

IDV460

INTERACTIVE DATA VIZ SPRING 16

Balance of power

In our last class (on Wednesday), we started work on a fairly simple infographic that would convey shifts in the balance of Congressional power over the previous three presidential administrations. What were your ideas on how to do this?

No.	Year	President	House: 435 Seats				Senate: 100 Seats			
			Dem	Rep	Ind	Margin	Dem	Rep	Ind	Margin
103rd	1993–95	Clinton (D)	258	176	1	82	57	43	0	14
104th	1995–97	Clinton (D)	206	228	1	22	48	52	0	4
105th	1997–99	Clinton (D)	207	226	2	19	45	55	0	10
106th	1999–01	Clinton (D)	211	223	1	12	45	55	0	10
107th	2001–03	Bush (R)	213	220	2	7	50	50	0	0
108th	2003–20	Bush (R)	205	229	1	24	48	51	1	3
109th	2005–07	Bush (R)	201	233	1	32	44	55	1	11
110th	2007–09	Bush (R)	232	203	0	29	49	49	2	0
111th	2009–11	Obama (D)	257	178	0	79	57	41	2	16
112th	2011–13	Obama (D)	193	242	0	49	51	47	2	4
113th	2013–15	Obama (D)	201	234	0	33	53	45	2	8
114th	2015–17	Obama (D)	188	247	0	59	44	54	2	10

Sources: United States House of Representatives, United States Senate

FILE FORMATS

IMAGES ON THE WEB

Basic web design holds that you are limited in the types of files that can be used for images on web pages.

Photoshop PSD

Large Document Format PSB

BMP

Cineon

CompuServe GIF

Photoshop DCS 1.0

Photoshop DCS 2.0

DICOM

Photoshop EPS

IFF format

JPEG

JPEG2000

OpenEXR

PCX

Photoshop PDF

Pixar

PNG

Portable Bit Map

Photoshop Raw

Scitex CT

Targa

TIFF

IMAGES ON THE WEB

Basic web design holds that you are limited in the types of files that can be used for images on web pages.

OK

JPEG

PNG

CompuServe GIF

NOT OK

All the others

GIF

(Graphical Interchange Format,
1987)

You probably know of GIFs
(pronounced with a hard G) as
small pieces of looping animation.
The format (which is actually a
soft G) is based on 8-bit colors,
making it is poor for photographs,
but good for images with flat color,
like logos or cartoons.



JPEG (or JPG)

(Joint Photographic Experts Group, 1992)

The best-known lossy format for digital images, JPEG is especially useful for photographs, as the degree of compression can be adjusted. Compression sacrifices detail for the sake of economy — in this case, the size of the file. (You can use either file extension,



PNG

(Portable Network Graphics, 1998)

PNG was developed as an alternative (and improvement) over the GIF format. It uses lossless compression, which means file sizes are reduced without losing image quality. PNG files can be 24-bit, meaning there are 16 million available colors rather than GIF's 256. Like GIF, PNG supports transparency.



PNG

(Portable Network Graphics, 1998)

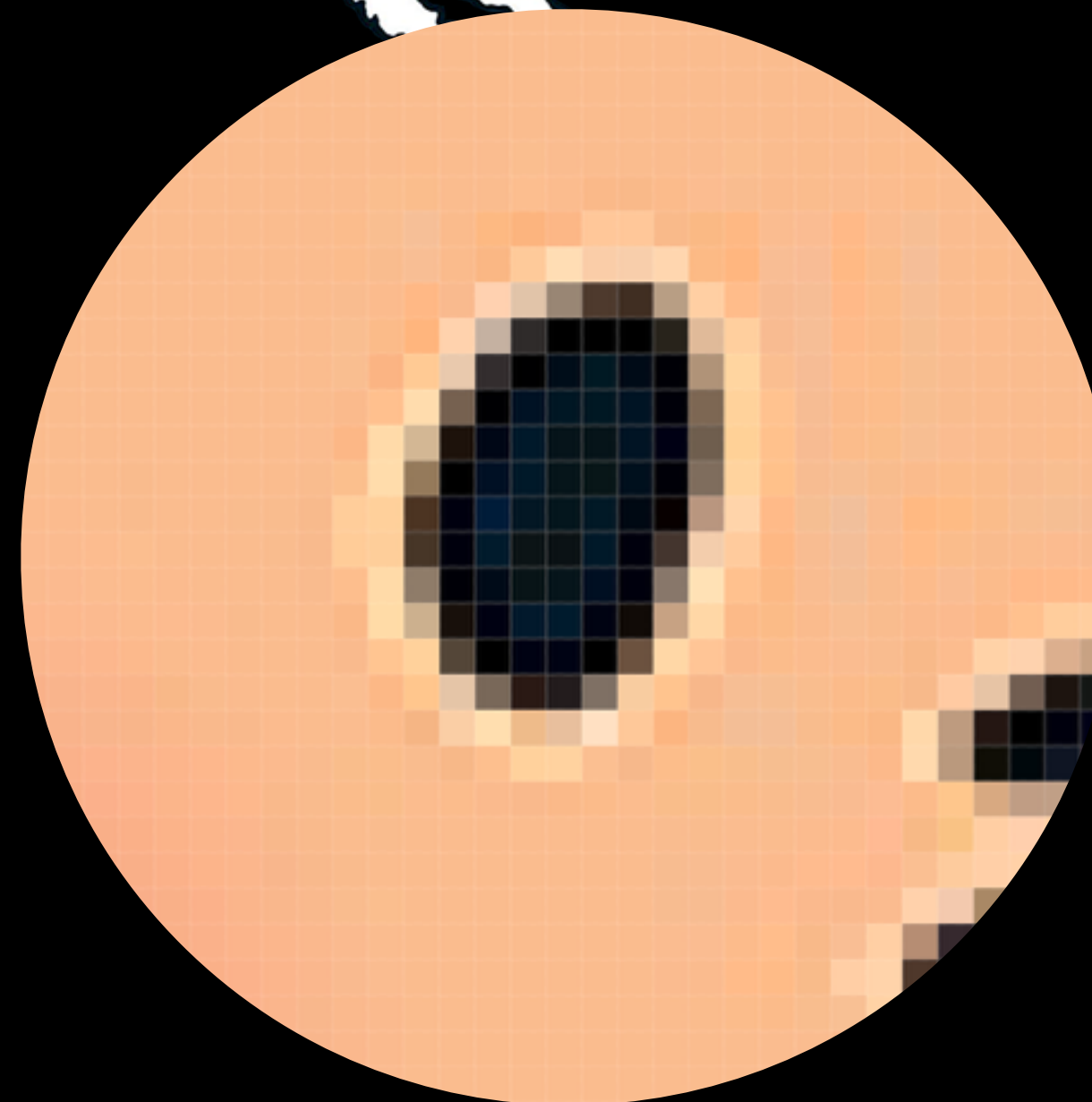
PNG was developed as an alternative (and improvement) over the GIF format. It uses lossless compression, which means file sizes are reduced without losing image quality. PNG files can be 24-bit, meaning there are 16 million available colors rather than GIF's 256. Like GIF, PNG supports transparency.



JPG or PNG?

The decision as to whether to use either of the most widely used image formats comes down to the type of file. If it has flat color, or a need for transparency, PNG is a better choice. If the image features continuous tone, JPG is ideal, but every image will be constrained to a rectangle*.

**Unless, of course, you use CSS to make it look different.*



Saving for web

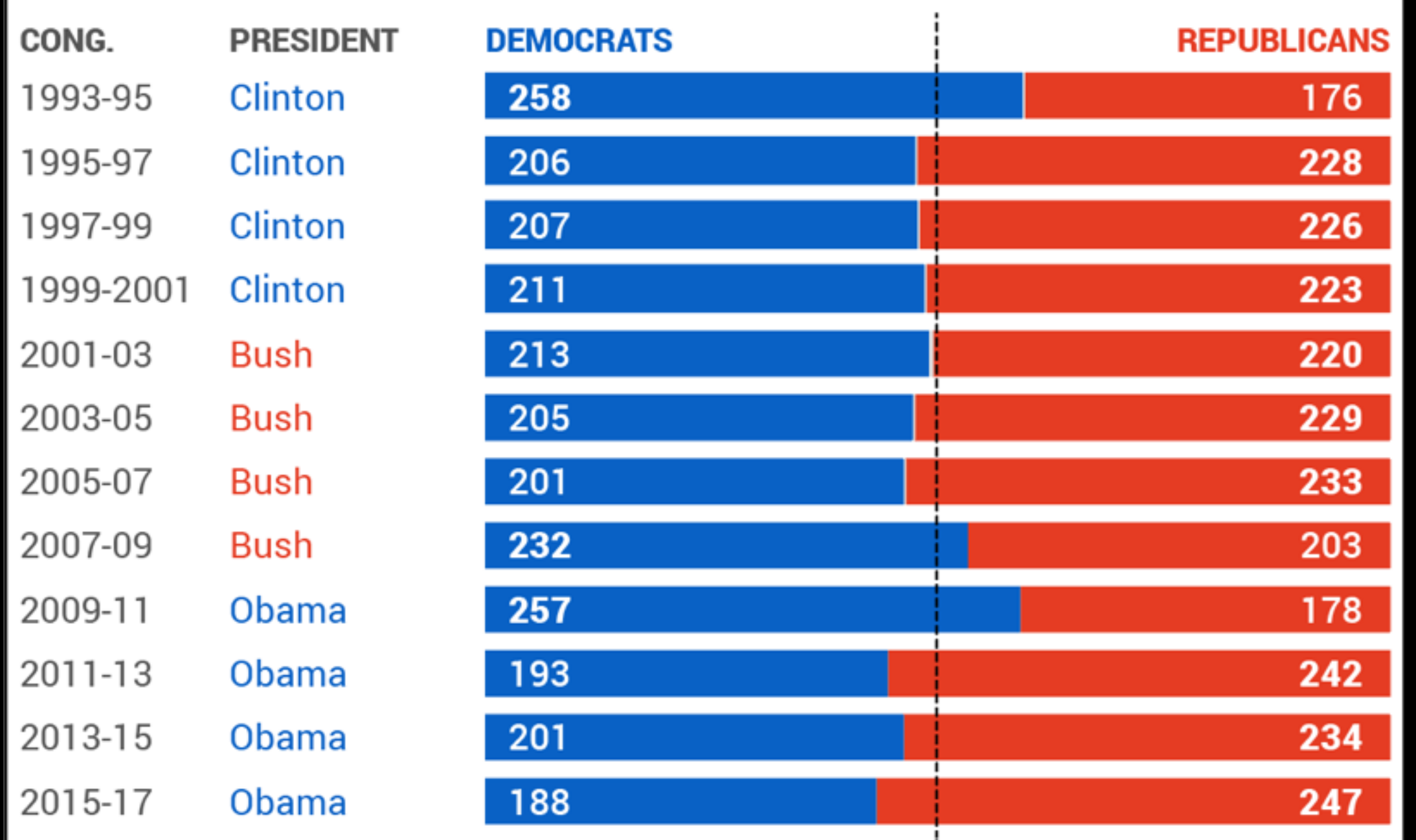
For your “balance of power” graphic, which we will slug CONG, you can confine the graphic to the size of an artboard, or you can “slice” the page to isolate the graphic from the background.

This is the original graphic, at 600 pixels wide, on a letter-sized piece of paper (which is 612 “pixels” — actually points — wide).

Shifts in the balance of power

Few presidents have enjoyed a high degree of Congressional support — at least not for a sustained period. The last three administrations, all two-termers, were swept into power with firm majorities, only to see those advantages decline and disappear by the time they left office.

BREAKDOWN OF HOUSE MEMBERS



SOURCE: U.S. House of Representatives

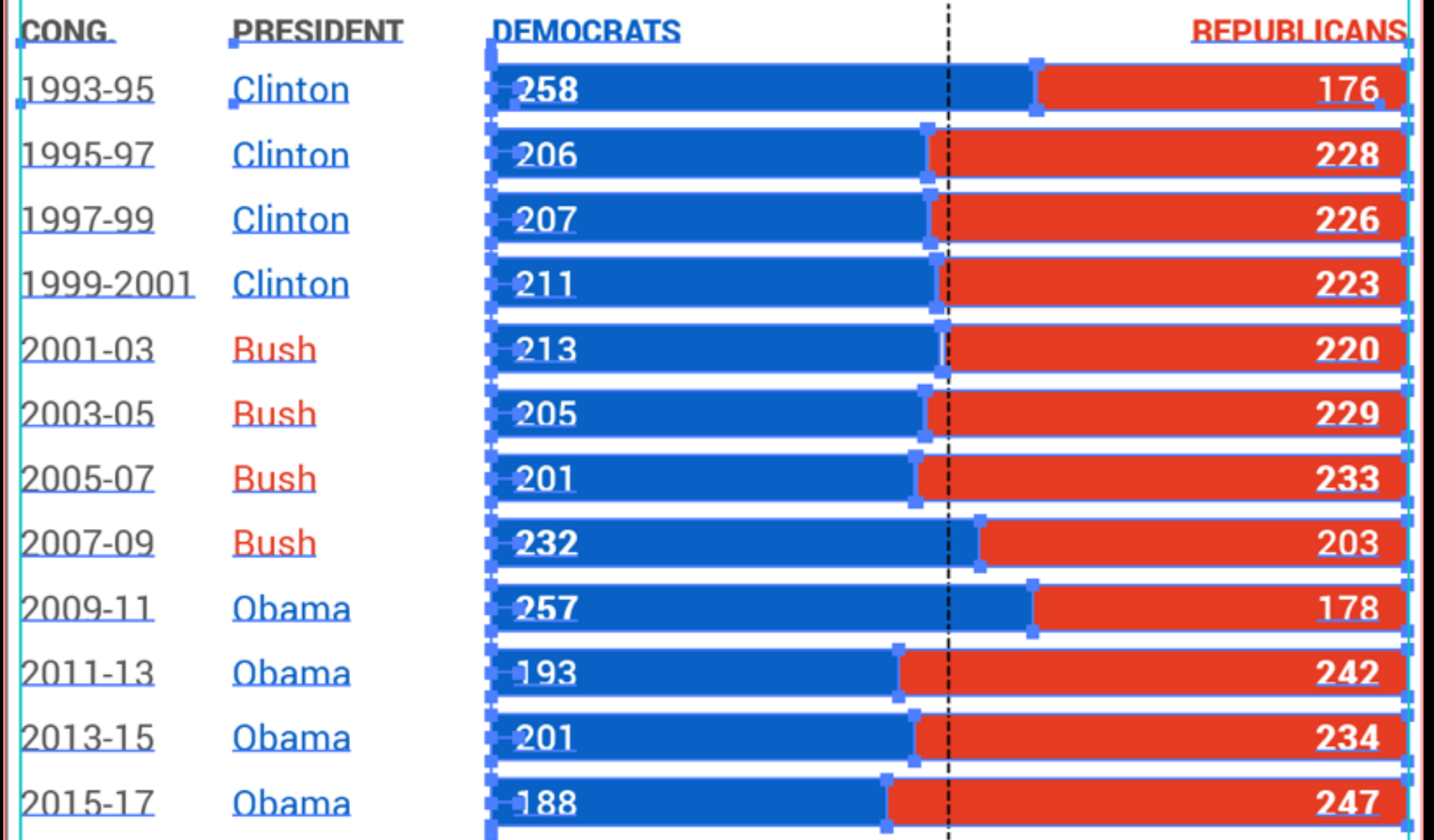
Saving for web

To slice, which doesn't cut anything, as the name suggests, but divides your image area into regions, you would select the graphic, then pull down Object > Slice > Make.

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Saving for web

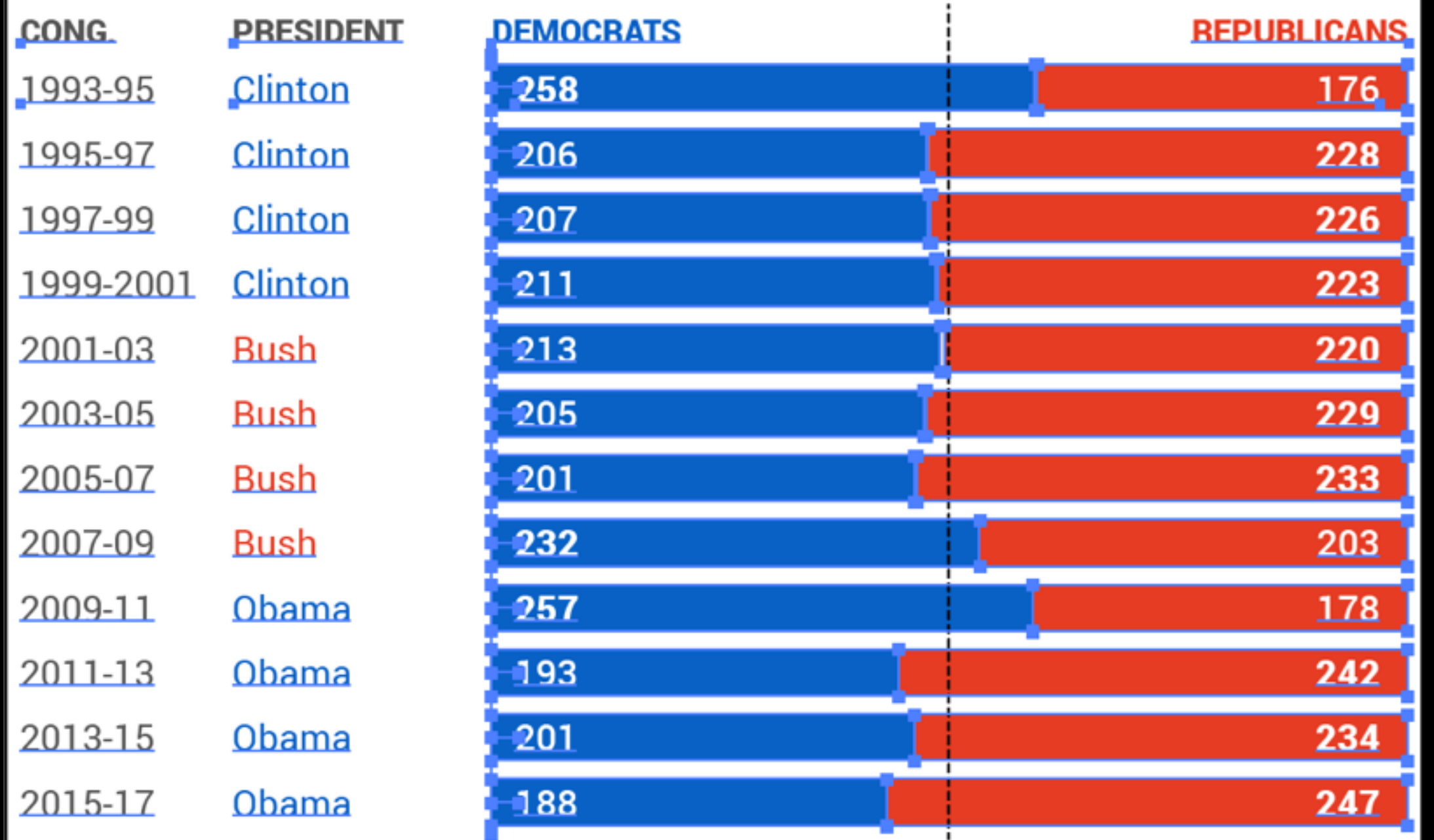
For our purposes, it is better to reduce the size of the artboard to fit just the finished graphic. Artboards in Illustrator are often treated as pages, but they are much more flexible and powerful than that. You can have multiple artboards of different sizes in a document, and you can save out multiple files from a single document with them. For a review on Illustrator's artboards, go to

<https://helpx.adobe.com/illustrator/using/artboard-overview.html>

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SOURCE: U.S. House of Representatives

Saving for web

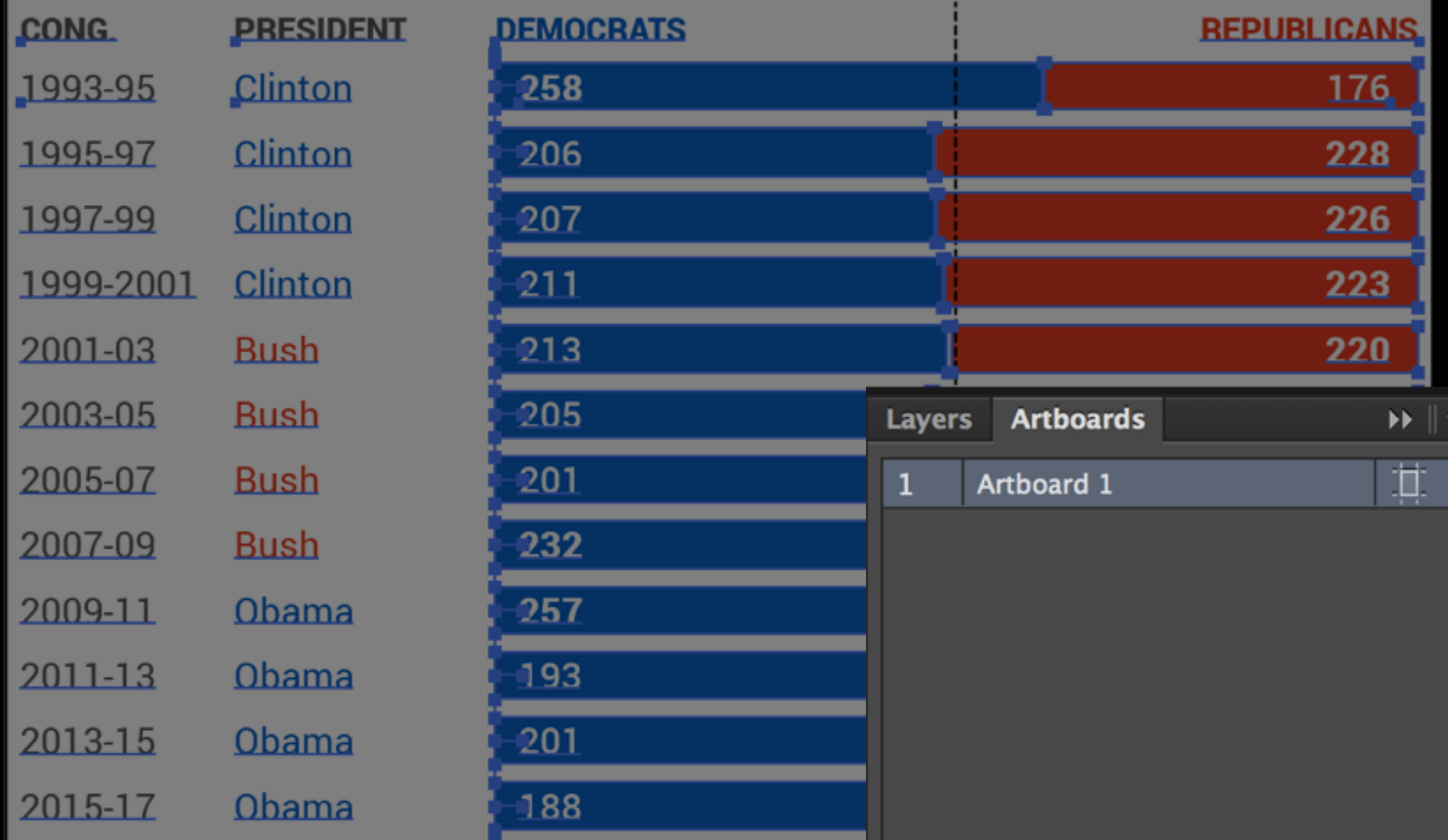
There are several ways to change the size of an artboard — you can use the Artboard tool, as well as the Artboard panel, to either drag to change or specify an exact size for an artboard.



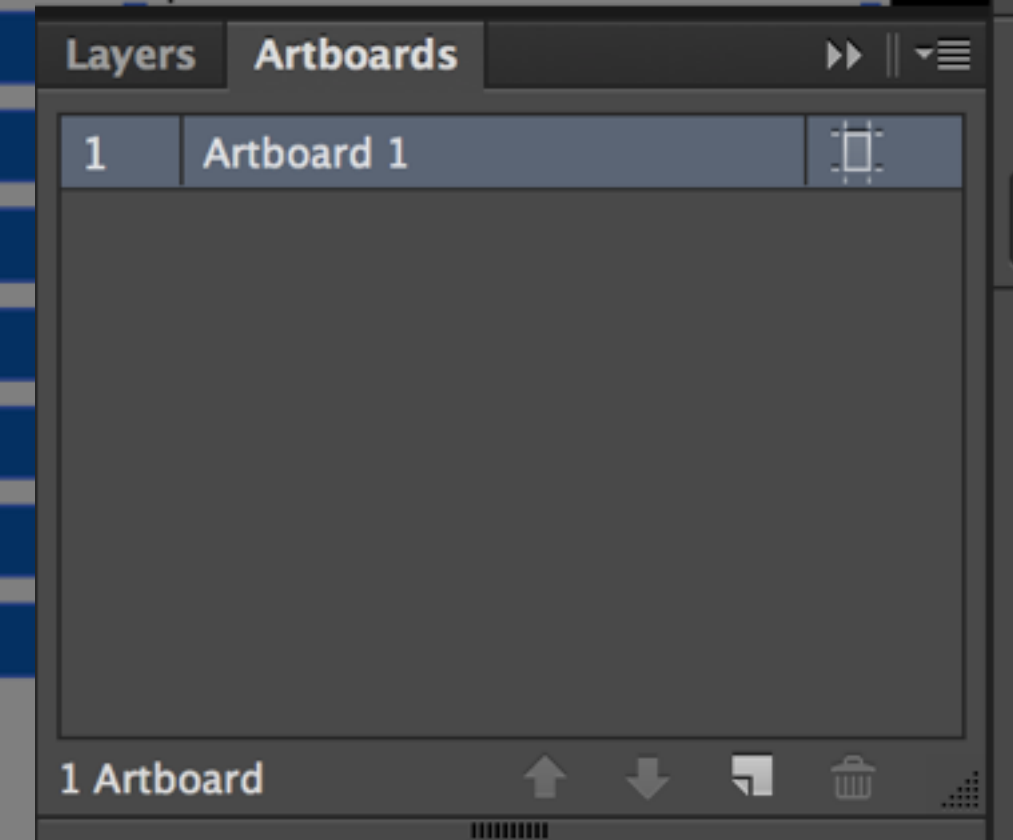
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BREAKDOWN OF HOUSE MEMBERS

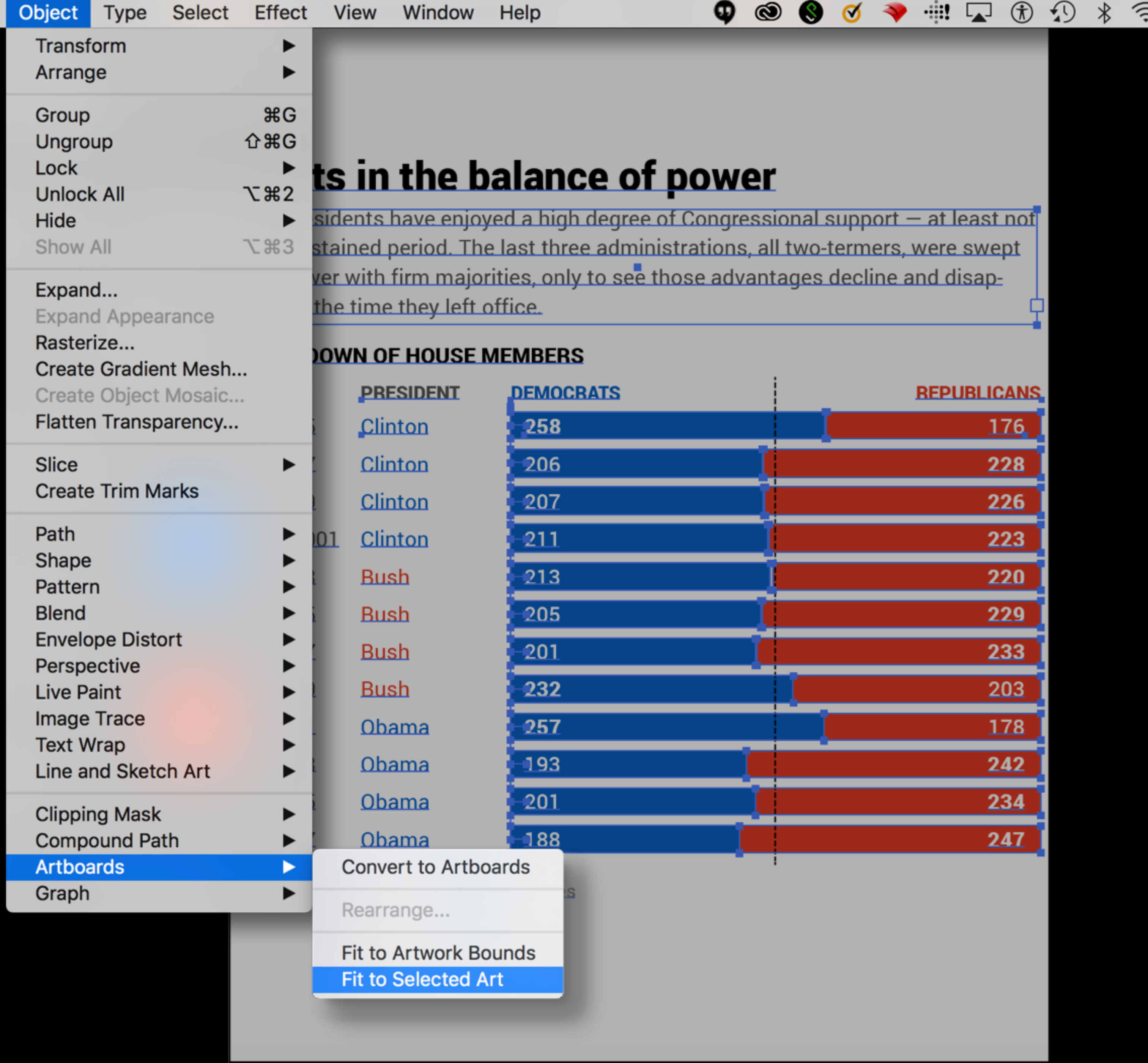


SOURCE: U.S. House of Representatives



Saving for web

The best way, though, is to make the dashboard the exact size of your image. To do this, select the graphic, pull down Object > Artboards > Fit to Selected Art.



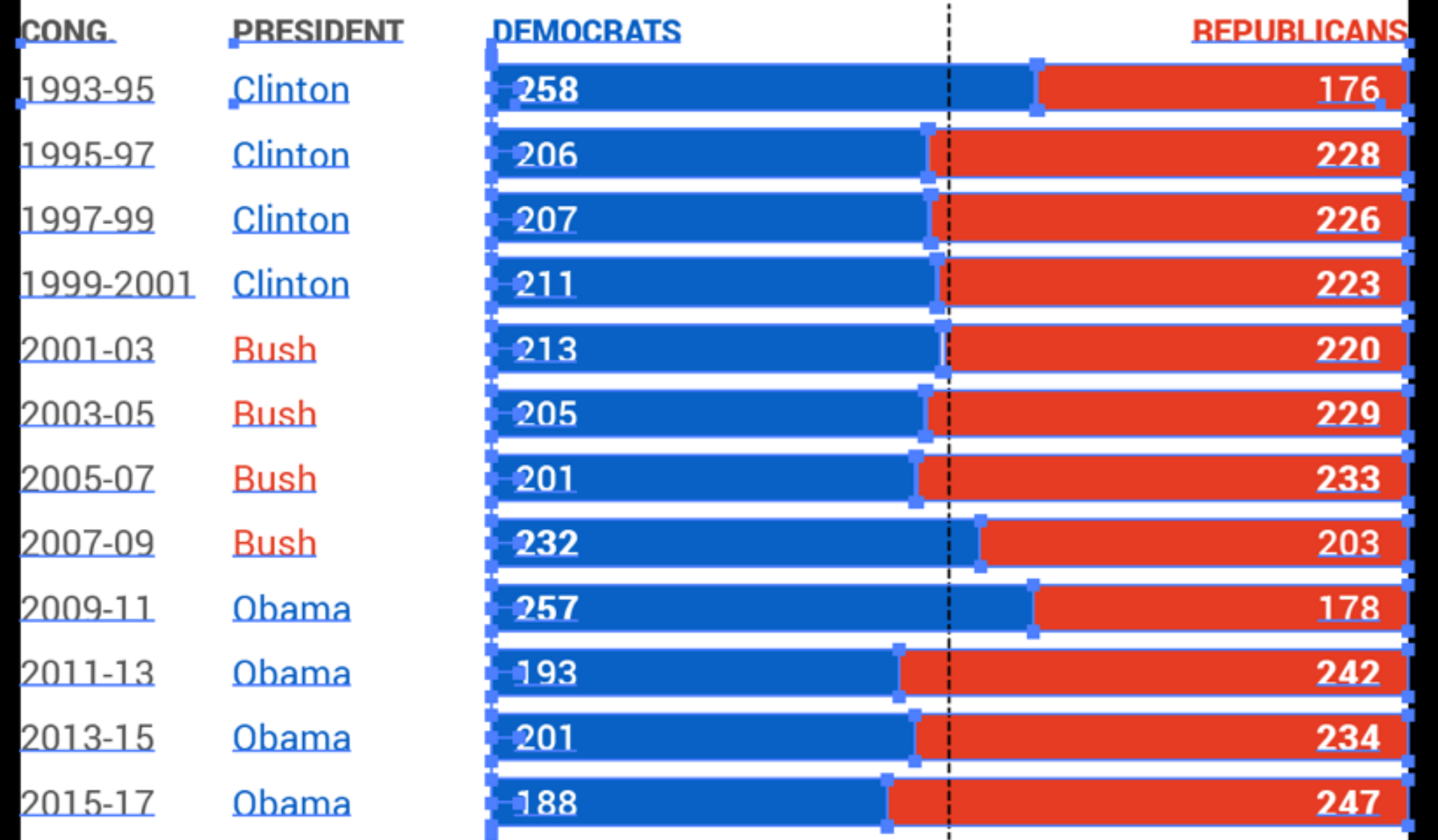
Saving for web

Your dashboard should now be the exact size of the elements in your graphic. In our case today, that should be 600 pixels wide (and however deep).

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BREAKDOWN OF HOUSE MEMBERS

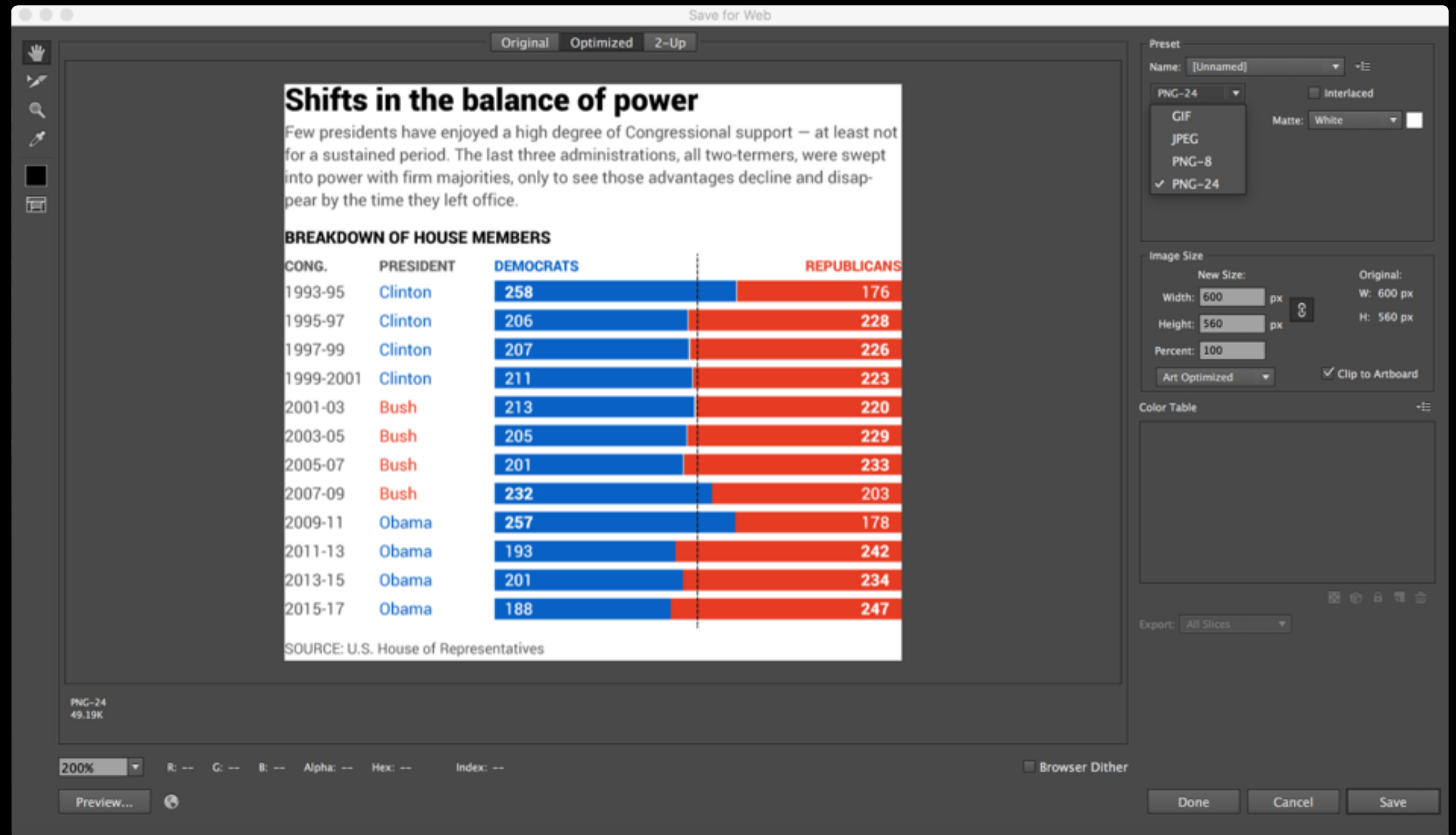


SOURCE: U.S. House of Representatives

JPG or PNG?

JPEG, PNG (or other formats) can be saved out of programs like Illustrator by using the Save for Web function.

This is under the File menu in Illustrator, and is now added to the Export menu of Photoshop.



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REPUBLICANS

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Preset

Name: [Unnamed] ▼

PNG-24 ▼ Interlaced

Matte: White ▼

GIF

JPEG

PNG-8

✓ PNG-24

Image Size

New Size: Original:

Width: 600 px W: 600 px

Height: 560 px H: 560 px

Percent: 100

Art Optimized ▼

Clip to Artboard

Color Table

Export: All Slices ▼

Browser Dither

Done

Cancel

Save

Presets

You can set up your image as a GIF, JPEG or PNG in this section, depending on your needs. There are options within each setting, including transparency with GIF and PNG, and the compression level in JPEG.

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Name: [Unnamed]

PNG-24 Interlaced

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GIF

JPEG

PNG-8

✓ PNG-24

Image Size

New Size:

Width: 600 px

Height: 560 px

Percent: 100

Art Optimized Clip to Artboard

Original:

W: 600 px

H: 560 px

Color Table

Export: All Slices

Browser Dither

Done Cancel Save

Image size

You can set scaling here if you like (though it's not recommended). You can also set your size to be the same as the artboard, which IS recommended for our class.

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REPUBLICANS

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Name: [Unnamed] 

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✓ PNG-24


Image Size


New Size: Original:


Width: 600 px W: 600 px

Height: 560 px H: 560 px

Percent: 100

Art Optimized  Clip to Artboard

Color Table 

Export: All Slices 

Browser Dither

Done Cancel Save

Slices

Slicing your page is especially useful if you want to save out a number of assets all at once. But we will not be using this technique a great deal for our visualizations.

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JPEG
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✓ PNG-24

Image Size

New Size:	Original:
Width: 600 px	W: 600 px
Height: 560 px	H: 560 px
Percent: 100	

Art Optimized Clip to Artboard

Color Table

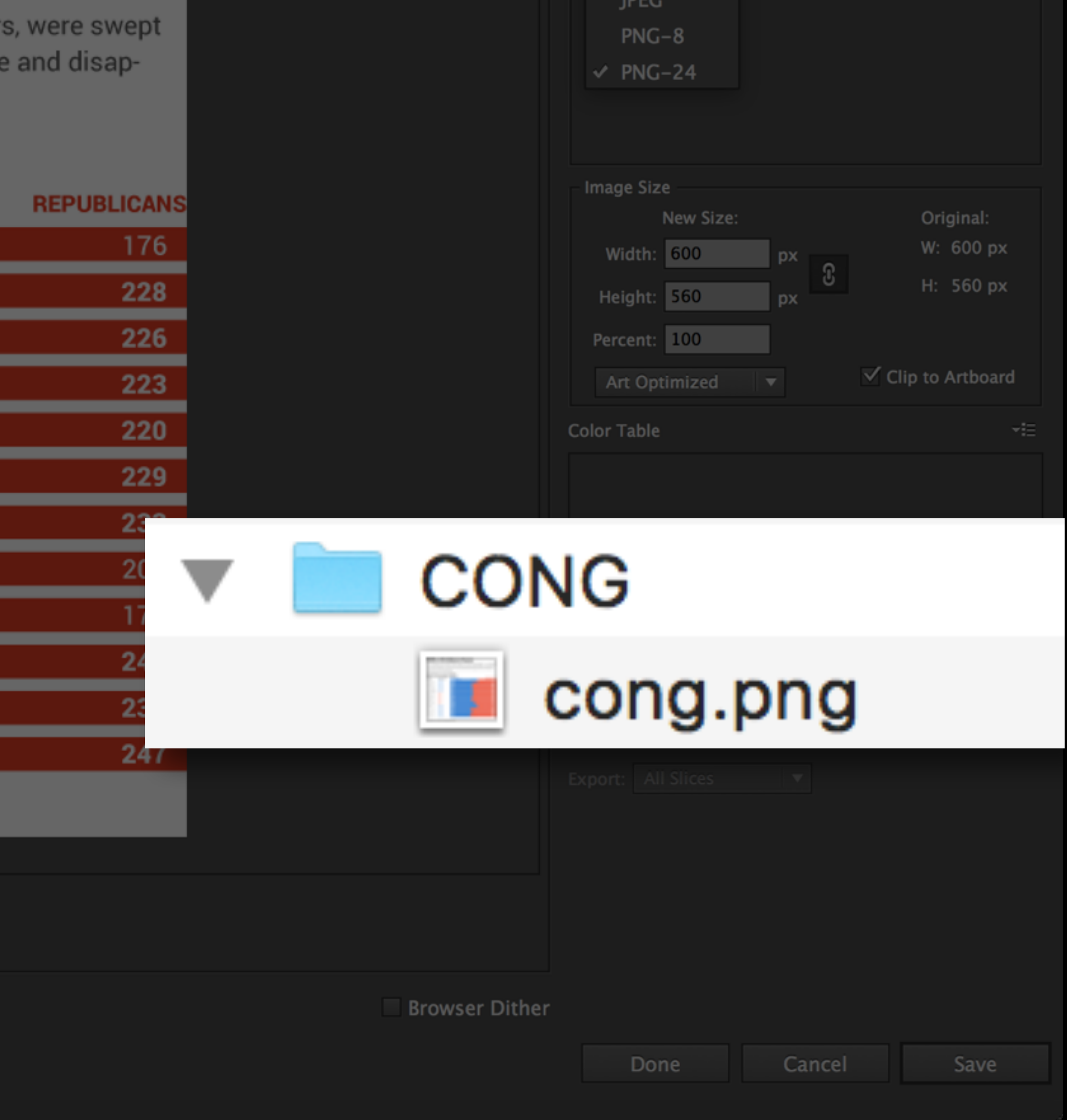
Export: All Slices

Browser Dither

Done Cancel Save

Save

If you save slices, Illustrator will put them in an images folder. But for creating a single PNG image, as you will do today, you need only save the document.



Save

Note that when you save this way, Illustrator adds the extension. So, if you save your file as “cong,” the resulting file will be **cong.png**.

When you are making images for the Web, you should only use lowercase letters in your file names, and no spaces (use hyphens or underscores instead).

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24

JPEG
PNG-8
✓ PNG-24

Image Size

New Size:	Original:
Width: 600 px	W: 600 px
Height: 560 px	H: 560 px
Percent: 100	

Art Optimized Clip to Artboard

Color Table

▼  **CONG**

 **cong.png**

 **cong.jpg**

Browser Dither

Done Cancel Save

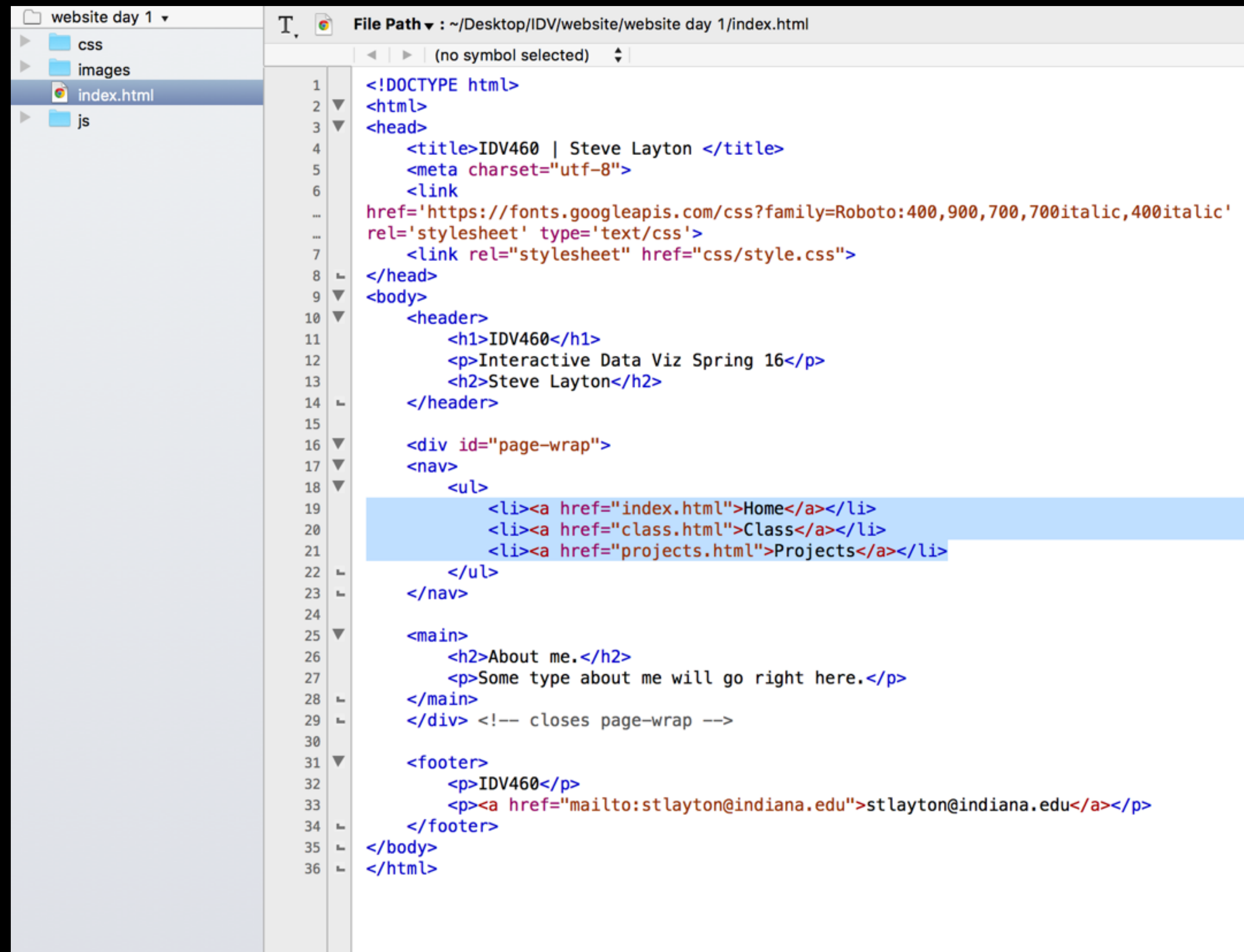
Save

We'll experiment with these two formats briefly. Save a png and jpeg version of your graphic, which should be 600px wide.

Adding images

Open your website for our class in Text Wrangler. Have the **index.html** page showing. Hopefully, the basic structure of the page is ready to go.

In the nav tag, if you haven't already, please add links to your **class.html** page and your **projects.html** page.

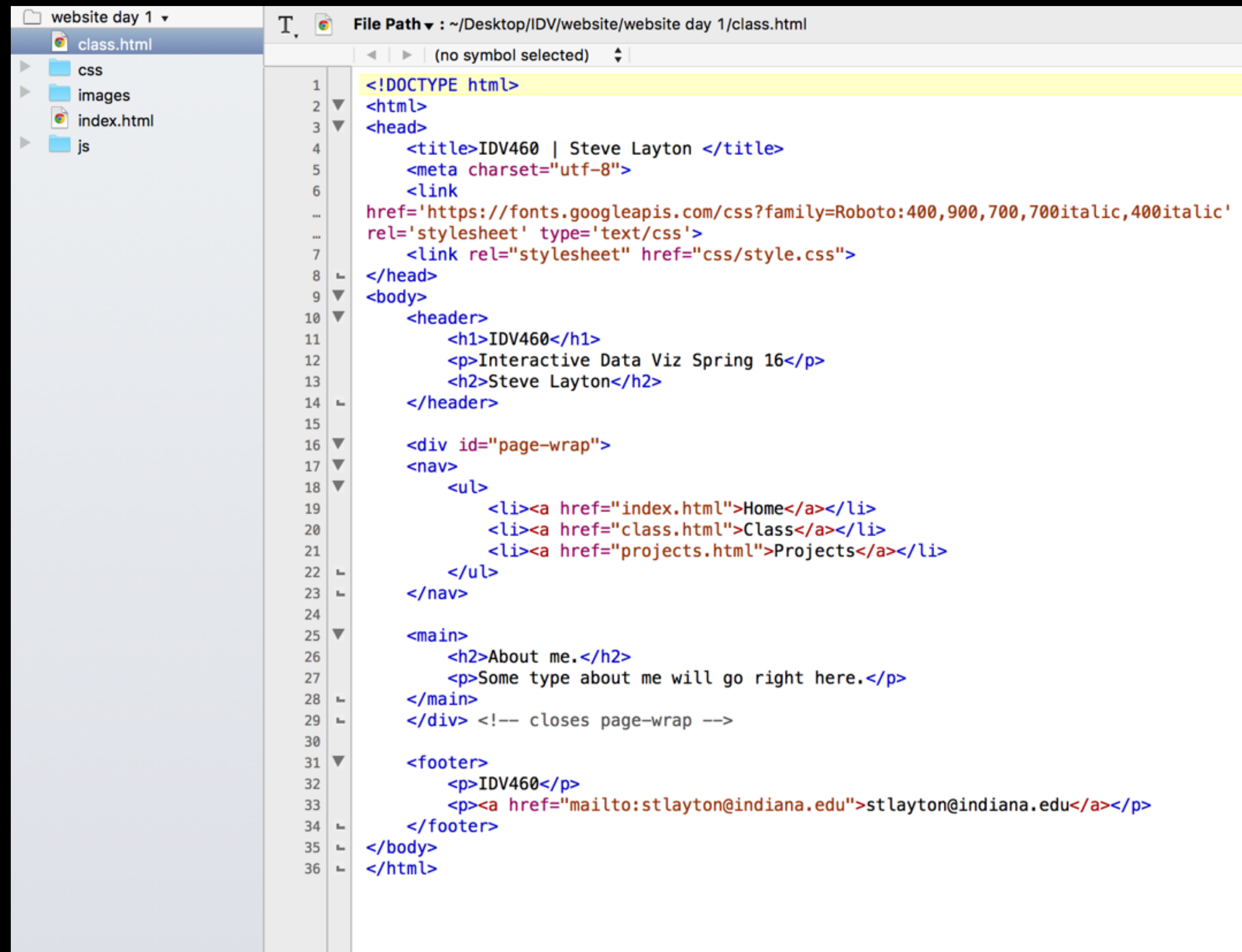


The screenshot shows a code editor with a file explorer on the left and a code editor on the right. The file explorer shows a folder named 'website day 1' containing subfolders 'css', 'images', and 'js', and a file 'index.html'. The code editor shows the following HTML code:

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4   <title>IDV460 | Steve Layton </title>
5   <meta charset="utf-8">
6   <link
7     href='https://fonts.googleapis.com/css?family=Roboto:400,900,700,700italic,400italic'
8     rel='stylesheet' type='text/css'>
9   <link rel="stylesheet" href="css/style.css">
10 </head>
11 <body>
12   <header>
13     <h1>IDV460</h1>
14     <p>Interactive Data Viz Spring 16</p>
15     <h2>Steve Layton</h2>
16   </header>
17   <div id="page-wrap">
18     <nav>
19       <ul>
20         <li><a href="index.html">Home</a></li>
21         <li><a href="class.html">Class</a></li>
22         <li><a href="projects.html">Projects</a></li>
23       </ul>
24     </nav>
25     <main>
26       <h2>About me.</h2>
27       <p>Some type about me will go right here.</p>
28     </main>
29   </div> <!-- closes page-wrap -->
30   <footer>
31     <p>IDV460</p>
32     <p><a href="mailto:stlayton@indiana.edu">stlayton@indiana.edu</a></p>
33   </footer>
34 </body>
35 </html>
```


Adding images

Go to “Save As”, and name this page **class.html**, saved parallel to the index.html file.



The screenshot shows a code editor with a file explorer on the left and a code editor on the right. The file explorer shows a folder named 'website day 1' containing files 'class.html', 'index.html', and subfolders 'css', 'images', and 'js'. The code editor shows the HTML code for 'class.html'.

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4   <title>IDV460 | Steve Layton </title>
5   <meta charset="utf-8">
6   <link
7     href='https://fonts.googleapis.com/css?family=Roboto:400,900,700,700italic,400italic'
8     rel='stylesheet' type='text/css'>
9   <link rel="stylesheet" href="css/style.css">
10 </head>
11 <body>
12   <header>
13     <h1>IDV460</h1>
14     <p>Interactive Data Viz Spring 16</p>
15     <h2>Steve Layton</h2>
16   </header>
17   <div id="page-wrap">
18     <nav>
19       <ul>
20         <li><a href="index.html">Home</a></li>
21         <li><a href="class.html">Class</a></li>
22         <li><a href="projects.html">Projects</a></li>
23       </ul>
24     </nav>
25     <main>
26       <h2>About me.</h2>
27       <p>Some type about me will go right here.</p>
28     </main>
29   </div> <!-- closes page-wrap -->
30   <footer>
31     <p>IDV460</p>
32     <p><a href="mailto:stlayton@indiana.edu">stlayton@indiana.edu</a></p>
33   </footer>
34 </body>
35 </html>
```

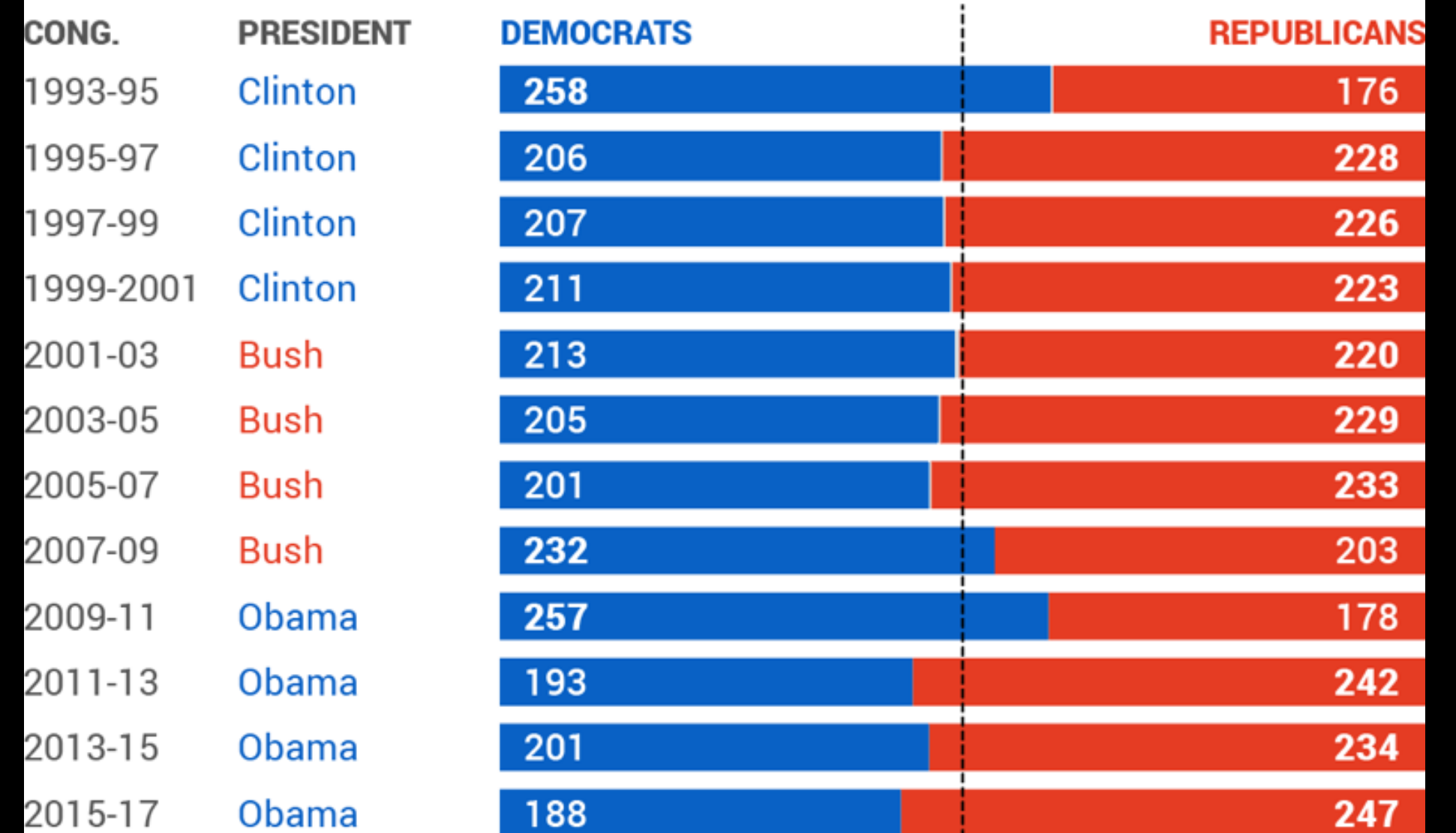
Adding images

Write an `<h2>` for the JPEG version, then add a little text to remind you what this graphic is. You'll bring in the JPEG graphic as an image:

Shifts in the balance of power

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BREAKDOWN OF HOUSE MEMBERS



SOURCE: U.S. House of Representatives

```

```

Adding images

Add another image below, this time bringing in the PNG file. (Note that you can specify the size of the graphic in the image tag as attributes. This “saves space” for the graphic to load into.)

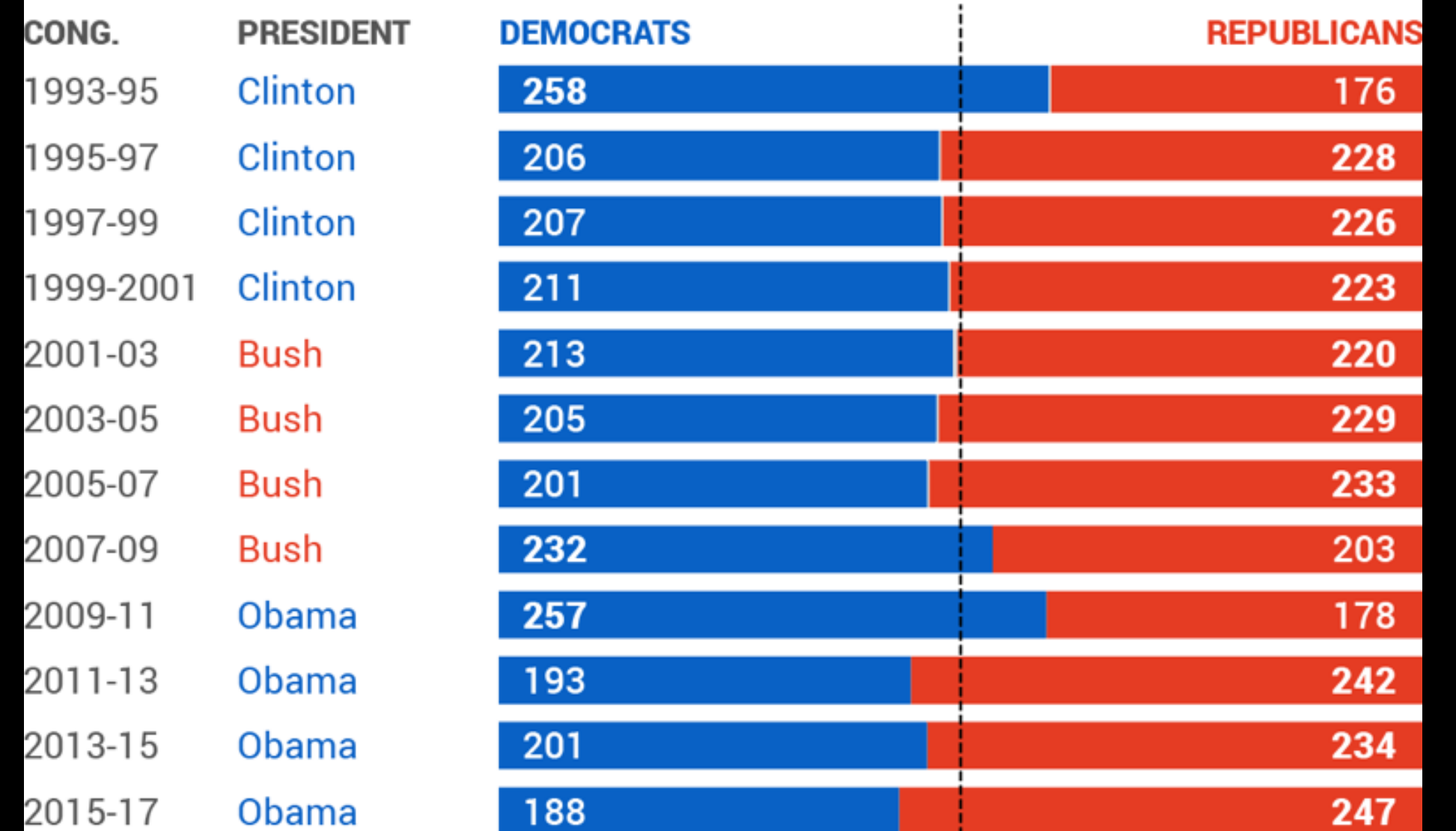
```

```

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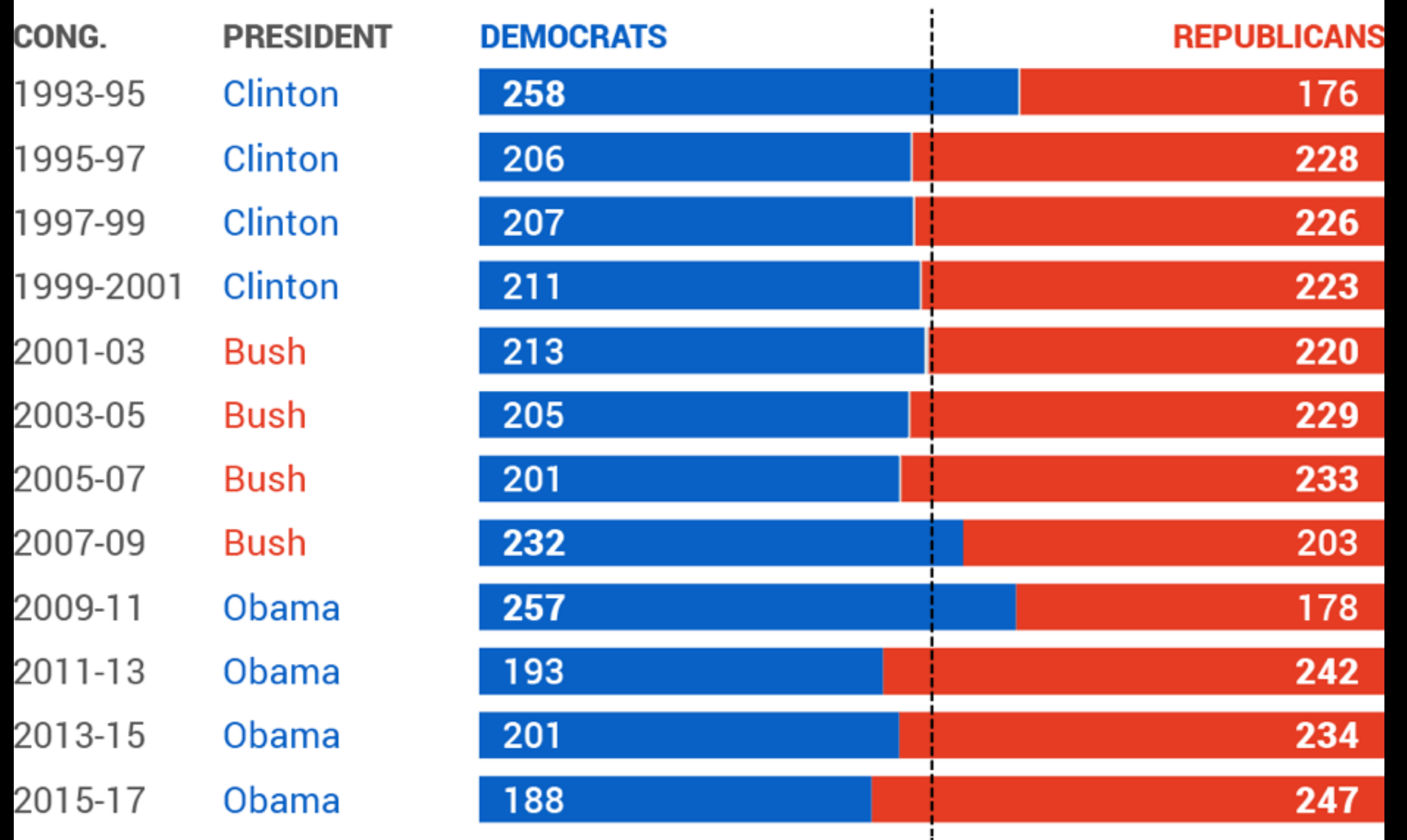
Hmmm ...

JPEG and PNG formats are fine for images — photographs or logos — but they are not so good for data visualizations. Why not?

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SOURCE: U.S. House of Representatives

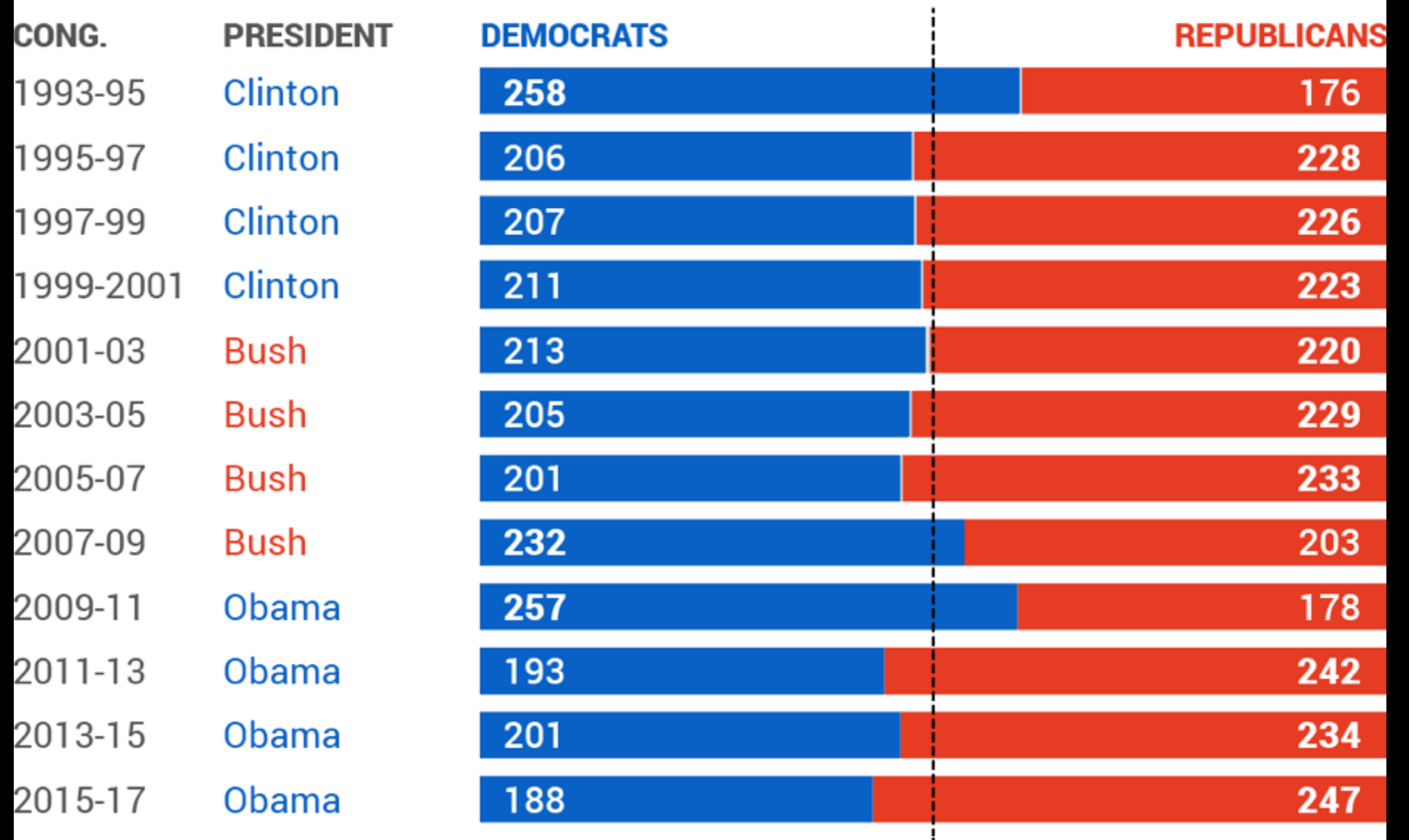
SVG

There are a number of ways, fortunately, that we can add graphics to websites without having to turn them into rasterized images. Today, we will begin to explore the SVG format. SVG stands for Scalable Vector Graphics.

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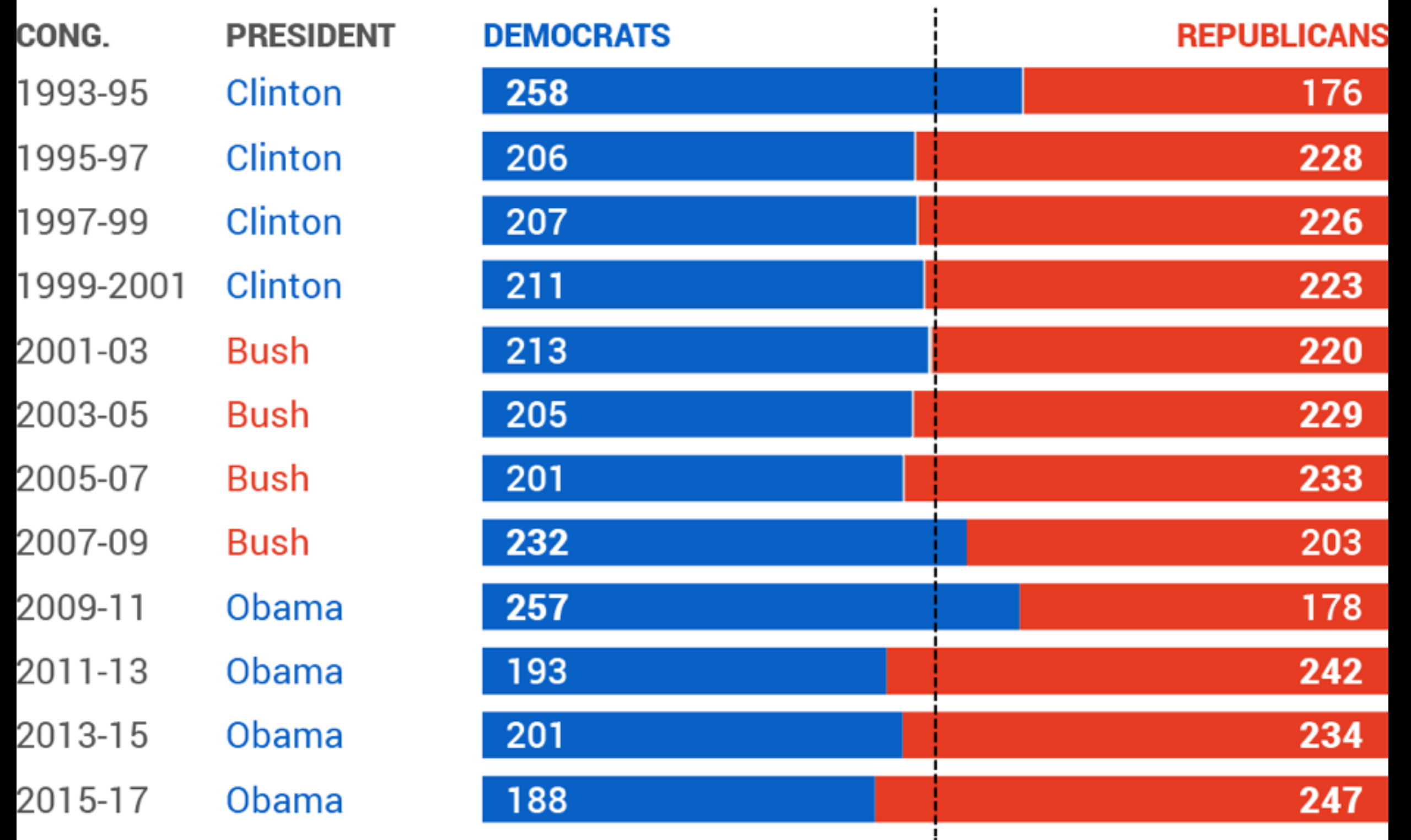
SVG

To prepare an SVG version of your CONG graphic, export it out of Illustrator as an SVG (in our version of Illustrator, you must Save As in SVG format).

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SOURCE: U.S. House of Representatives

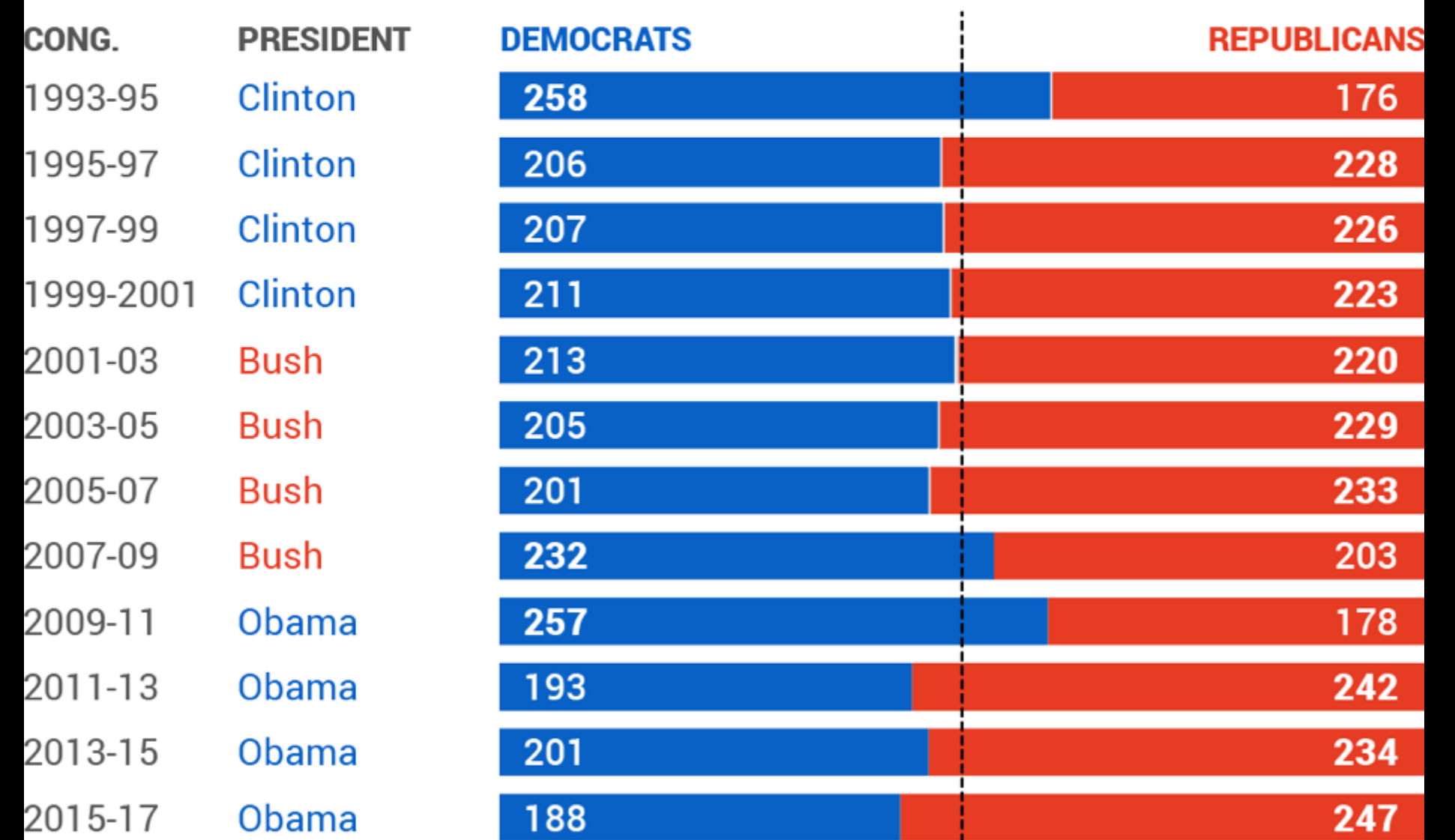
SVG

There are two ways to insert an SVG graphic into your page. The simplest is to merely add it as the source in the image tag, similar to the way we did with our JPEG and PNG versions. But as we shall see, this does not fully take advantage of what SVG can provide for us.

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