:

```
#item1 {
 grid-column: 1;
 grid-row: 2 / 4;
}
#item2 {
 grid-column: 2 / span 3;
 grid-row: 3 / span 2;
}
```

adicional clave

Believe it or not, item placement can be simplified even further with the property **grid-area**, which is a shorthand for **grid-row-start**, **grid-column-start**, **grid-row-end** and **grid-column-end** in that order. If only the first two properties are defined the item will automatically be placed between those lines and the following ones.

This grid property also enables line numbers to be combined with the span keyword. Applying these methods, we can reposition **item1** and **item2** as such:

```
#item1 {     row start  column start  row end  column end
 grid-area: 2 / 1 / span 2 / span 3;
}
#item2 {
 grid-area: 4 / 4;
}
```

Positioning items using area names

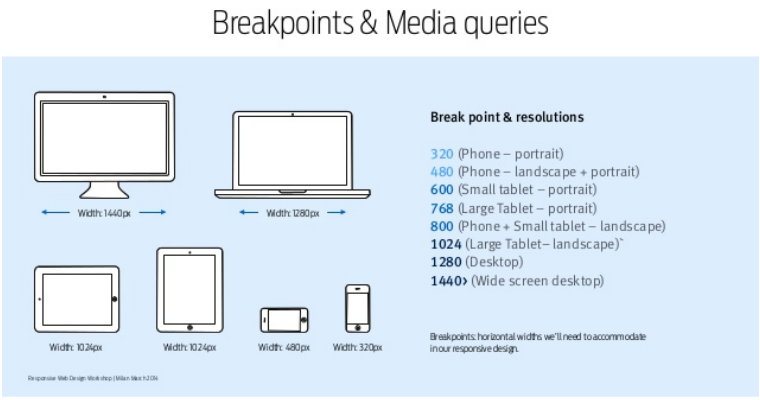
Aunque

Although using grid line numbers and the **span** keyword is a great way of positioning items, there is an even more intuitive and easy way to place items in the grid. It involves using the **grid-area** and **grid-template-areas** properties.

To achieve this, each item to be positioned in the grid must first be given a name by setting its **grid-area** property to a string that can then be included in the grid's **grid-template-areas** declaration. It then becomes possible to define **grid-template-areas** using a visual 'map' in which rows are enclosed in quotation marks, with the contents of each grid cell represented by a string pertaining to the **grid-area** names of the items.

Empty cells are symbolised by a full stop (.) and spaces signify vertical grid lines. The rows can be placed on new lines to provide a visual representation of the grid, as follows:

```
#item1 {
 grid-area: item1;
}
#item2 {
 grid-area: item2;
}
.grid {
 grid-template-areas:
   ". . . ."
   ". . . item1"
    "item2 item2 item2 item1"
    "item2 item2 item2 .";
}
```



How to create a responsive layout using CSS Grid

CSS Grid can be used with media queries to restructure items on different screen sizes without changing the markup. Item shape, size and position can all be completely changed, thus leading to a truly responsive and highly customised layout.

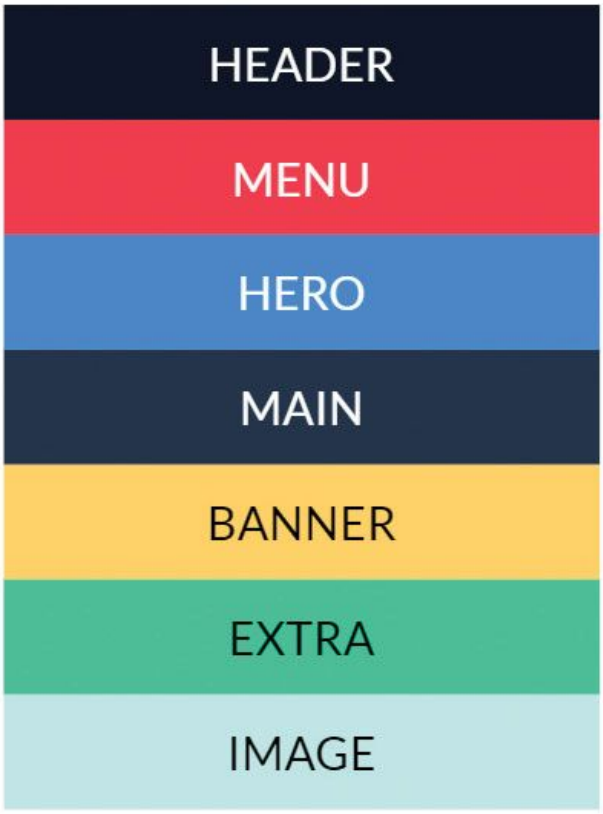


Figure 1

Let's say we have a list of elements generated from this HTML markup (figure 1):

```
<div class="grid">
 <div class="header"></div>
 <div class="menu"></div>
 <div class="hero"></div>
 <div class="main"></div>
 <div class="banner"></div>
```

```
 <div class="extra"></div>
 <div class="image"></div>
</div>
```

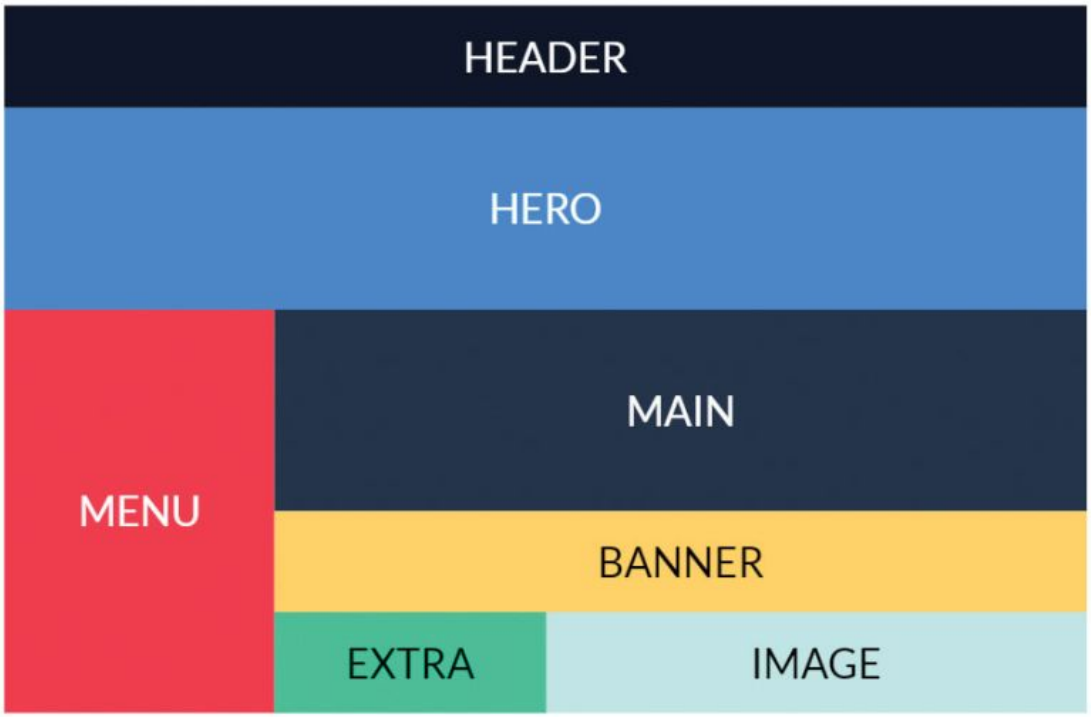


Figure 2

usando lo que nosotros aprendimos sobre GRID asi más alla podemos aplicar estilos para pantallas que son más anchas que 720px

Using what we have learned about Grid so far we can apply styles for screens that are wider than 720px, using a media query (figure 2):

```
@media (min-width: 721px) {
 .header { grid-area: header; }
 .menu { grid-area: menu; }
 .hero { grid-area: hero; }
 .main { grid-area: main; }
 .banner { grid-area: banner; }
 .extra { grid-area: extra; }
 .image { grid-area: image; }
 .grid {
   display: grid;
   grid-template-columns: repeat(4, 1fr);
   grid-template-rows: 40px 2fr repeat(4, 1fr);
   grid-template-areas:
     "header header header header"
    "hero hero hero hero"
     "menu main main main"
     "menu main main main"
     "menu banner banner banner"
     "menu extra image image";
 }
}
```

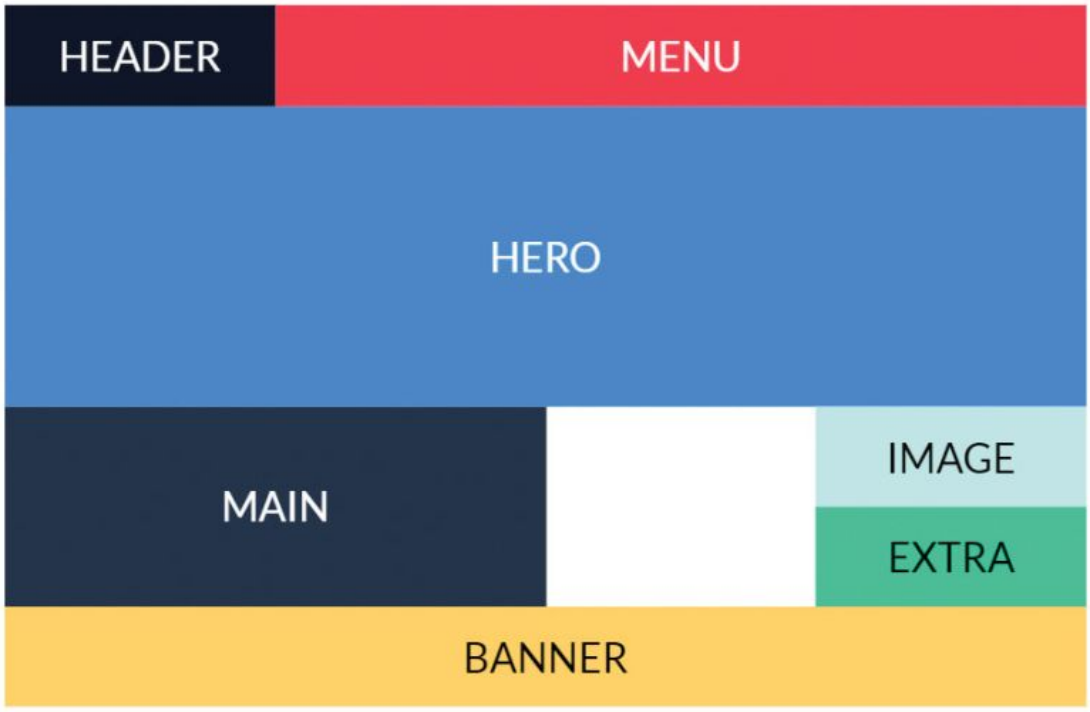


Figure 3

We can also easily reposition and resize the items for larger screens that are wider than 1000px using another media query (figure 3):

```
@media (min-width: 1001px) {
 .grid {
   grid-template-areas:
     "header menu menu menu"
     "hero hero hero hero"
     "hero hero hero hero"
     "main main . image"
     "main main . extra"
     "banner banner banner banner";
 }
}
```

eso no es todo - el numero de 'columnas cuadricula' y filas puede incluso estar cambiado crear permisos para ciertos tamaños de pantallas
That's not all – the number of grid columns and rows can even be changed to make allowances for certain screen sizes, if this is desired, by redefining **grid-template-columns** and/or **grid-template-rows** within the media queries.

Solapando elementos pueden tambien se logrados usando multiples elementos pueden ocupar la misma grid cells y por lo tanto puede solapar con uno otro, utilizando la propiedad z-index de los elementos control el orden en el cual estan apliados
Overlapping elements can also be achieved using CSS Grid. Multiple items can occupy the same grid cells and hence can overlap with one another, utilising the **z-index** properties of the items to control the order in which they stack.

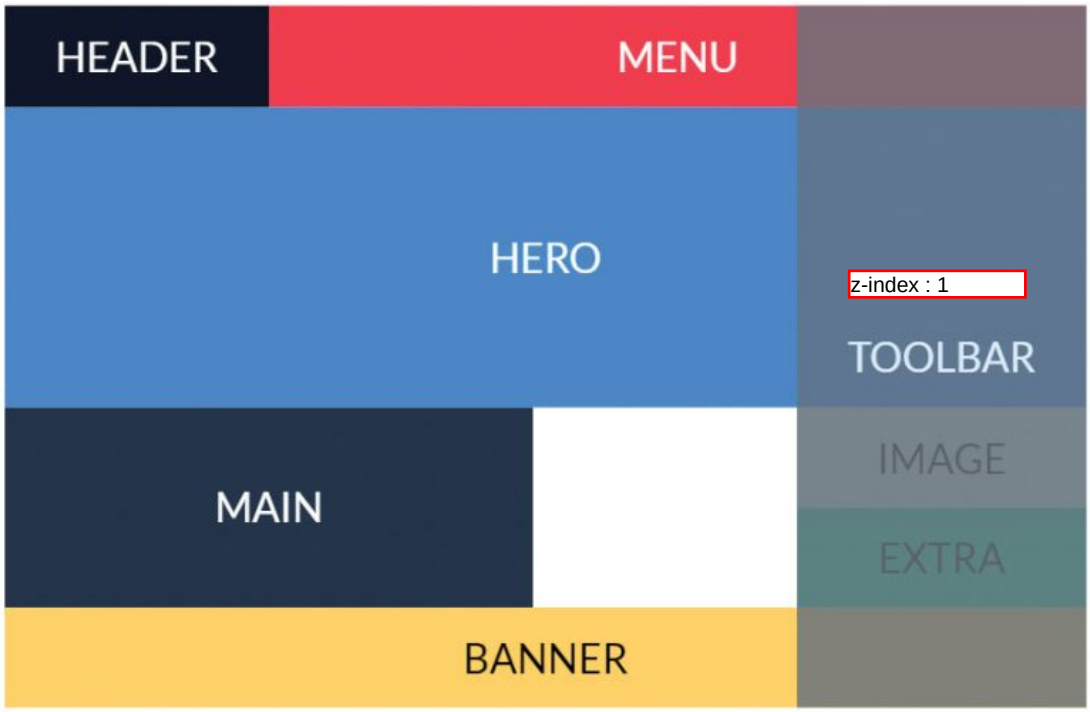


Figure 4

For example, we can add a semi-transparent element with the class toolbar inside the grid container and position it in the right-most column so that it overlaps with all the other elements (figure 4):

solapa

```
.toolbar {
 grid-column: 4;
 grid-row: 1 / -1;
 opacity: .85;
 z-index: 1;
}
```

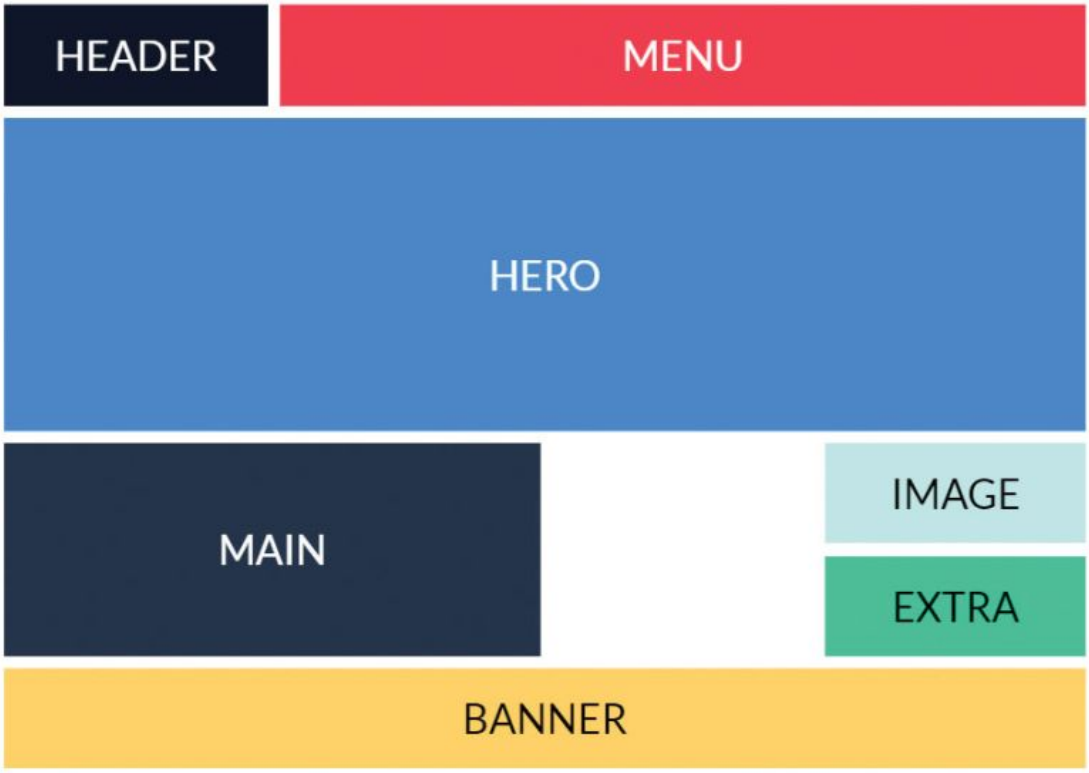


Figure 5

The final aspect we will discuss is the spacing between columns and rows or gaps (figure 5). Items in the grid can be separated using the **grid-column-gap** or **grid-row-gap** properties that set the size of the gap between columns and rows respectively. The shorthand property grid-gap can set both.