Layout and Grids

No screens



Prof. Lydia Chilton COMS 4170 30 January 2019



PRINCIPLI





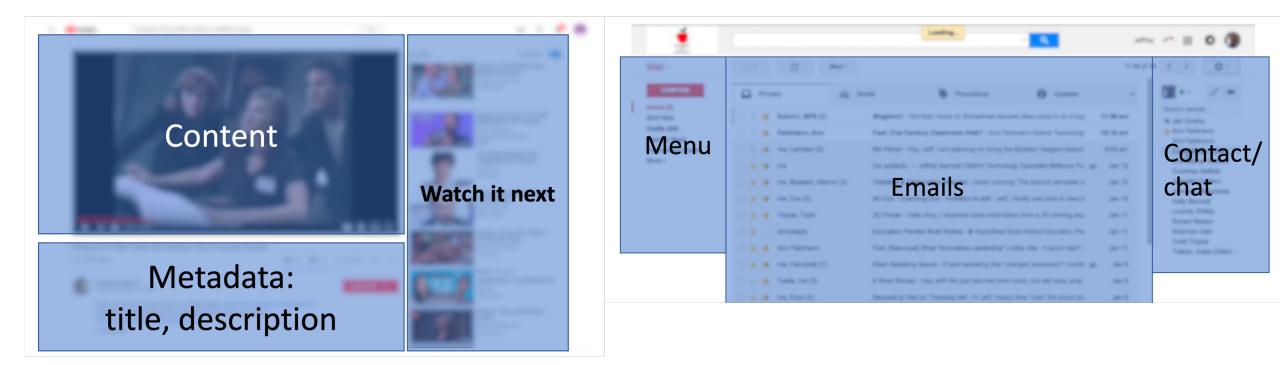
THEY DON'T EVEN HAVE A COLOR TO DESCRIBE HOW COLD IT'S GOING TO BE



COMS 4170 Goal 1 Build websites that suit the needs and abilities of users

The main goal of many websites is to display information users need.

How to guide users' attention

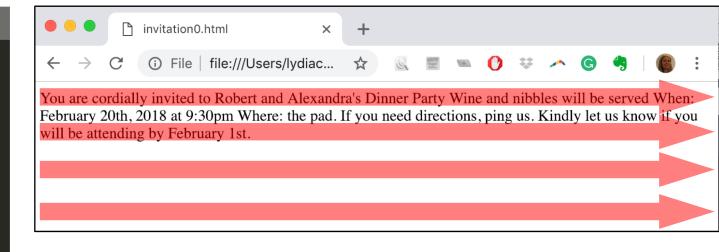


Layout in HTML

How to construct the layout of information in HTML and CSS

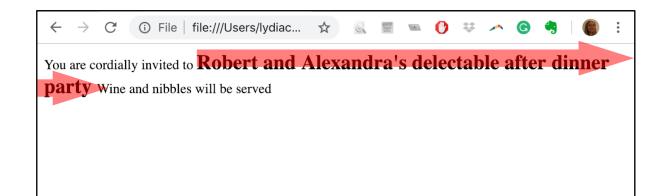
Web Browsers are in charge of rendering HTML

<►	invitation0.html
	<html></html>
2 3 4 5 6 7	<body></body>
3	
4	You are cordially invited to
5	Robert and Alexandra's Dinner Party
6	Wine and nibbles will be served
7	
8	When: February 20th, 2019 at 9:30pm
a 9	Where: the pad. If you need directions, ping us.
, 10	
11	Kindly let us know if you will be attending by February 1st.
12	
13	
14	
15	
i	



When you add elements, They either obey the line-wrap layout or break it.

19	<div></div>
20	You are cordially invited to
21	
22	Robert and Alexandra's
23	delectable after dinner party
24	
25	Wine and nibbles will be served
26	



 elements **obey** line-wrap layout

Do <div> elements obey or break line-wrap layout?

1	invitation0.html ×												
2	<body></body>												
3 4 5 6	<pre><div> You are cordially invited to Robert and Alexandra's Dinner Party Wine and nibbles will be served</div></pre>	•		ß	invitation0.	html	×	+					
7 8 9	 <div> When: February 20th, 2019 at 9:30pm</div>	\leftarrow	\rightarrow	C	i File	file:///Use	rs/lydiac	☆	R	and the second s	O	Ş	~
10 11 12	Where: the pad. If you need directions, pin <div></div>	You Whe			•		nd Alexandı n Where: th			-			
13 14 15	Kindly let us know if you will be attending			•		-	nding by Fe	-	-			ns, pr	ng us.
16	 												

<div> elements **break** line-wrap layout

When you use a new element, ask: does it obey or break line-wrap layout?

Image



The best way to know what a layout will

Today's goal: Remake this information layout in HTML and CSS

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"I finished coding up my website..."

<pre>:head> :body class="hasLeftCol _2yq case ato1 hasAYNayMonubar" di</pre>	home composerExpanded _5vb_ fbxkb sf _2ltu _605a _lfs _61s0 g_n3308lnl2 chrome webkit mac x2 Locale_en
<pre><div class="_li" id="u_0_j"></div></pre>	r="ltr" data-gr-c-s-loaded="true">
white classes 2 cf. 1top 2	s1 3 s1 uiRexGray peherder" data testid "av pavigation monubar" id "u 0 k"s
-div id="pagelet bluebar" d	ata-referrer="pagelet_bluebar">=
<pre><div c<="" id="globalContainer" pre=""></div></pre>	las="liContextualLayerParent">
<pre></pre>	.ass dictortextual dependent >
<pre>lide class=" 2pie"></pre>	
<pre><div id="toolbarContainer"></div></pre>	
<pre>::<div class="clearfix" id="</pre></td><td></td></tr><tr><td></td><td><pre>id=" leftcol"="" style="margin-top: -12px;"></div></pre>	
<pre>:::<div class="5r- homeWid</pre></td><td>erContent homeFixedLavout newsFeedComposer laka lal0" id="contentCol"></div></pre>	
<pre>Ulass="clearfix" id=</pre>	"content container">
<pre>:::<div id="rightCol" role="</pre"></div></pre>	"complementary" aria-label="Reminders, trending topics and more" class="_14iw _1qkq _1qku">
<pre>:::<div id="contentArea" pre="" ro<=""></div></pre>	le="main" class="_14i5 _1qkq _1qkx">
<pre>:::<div <="" id="stream_pagelet" pre=""></div></pre>	' data-referrer="stream_pagelet" data-at-shortcutkeys="{"j":"focus on next story","k":"focus on previous
story","p":"post a new st	atus","l":"like\/unlike selected story","c":"comment on selected story","s":"share selected story","o":"op
selected story's attachme	<pre>nt","\/":"search","q":"search chat contacts","?":"show keyboard shortcuts help dialog"}"></pre>
<pre><div class="_2c44"></div></pre>	
	ne"_data-referrer="pagelet_megaphone">
	er" data-referrer="pagelet_composer">
<pre><div data-referrer="pagelet_prompts" id="pagelet_prompts</pre></td><td>"></div></pre>	
<pre><div class="pagelet" id="</pre"></div></pre>	"stories_pagelet_below_composer" data-referrer="stories_pagelet_below_composer">
<div data-gt="{" data-referrer="topnews_main_stream_408239535924329" id="topnews_main_s</td><td><pre>tream_408239535924329" ref":"nf_generic"}"=""></div>	
	_4j3f" aria-label="News Feed" role="region" id="feed_stream_5a68ebcbc6dc74f27883544">
	lem" id="newsFeedHeading">News Feed
<pre>:::<div role="feed"> :::<div role="feed"></div></div></pre>	="substream_0" data-referrer="substream_0">
ili <div></div>	- Substream_o data-referrer= Substream_o >
<div <="" id="u_ps_0_0_0" td=""><td></td></div>	
<div></div>	*
Wediv data-fte="1" d	ata-ftr="1" class="_5jmm _5pat _3lb4 s_n3308lnlp" id="hyperfeed_story_id_5a68ebcea31933368258994" data-
testid="fbfeed_story"	data-cursor=
"MTUxNjgyNTU0NzoxNTE2	ODI1NTQ30jI6LTY0NTk0OTIy0Tkw0TY4NTgwNjI6MTUxNTE4MDAyMjo2NTE0NzE2MTI0MjU5NDAxMzI3" data-dedupekey= " data-timestamp="1516764239" data-referrer="hyperfeed_story_id_5a68ebcea31933368258994" aria-posinset="1"
aria-setsize="8" role	="article" aria-labelledby="js_o" aria-describedby="js_p js_q" data-insertion-position="0">
::: <div class="_4-u2 r</td><td>nbm _4mrt _5v3q _4-u8" id="u_ps_0_0_1"></div>	
::before	
	<pre>data-ft="{"tn":"-R"}" data-gt="{"type":"click2canvas","fbsource":703,"ref":"nf_generic"}" id="u_ps_0_0_2"</pre>
<div></div>	
<div class="_5pcr</td><td>userContentWrapper" data-ft="{" tn":"-r"}"=""></div>	
<div class="_1dwg</td><td>lw_m _q70"></div>	
<div></div>	
	<pre>ata-ftr="1" class="_5jmm _5pat _3lb4 s_n3308lnlp" id="hyperfeed_story_id_5a68ebcea33ce0a39762213" data-</pre>
testid="fbfeed_story"	
	0DI1NT030jU6LTM3MzM0MzE3MjU0MDA2MDc5NDI6MTUxNjc2NDIz0To2NTE0NzE2MTI0MjU5NDAxMzI3" data-dedupekey=
"-6459492299096858062	" data-timestamp="1516677883" data-referrer="hyperfeed_story_id_5a68ebcea33ce0a39762213" aria-posinset="2"
aria-setsize="8" role	="article" aria-labelledby="js_r" aria-describedby="js_s" style="display: none !important;">
<div class="_4ikz" id<="" td=""><td>="substream_1" data-referrer="substream_1"></td></div>	="substream_1" data-referrer="substream_1">
<pre><div <mark="" id="more_pager_p</pre></td><td>agelet_5a68ebcbc6f345335430150">data-referrer="more_pager_pagelet_5a68ebcbc6f345335430150"></div></pre>	
	<u>k.com/security/hsts-pixel.qif?c=3.2.5</u> " width="0" height="0" style="display:none">
 ::after	



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15 minutes and + Like + Comment

9 minut

What is your Photography-Relate Delta . ODE saturin II

-Richard

to my portfolio! What is yours?

PictureCorrect Photography Tips My resolution for 2011 is to capture more landscape photos outside the U.S. and add more countries



bel, obe saturim II

its getting there though.

5adi Molloy get my business looking more professional: car signed: tick, makeing up portrait folders: tick, stickers & cd covers: still to do...

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Deaco

quality

5 minut







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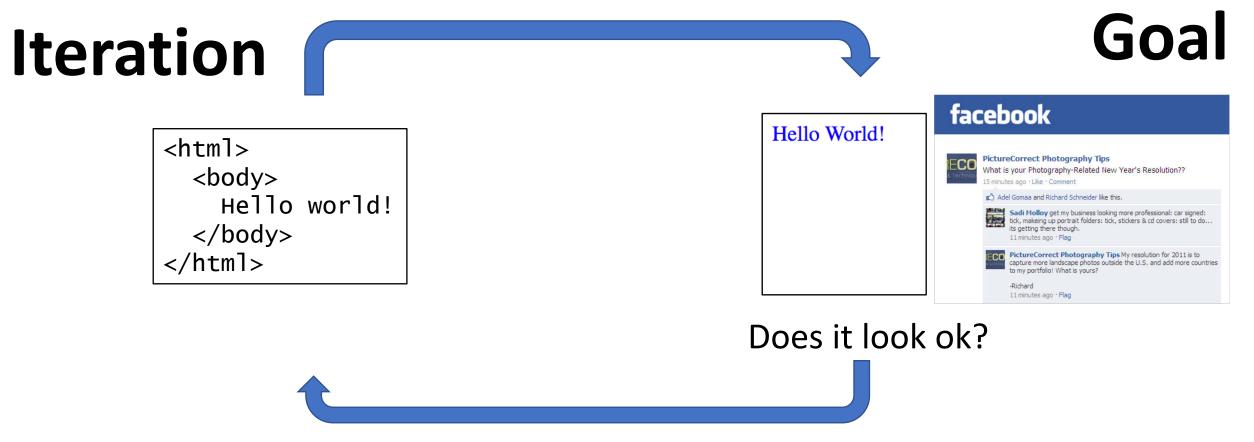
Tina Taylor Hammer Get my new business moving and have it pay for that lens and other equipment that I want (and a little for me too). 2 minutes ago • Flag



"It just doesn't work yet!"

Iterative Style of Programming

What is the **smallest** unit of progress I can make?



Step 0. Make a html page, connect some CSS

```
<!DOCTYPE html>
<html>
<head>
<style>
#test{
    color: blue;
  }
</style>
</head>
<body>
  <div id="test">Hello World!</div>
</body>
</html>
```

Hello World!	

What should we do first?

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Make a container

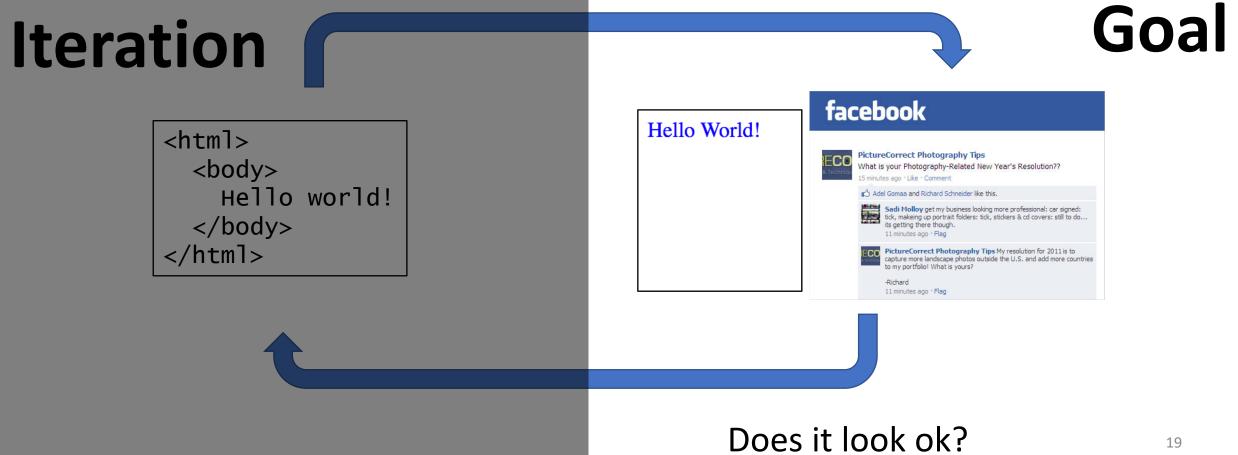
Step 1. Make a container div





Iterative Style of Programming

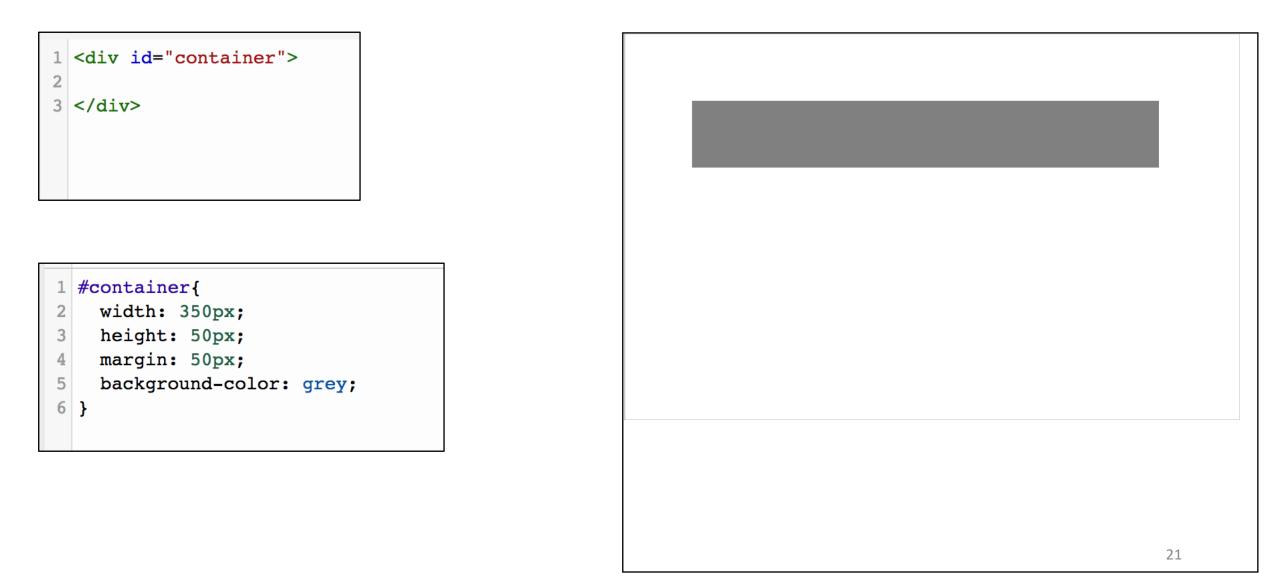
What's the most **basic** thing I can do to make **necessary** progress towards my goal?

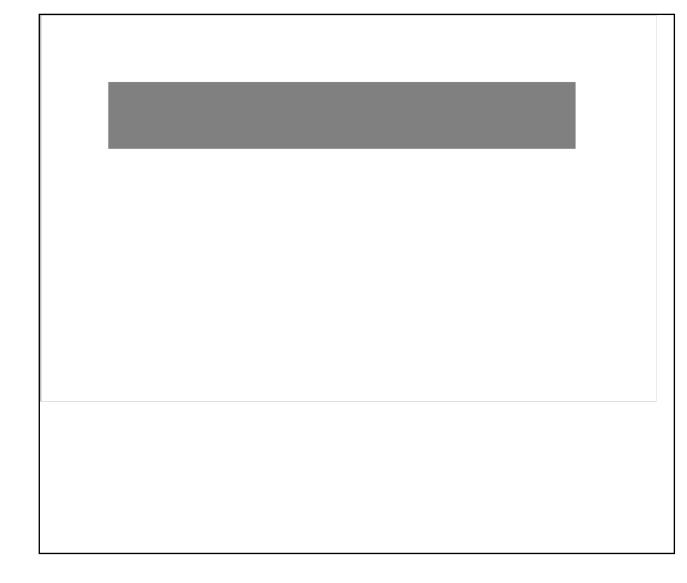


Does it look ok? What's next?



Container div has realistic width.





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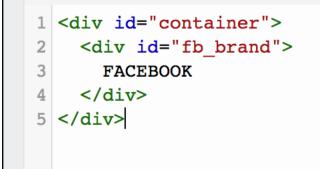


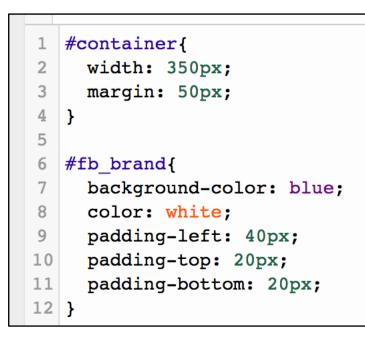
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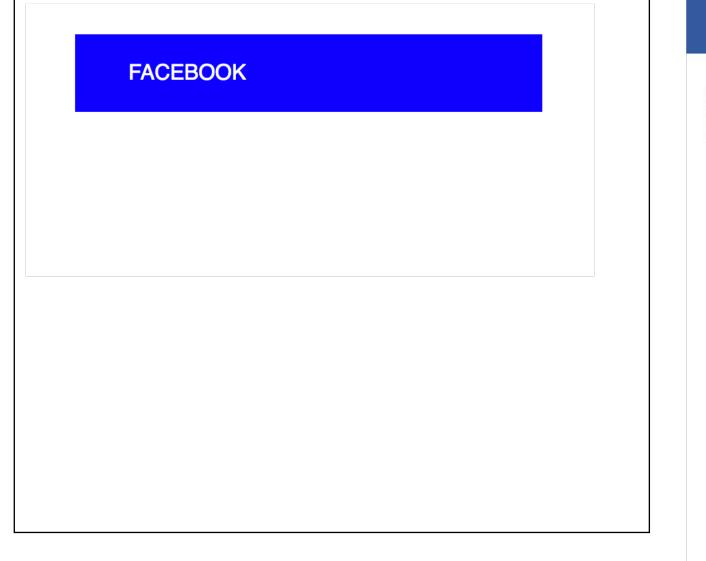
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Add the first post

1 <div id="container"> 2 <div id="fb_brand"> 3 FACEBOOK 4 </div> 5 <div id="top_post"> 6 FIRST POST 7 </div> 8 </div>

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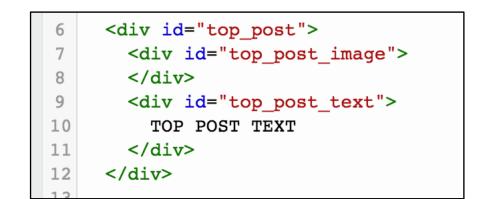


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Add internal structure to the first post

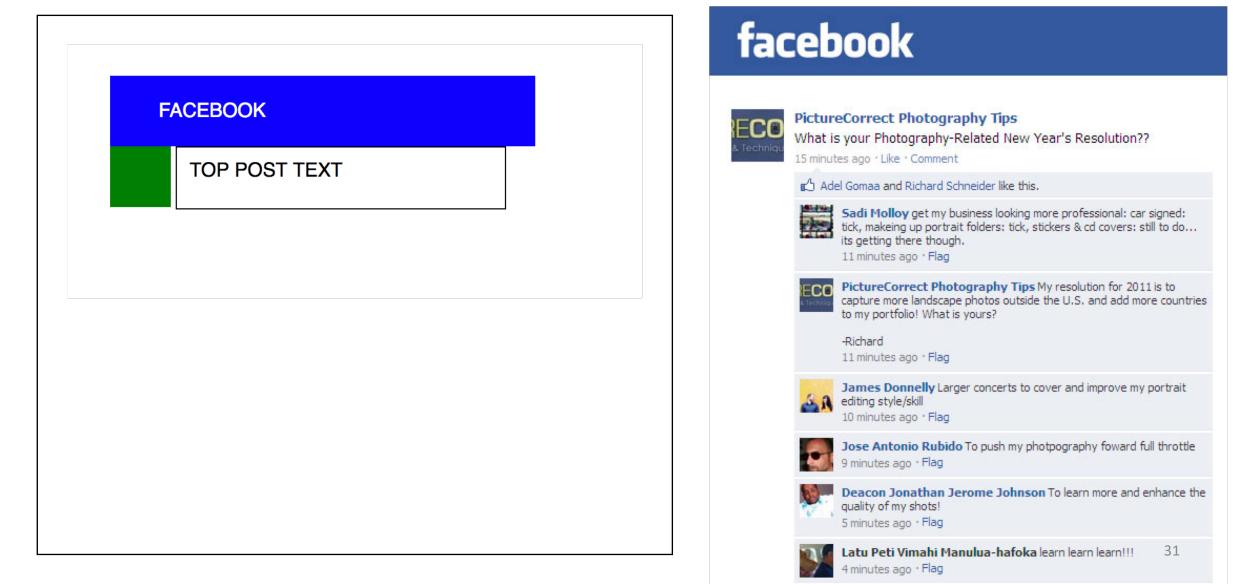


14	<pre>#top_post_image{</pre>
15	height: 50px;
16	width: 50px;
17	<pre>background-color: green;</pre>
18	<pre>display: inline-block;</pre>
19	}
20	
21	<pre>#top_post_text{</pre>
22	height: 30px;
23	width: 250px;
24	<pre>padding: 10px;</pre>
25	<pre>border: 1px solid black;</pre>
26	<pre>display: inline-block;</pre>
27	<pre>vertical-align: top;</pre>
28	
29	}

F	ACEBOOK
	TOP POST TEXT

By default, DIV elements will flow down the page. display: block To get them to flow across the page, you must set display: inline-block

	FACEBOOK Image: Description of the second						
		14 #top post image{					
18	<pre>#top post image{</pre>	15 height: 50px;					
19		16 width: 50px;					
20		17 background-color: green;					
21	background-color: green;	18 display: inline-block;					
22	<pre>/*display: inline-block;*/</pre>	19 }					
23	}	20					
24		21 #top_post_text{					
25	<pre>#top_post_text{</pre>	22 height: 30px;					
26	height: 30px;	23 width: 250px;					
27	width: 250px;	24 padding: 10px;					
28	<pre>padding: 10px;</pre>	25 border: 1px solid black;					
29	<pre>border: 1px solid black;</pre>	26 display: inline-block;					
30	<pre>/*display: inline-block;*/</pre>	27 vertical-align: top;					
31	<pre>vertical-align: top;</pre>	28					
32	}	29 }					



Add padding on the top post

6	<div id="top_post"></div>
7	<pre><div id="top_post_image"></div></pre>
8	
9	<pre><div id="top_post_text"></div></pre>
10	TOP POST TEXT
11	
12	
12	

FA	CEBOOK
	TOP POST TEXT

TO		
14	<pre>#top_post{</pre>	
15	padding:	10px;
16	}	
17		

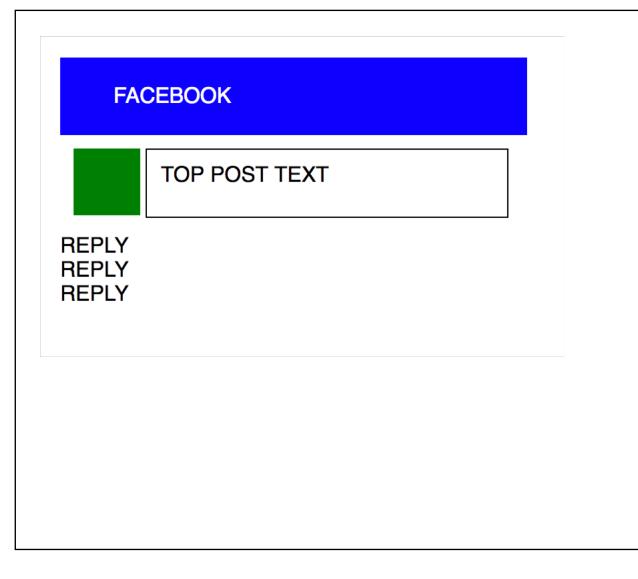


33

Replies

13	<pre><div id="reply_container"></div></pre>
14	<div class="reply"></div>
15	REPLY
16	
17	<div class="reply"></div>
18	REPLY
19	
20	<div class="reply"></div>
21	REPLY
22	
23	

FA	FACEBOOK	
	TOP POST TEXT	
REPLY REPLY REPLY		



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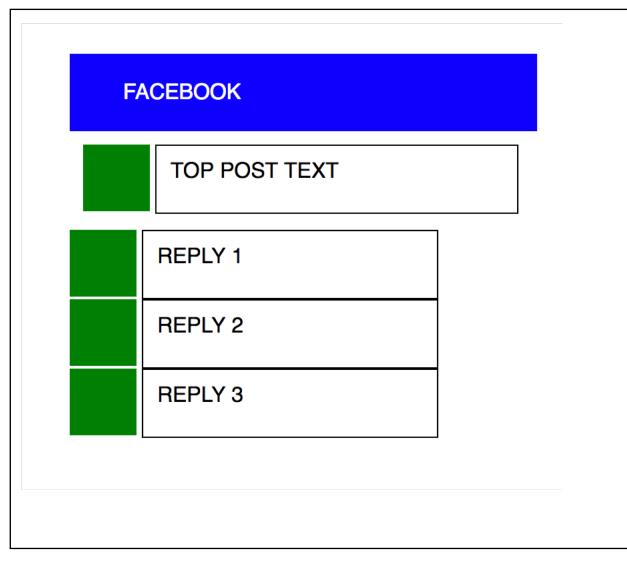
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Reply substructure: image and text

14	<div class="reply"></div>
.5	<pre><div class="reply_image"></div></pre>
6	
17	<pre><div class="reply_text"></div></pre>
18	REPLY 1
19	
20	
5	.reply_image{
86	height: 50px;
37	width: 50px;
38	background-color: green;
39	display: inline-block;
40	vertical-align: top;
41	}
42	
43	.reply_text{
44	height: 30px;
45	width: 200px;
46	<pre>padding: 10px;</pre>
17	<pre>border: 1px solid black;</pre>
48	<pre>display: inline-block;</pre>
19	<pre>vertical-align: top;</pre>
50	}



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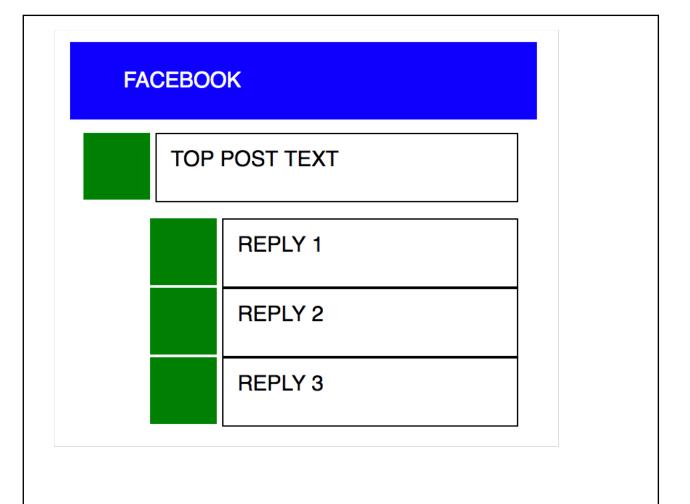
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Reply Container positioning

13	<pre><div id="reply_container"></div></pre>
14	<pre><div class="reply"></div></pre>
15	<pre><div class="reply_image"></div></pre>
16	
17	<pre><div class="reply_text"></div></pre>
18	REPLY 1
19	
20	

35	<pre>#reply_container{</pre>
36	<pre>padding-left: 60px;</pre>
37	}
38	

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TOP POST TEXT		
	REPLY 1	
	REPLY 2	
	REPLY 3	



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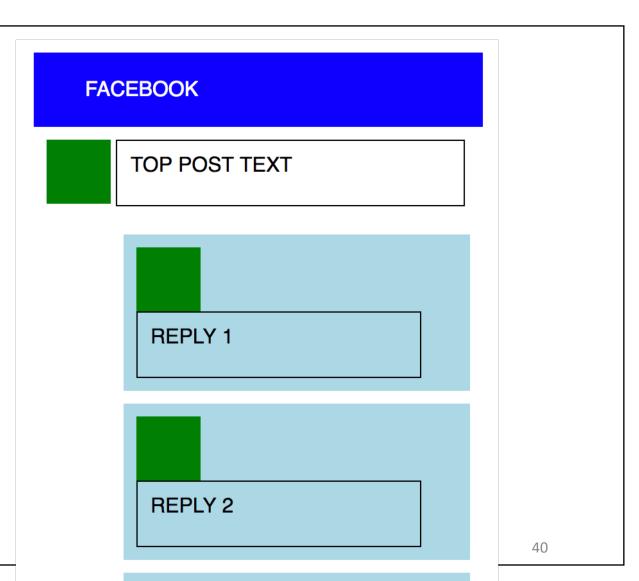
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Reply Class background-color

13	<pre><div id="reply_container"></div></pre>
14	<pre><div class="reply"></div></pre>
15	<pre><div class="reply_image"></div></pre>
16	
17	<pre><div class="reply_text"></div></pre>
18	REPLY 1
19	
20	

<pre>39 .reply{</pre>

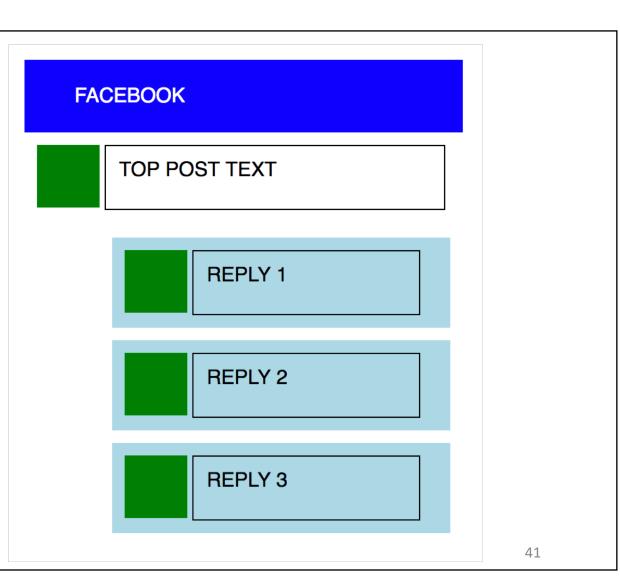
- 40 background-color: lightblue;
- 41 padding: 10px;
- 42 margin: 10px;
- 43 }



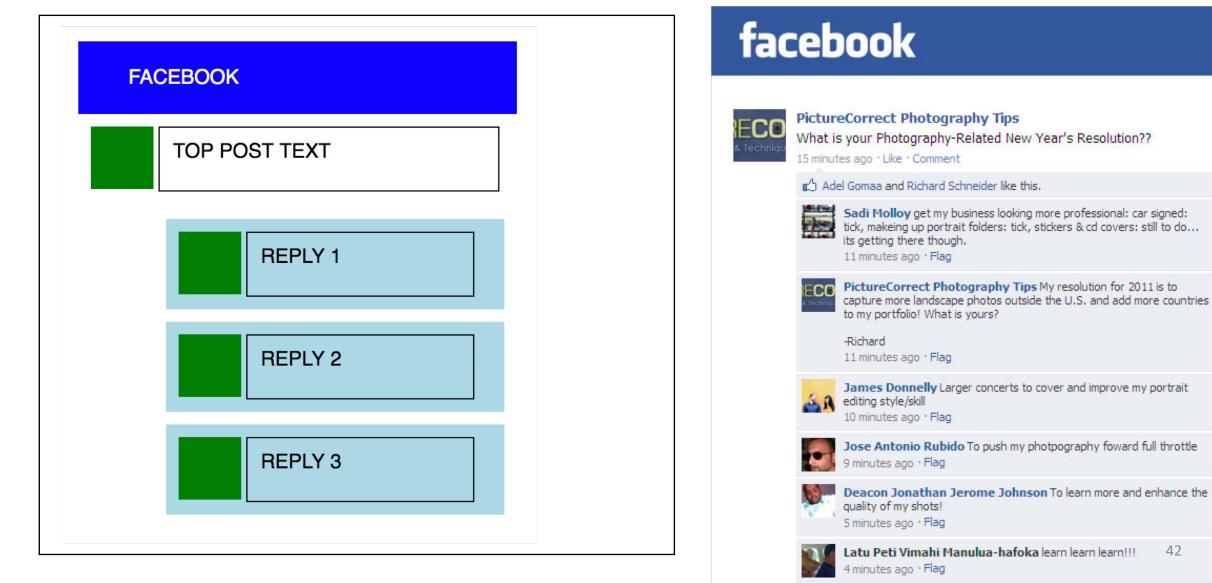
Reduce Reply Text Width

13	<pre><div id="reply_container"></div></pre>
14	<pre><div class="reply"></div></pre>
15	<pre><div class="reply_image"></div></pre>
16	
17	<pre><div class="reply_text"></div></pre>
18	REPLY 1
19	
20	

53	.reply_text{
54	height: 30px;
55	width: 160px;
56	<pre>padding: 10px;</pre>
57	<pre>border: 1px solid black;</pre>
58	<pre>display: inline-block;</pre>
59	<pre>vertical-align: top;</pre>
60	}



What next? Am I done?

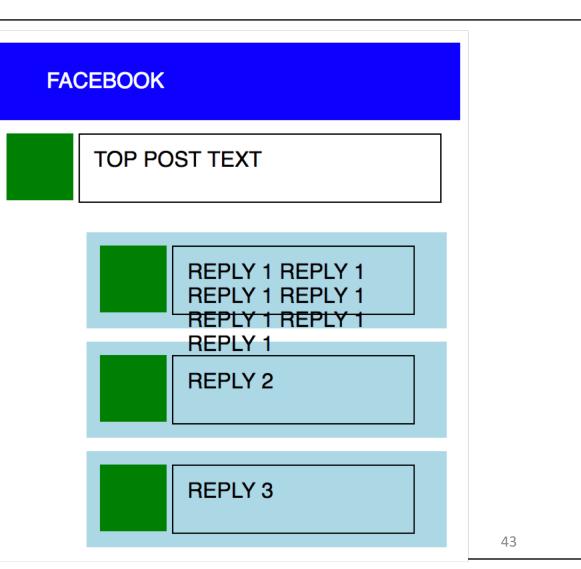


42

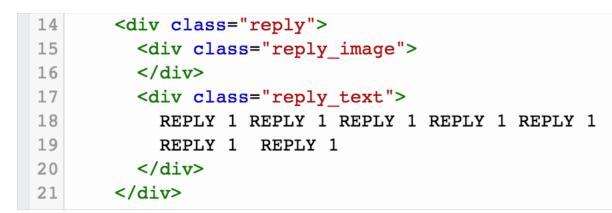
Reply Text is longer

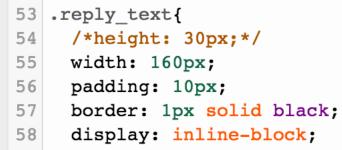






Reply Text height fixed



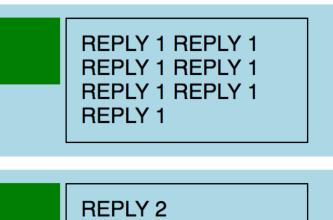


60 }

```
59 vertical-align: top;
```

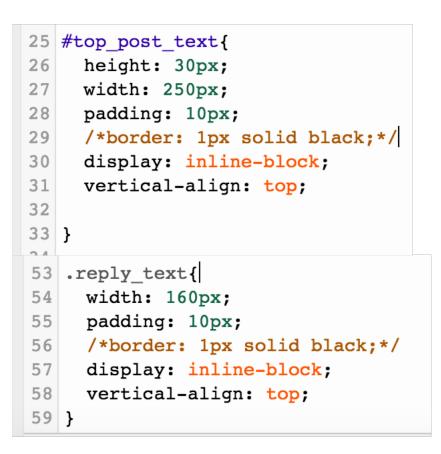
FACEBOOK

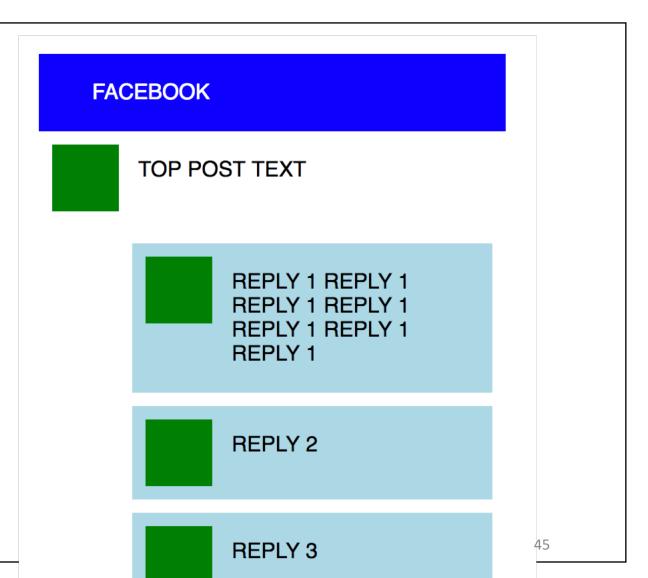
TOP POST TEXT

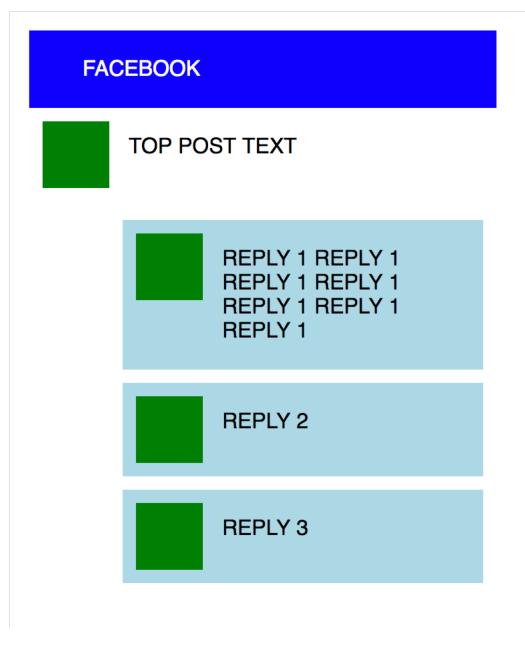


REPLY 3

Remove borders







facebook



PictureCorrect Photography Tips What is your Photography-Related New Year's Resolution?? 15 minutes ago · Like · Comment

🖒 Adel Gomaa and Richard Schneider like this.



Sadi Molloy get my business looking more professional: car signed: tick, makeing up portrait folders: tick, stickers & cd covers: still to do... its getting there though. 11 minutes ago · Flag

FCO PictureCorrect Photography Tips My resolution for 2011 is to capture more landscape photos outside the U.S. and add more countries to my portfolio! What is yours?

-Richard 11 minutes ago · Flag



James Donnelly Larger concerts to cover and improve my portrait 🞎 👔 editing style/skill 10 minutes ago · Flag



Jose Antonio Rubido To push my photpography foward full throttle 9 minutes ago · Flag



Deacon Jonathan Jerome Johnson To learn more and enhance the quality of my shots! 5 minutes ago · Flag



Latu Peti Vimahi Manulua-hafoka learn learn !!!! 4 minutes ago · Flag



Tina Taylor Hammer Get my new business moving and have it pay for that lens and other equipment that I want (and a little for me too). 46 2 minutes ago · Flag

After layout... what next?

facebook



PictureCorrect Photography Tips What is your Photography-Related New Year's Resolution?? 15 minutes ago · Like · Comment

🖒 Adel Gomaa and Richard Schneider like this.



Sadi Molloy get my business looking more professional: car signed: tick, makeing up portrait folders: tick, stickers & cd covers: still to do... its getting there though. 11 minutes ago · Flag



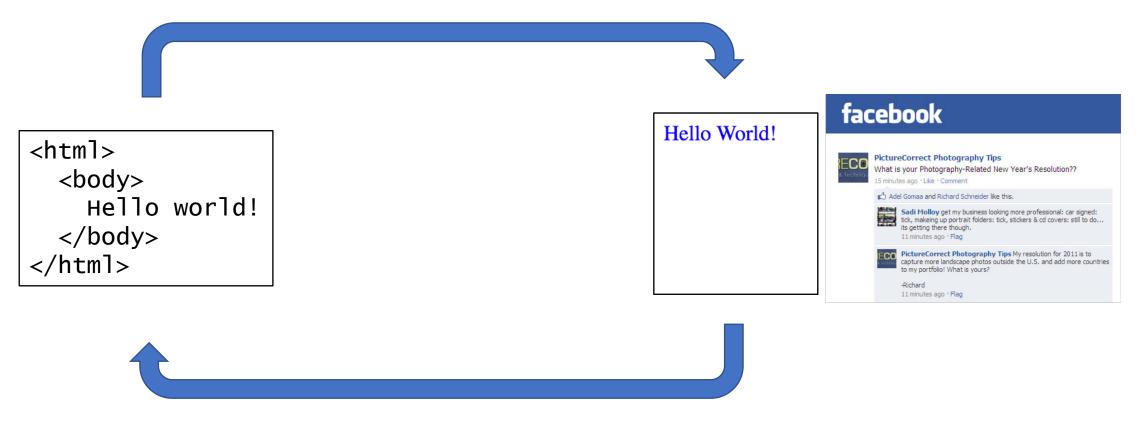
PictureCorrect Photography Tips My resolution for 2011 is to capture more landscape photos outside the U.S. and add more countries to my portfolio! What is yours?

-Richard

11 minutes and + Flag

Iterative Style of Programming helps you build a mental model of your code.

What's the small unit of progress I can make?



Does it look ok?

Iterative Style of Programming helped me recover from errors one at a time (as I created them)

Error 1: display inline-block	Error 2: reply div padding	Error 3: Reply div height			
FACEBOOK	FACEBOOK	FACEBOOK			
TOP POST TEXT	TOP POST TEXT	TOP POST TEXT			
	REPLY 1	REPLY 1 REPLY 1 REPLY 1 REPLY 1 REPLY 1 REPLY 1 REPLY 1 REPLY 1			
HOUSE FOX M.D.	REPLY 2	REPLY 2 REPLY 3			
		49			

Once you have too many bugs, you won't fix it.





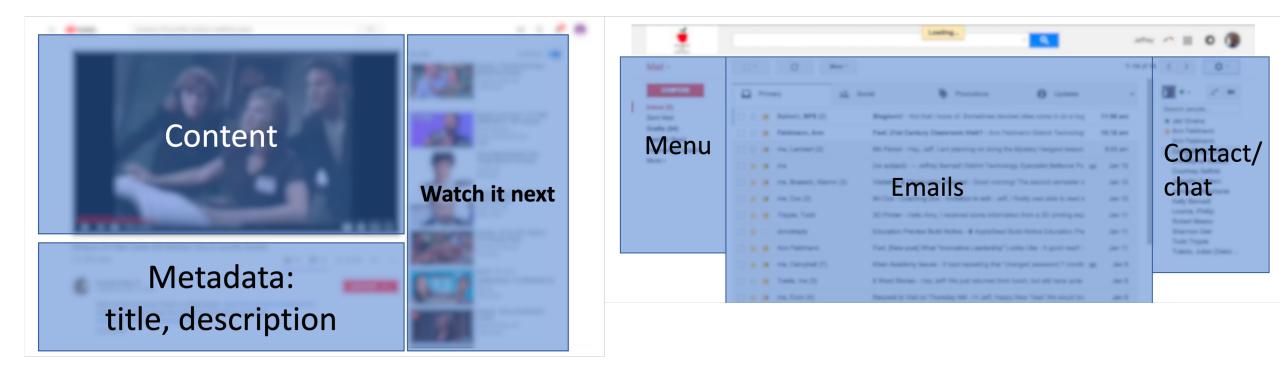
Grids

Currently the dominant way to layout information

That worked BUT it would be must easier if we had a grid.



How to guide users attention:



We can implement conceptual groupings in a grid

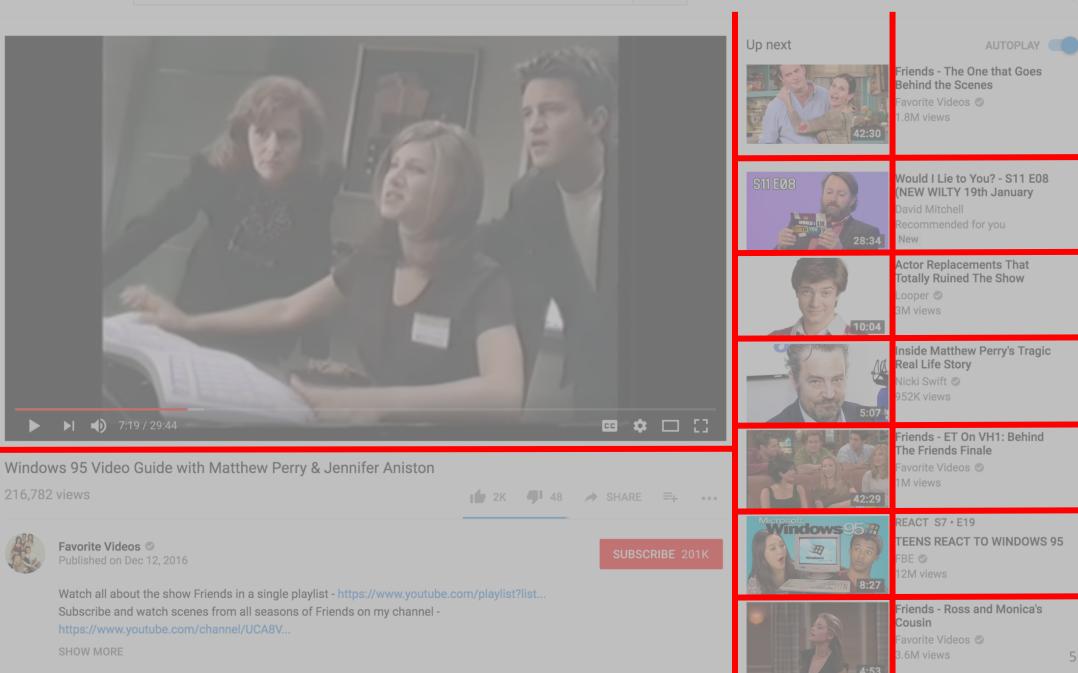
Mail •	C More *		1-14 of 14 <	> \$
COMPOSE	Primary Sc	ocal Promotions 🕕 Updates	-	• • <u>6</u> * III
Inbox (2) Sent Mail	🗌 📩 Ď Baldwin, BPS (2)	Bloglovin' - Not that I know of. Sometimes blocked sites come in on a hug	11:08 am	arch people Jed Givens
Drafts (54) Need to Read	🗌 😭 Ď Feldmann, Ann	Fwd: 21st Century Classroom Visit? - Ann Feldmann District Technolog	10:18 am 😐	Ann Feldmann
Technology Coach	🗌 ☆ 💌 me, Lambert (2)	8th Period - Hey, Jeff. I am planning on doing the Mystery Hangout lesson	8:05 am	Ann Feldmann Cadwallader, Julie
More -	🗌 🚖 💌 me	(no subject) Jeffrey Bernadt District Technology Specialist Bellevue Pu	Jan 12	Chrisiopher Kessell Courtney Saffold
	🗌 🚖 💌 me, Braasch, Klamm (3)	Visitation & Observation Request - Good morning! The second semester is	Jan 12	Jeanette Carlson
	🗌 🌟 💌 me, Cox (2)	Bri Cox - Coaching Doc - Invitation to edit - Jeff, I finally was able to read a	100.10	Johnson, Stephanie Kelly Bernadt
	🗌 🜟 ≥ Tripple, Todd	3D Printer - Hello Amy, I received some information from a 3D printing exp	Jan 11	Loomis, Phillip Robert Mason
	🗌 🌟 🕞 donotreply	Education Preview Build Notice - & AppleSeed Build Notice Education Pre		Shannon Gier
	🖂 🌟 逐 Ann Feldmann	Fwd: [New post] What "Innovative Leadership" Looks Like - A good read! :-	lon 11	Todd Tripple Toledo, Julian (Delor
	🗌 🌟 逐 me, Campbell (7)	Khan Academy Issues - It kept repeating that "changed password 7 month C	Jan 8	
	🗌 🚖 这 Toelle, me (3)	6 Word Stories - Hey Jeff! We just returned from lunch, but still have quite	Jan 8	
	🗌 🌟 💌 me, Evon (4)	Request to Visit on Thursday AM - Hi Jeff, Happy New Year! We would lov	Jan 6	
	🗌 🔆 💌 Jeffrey Bernadt	Shared from Twitter: What teachers need to know about multicultural educ	12/23/15	
			4 1	

📃 🛛 🕒 YouTube

windows 95 jennifer aniston matthew perry

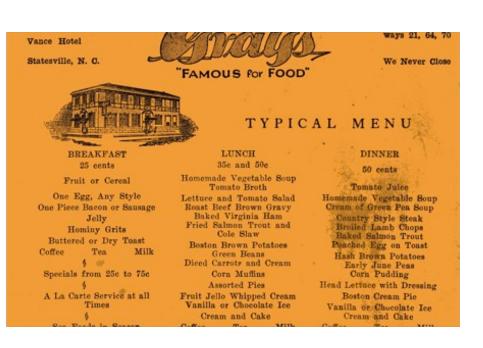
Q





Old school information layout





Symmetrical

Eggs and Omelettes Scrambled Eggs with English Kippered Herrings 1.00 Hangtown Fried Oyster Omelette 1.00 Specialties of the House SPAGHETTI DERBY: Italian Spaghetti, Fresh Tomatoes, Mushrooms and Meat Sauce 1.10 MEXICAN TAMALE (Old Fashioned Mexican Maize Chicken Tamale Fresh Daily) 90 CREAMED TURKEY DERBY (All White Meat, Served in Toasted Crouton, with Cranberry Jelly) 2.25 PAN FRIED CORNED BEEF HASH 1.00; with Poached Egg 1.25 STEAK HAMBURGER DE LUXE (Ground Sirloin Steak) with or without Onions, Potatoes 1.85 DE LUXE CHICKEN ENCHILADAS with Chili Con Carne and Frijoles 1.50 FILET MIGNON TID-BITS with Sliced Mushrooms, Chef's Special, Risotto 1.85 SCALLOPED CHICKEN A LA KING in Patty Shell, Peas in Butter 1.25 Entrees HUNGARIAN VEAL GOULASH with Egg Noodles Polonaise 1.50 RACK OF LAMB PARISIENNE in Casserole 1.50 BOILED HAM HOCKS and Baked Beans, Boston Brown Bread 95 PAN FRIED ROAST BEEF HASH, Poached Egg 1.00 MEDAILLONS OF PORK FILET Saute, Marsala, Timbale of Rice 1.50 FRESH ASPARAGUS with Fried Ham, Sauce Hollandaise 1.65 DERBY APPLE PANCAKE with Cinnamon Butter 1.10 EMINCE OF CALF'S LIVER with Mushrooms, in Sour Cream Sauce, Rice 1.20 Desserts Baked Fresh Rhubarb 50 Ice Cream 40 Parfaits 50 Sherbet 40 Pastry Specials Blackbottom Pie 40 Rio Rita Cake 40 Parisian Pastries 40 Rice or Chocolate Pudding 3 BEVERAGES AS LISTED ON A LA CARTE MENU Sales Tax will be added on all taxable items in accordance with the r Sorry we cannot be responsible for last articles Friday, January 17, 1941

Before: Symmetric Layout

Now:

Asymmetric Grids Layout



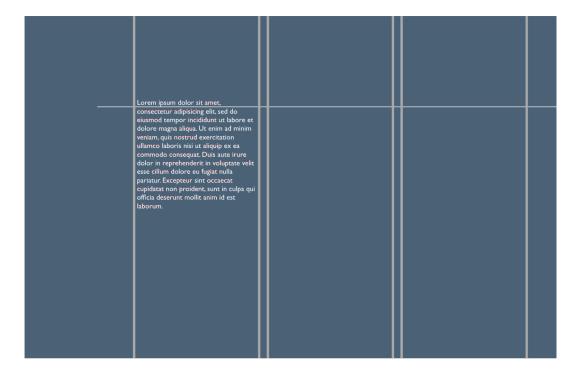
The Bauhaus School of Design



Typographer Jan Tschichold made layouts inspired by Bauhaus

_					
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	Lorenn ipsann dolor sit annet,		l de		
	consectetur adipisicing elit, sed do				
	consectedur adipisicing end, sed do				
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	cupidatat non proident, sunt in cuipa qui				
	officia deserunt mollit anim id est				
	laborum.				
					60

You can convey importance of elements within the grid



Lorem Ipsum!		
dolor sit amet Consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ulalameto laboris nisi ut aliquip ex ea commodo conseguat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat rulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.		

You can also convey importance by changing the grid.

 Lorem Ipsum!	Lorem Ipsum!	Lorem lpsum!
dolor sit amet	dolor sit amet	dolor sit amet
Consectetur adipisicing elit, sed do	Consectetur adipisicing elit, sed do	Consectetur adipisicing elit, sed do
eiusmod tempor incididunt ut labore et	eiusmod tempor incididunt ut labore et	eiusmod tempor incididunt ut labore et
dolore magna aliqua. Ut enim ad minim	dolore magna aliqua. Ut enim ad minim	dolore magna aliqua. Ut enim ad minim
veniam, quis nostruid exercitation	veniam, quis nostrud exercitation	veniam, quis nostrud exercitation
ullamco laboris insi ut aliquip ex ea	ullamco laboris nisi ut aliquip ex ea	ullamco laboris nisi ut aliquip ex ea
commodo consequat. Duis aute irure	commodo consequat. Duis aute irure	commodo consequat. Duis aute irure
dolor in reprehenderit in voluptate velit	dolor in reprehenderit in voluptate velit	dolor in reprehenderit in voluptate velit
esse cillum dolore eu fugiat nulla	esse cillum dolore eu fugiat nulla	esse cilum dolore eu fugiat nulla
pariatur. Excepteur sint occaecat	pariatur. Excepteur sint occaecat	pariatur. Excepteur sint occaecat
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laborum.	laborum.	laborum.

Lorem Ipsum Dolor Sit Amet Consectetur

Lorem ipsum dolor sit amet

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Not all the ideas of the Bauhaus school are new.



But there is freedom from the symmetric layout.

Twitter Bootstrap

An implementation of grid layout

How many **columns** do you see?

Columbia University 🤣

@Columbia

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	Harvard University 🗟 @H ×
	Find people you know Import your contacts from Gmail
	Connect other address books
	Trends for you · Change #SDLive 37.9K Tweets
	#Sabres 😪 2,607 Tweets
	James Ingram R&B legend James Ingram has died at age 66
	Rusev 3,867 Tweets

#SBGC

How wide is the middle (compared to the sides)?

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"The best education is one that prepares you for your own venture into the unknown." - Lee C. Bollinger, Columbia University President **Tweets**

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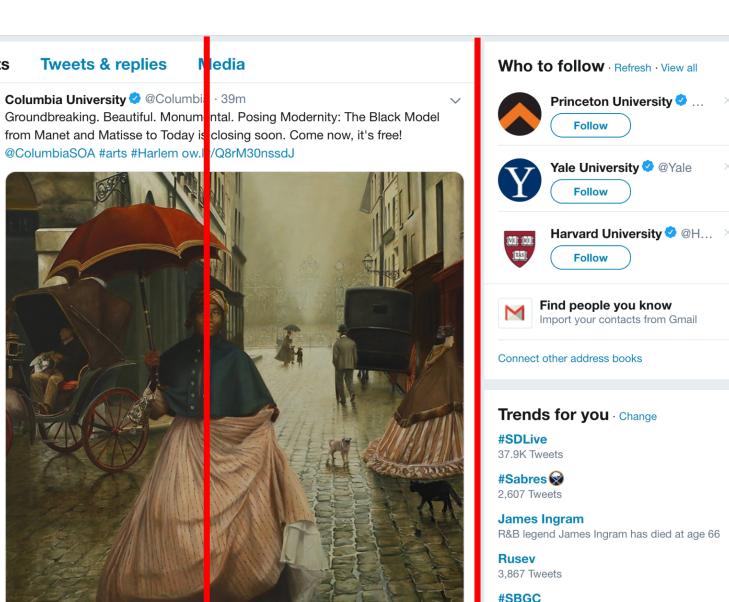
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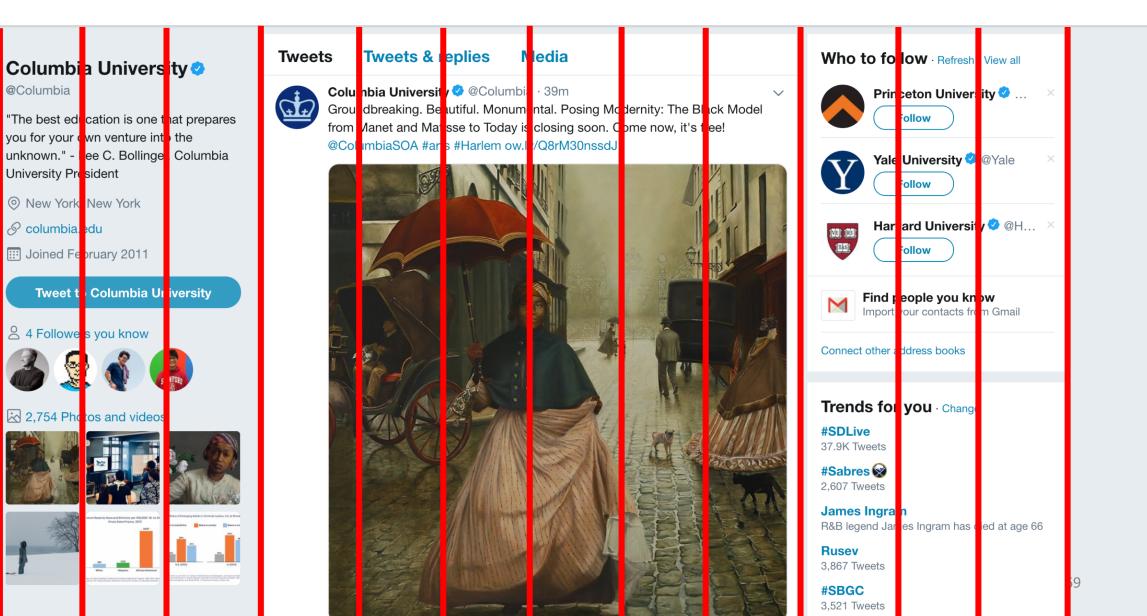


All content goes in the main container

The container is divided into 12 columns



You get to apportion those 12 columns



12 columns: split in 3, 6, 3

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Bootstrap grid. How many columns?

| .col-
md-1 |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| .col-md-8 | 3 | | | | | | | | .col-md-4 | | |
| .col-md-4 | 1 | | | .col-md-4 | | | | .col-md-4 | | | |
| .col-md-6 | 3 | | | | | .col-md-6 | 6 | | | | |
| | | | | | | | | | | | |

Do the columns have the same rows?



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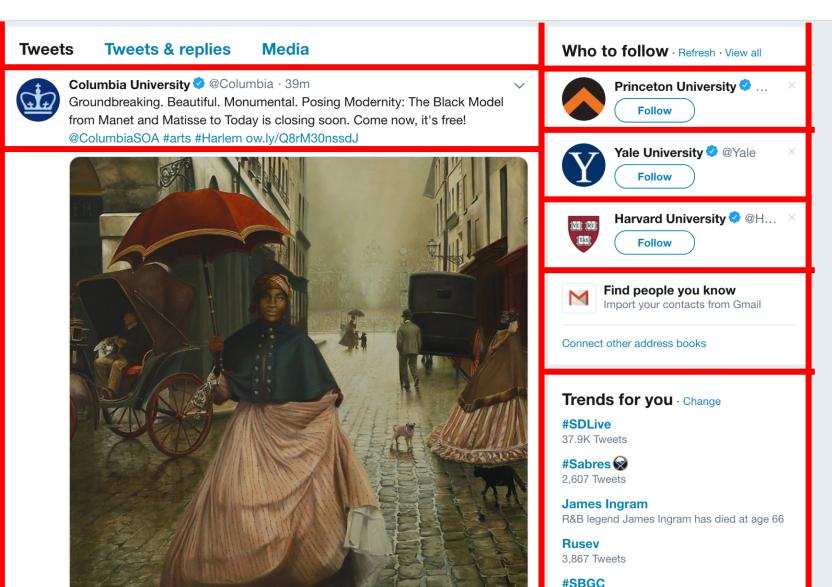
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Is there alignment within the column?



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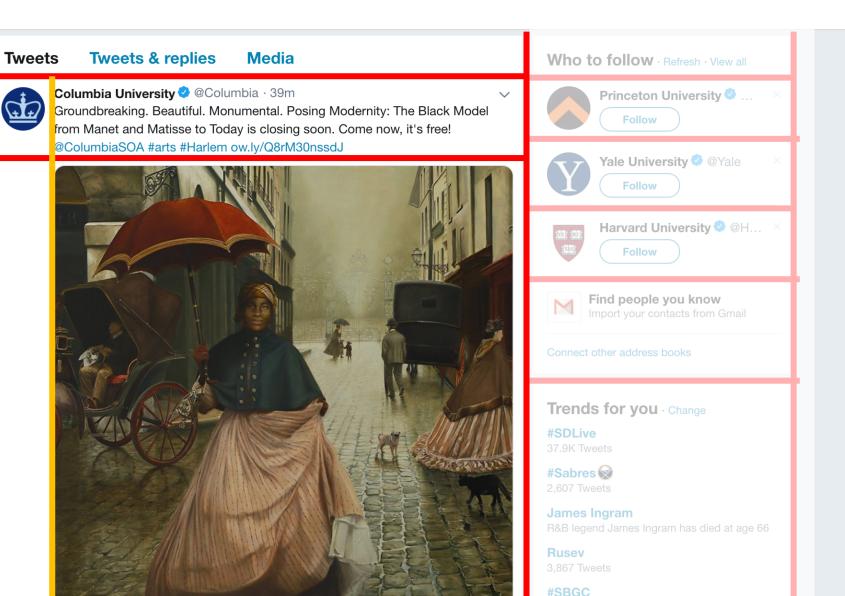
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Can you use the original grid?



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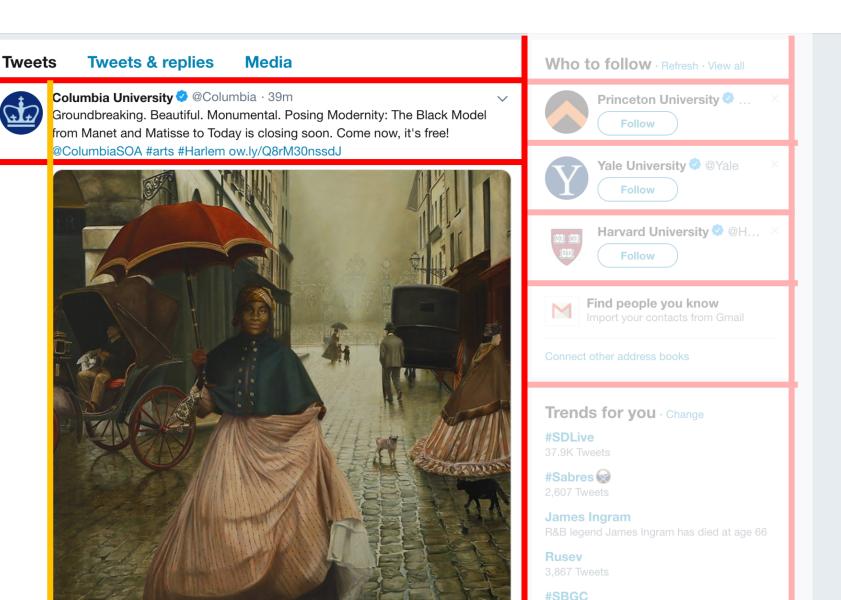
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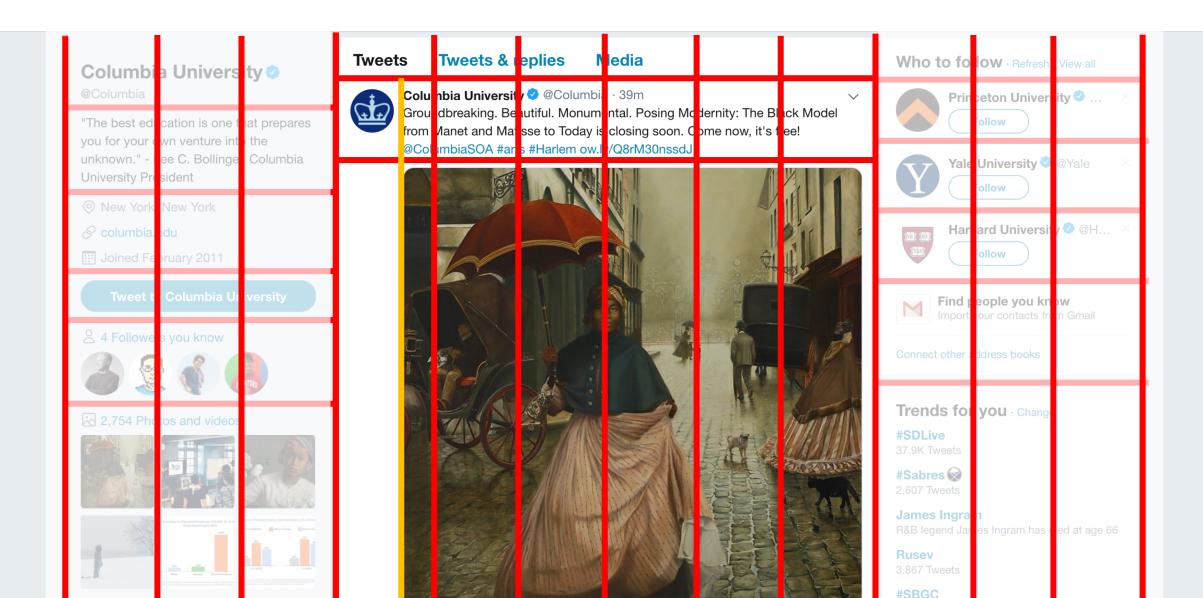


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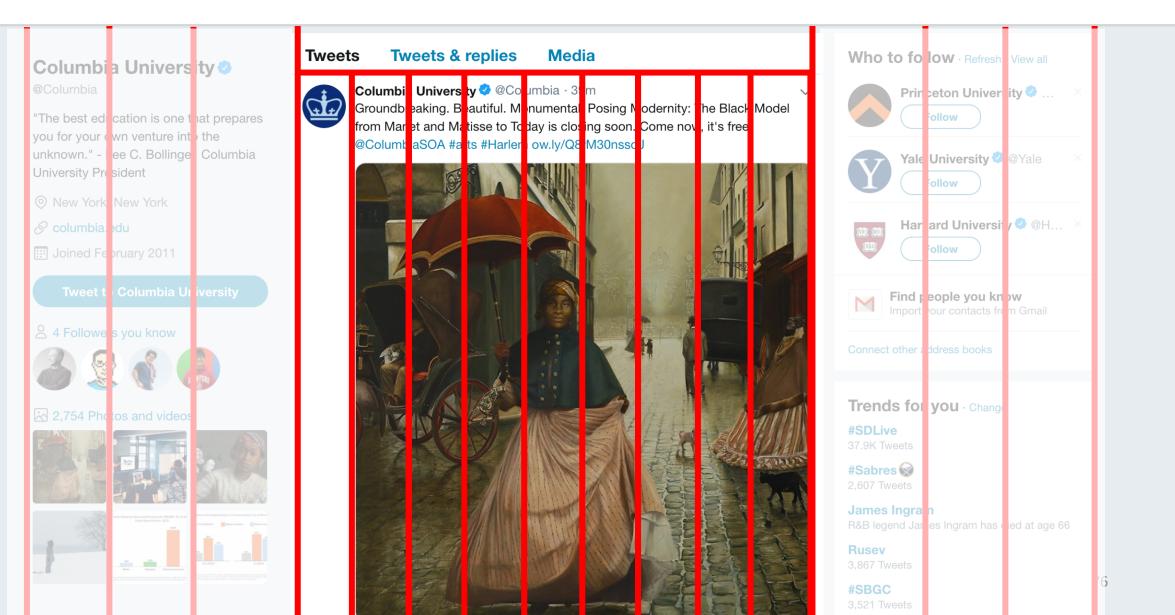




Can you use the original grid? NO



Grids within grids!!!

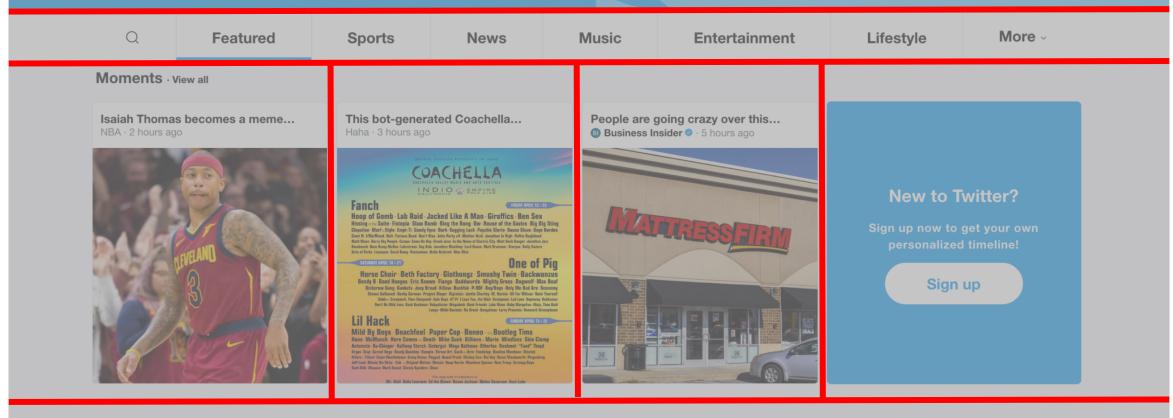


Bootstrap grid. Apportion 12 columns.

	.col- md-1												
	.col-md-8	3							.col-md-4				
ľ	.col-md-4	1			.col-md-4	4			.col-md-4				
	.col-md-6	3					.col-md-6	6					

What's happening?

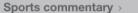
up) (Lo



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General News >







World News >



Add Bootstrap to your HTML

CSS & JS in <head> tag, before your own CSS

1	</th <th>doctype html>-</th>	doctype html>-
2	<	
3		<head>-</head>
4		<meta charset="utf-8"/> -
5		<title>Test</title> r
6		
7		Add Boostrap -
8		<pre><link href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0-alpha.6/css/bootstrap.min.css" integi<="" pre="" rel="stylesheet"/></pre>
9		<pre><script 1.4.0="" 4.0.0-alpha.6="" ajax="" bootstrap="" bootstrap.min.js"="" cdnjs.cloudflare.com="" components="" https:="" integrity="sha384-vBWWz]</pre></td></tr><tr><td>12</td><td></td><td></td></tr><tr><td>13</td><td></td><td><! Add our own CSS and JS>-</td></tr><tr><td>14</td><td></td><td></td></tr><tr><td>15</td><td></td><td>k href=" js="" libs="" main.css"="" maxcdn.bootstrapcdn.com="" rel="stylesheet" src="https://code.jquery.com/jquery-3.1.1.slim.min.js" tether="" tether.min.js"="" type="text/css">=</td></tr><tr><td>16</td><td>-</td><td></td></tr></tbody></table></script></pre>

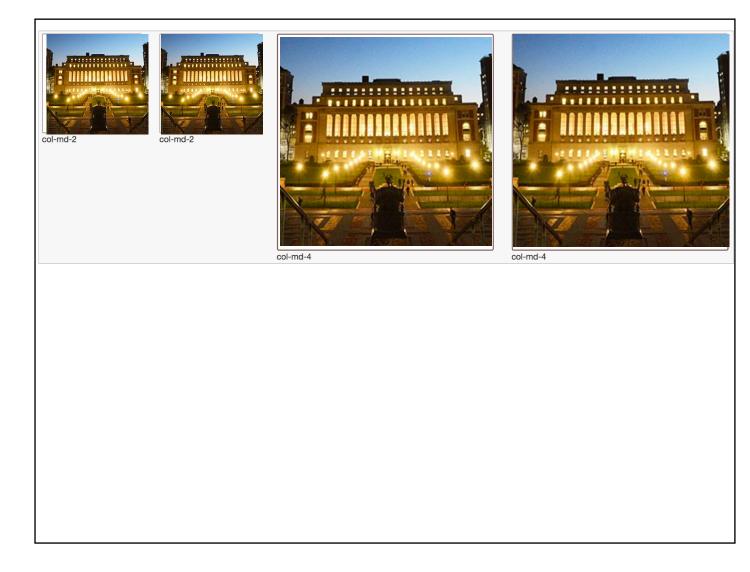
1. What will this produce?

```
<div class="container">
 <div class="row">
   <div class="col-md-3">
      <img src="./columbia.jpg">
   </div>
   <div class="col-md-3">
      <img src="./columbia.jpg">
   </div>
   <div class="col-md-3">
     <img src="./columbia.jpg">
   </div>
   <div class="col-md-3">
      <img src="./columbia.jpg">
   </div>
 </div>
</div>
```



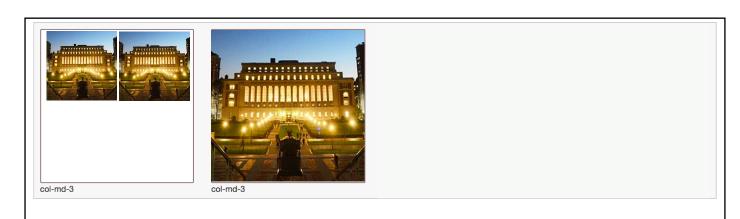
2. What will this produce?

```
<div class="container">
 <div class="row">
   <div class="col-md-2">
      <img src="./columbia.jpg">
   </div>
   <div class="col-md-2">
      <img src="./columbia.jpg">
   </div>
   <div class="col-md-4">
     <img src="./columbia.jpg">
   </div>
   <div class="col-md-4">
      <img src="./columbia.jpg">
   </div>
 </div>
</div>
```

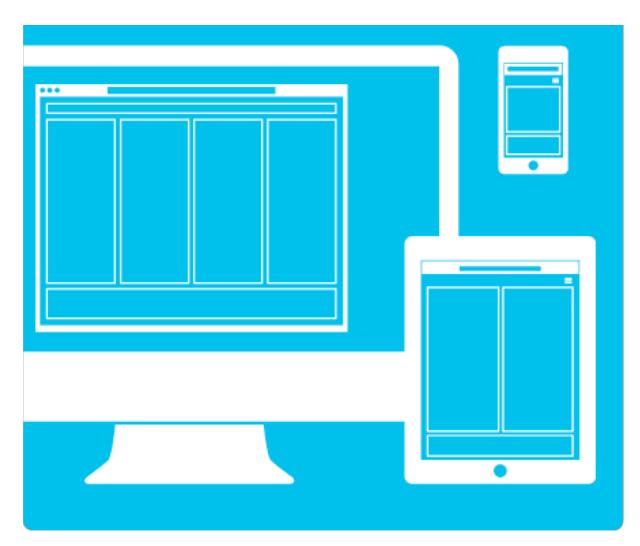


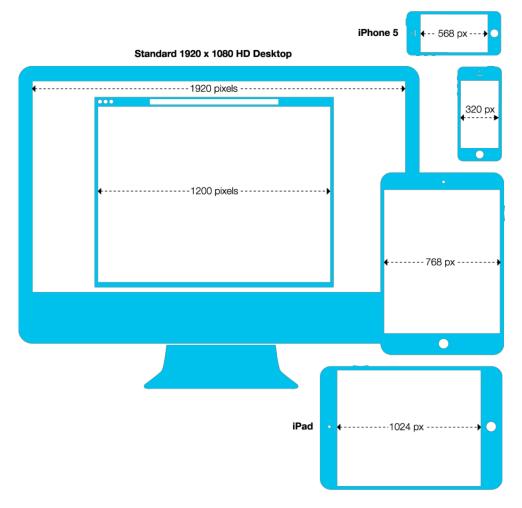
3. What will this produce?

```
<div class="container">
 <div class="row">
   <div class="col-md-3">
      <div class="row">
        <div class="col-md-6">
            <img src="./cu.jpg">
        </div>
        <div class="col-md-6">
            <img src="./cu.jpg">
        </div>
      </div>
   </div>
   <div class="col-md-3">
      <img src="./cu.jpg">
   </div>
   <div class="col-md-6">
   </div>
 </div>
</div>
```

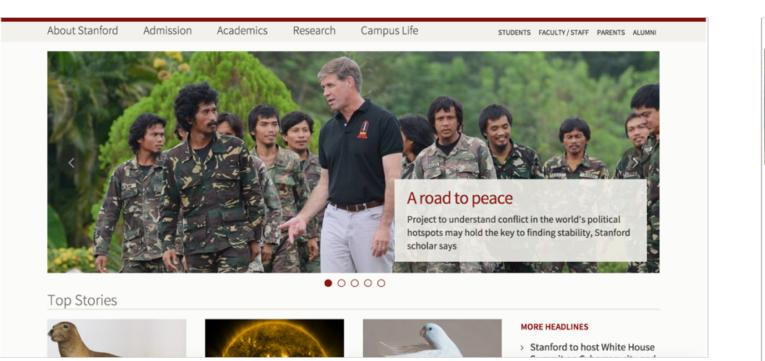


Bootstrap solves another problem





Responsive Design



MENU



A ROAD TO PEACE Project to understand conflict in the world's political hotspots may hold the key to finding stability, Stanford scholar says

 $\bullet \circ \circ \circ \circ$

Top Stories



Marine extinctions

Industrial revolution of the oceans will imperil wildlife, says Stanford scientist.



Solar flares

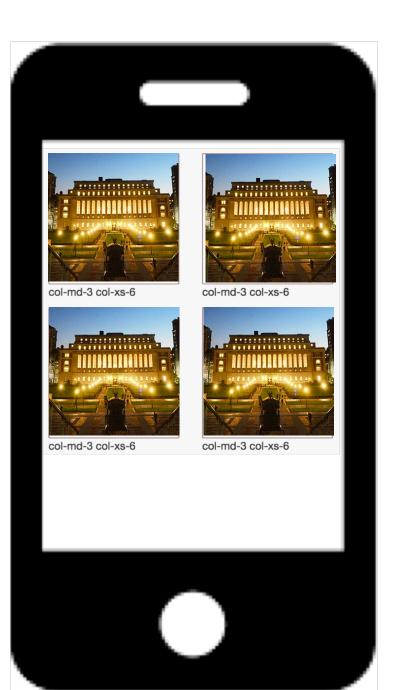
Artificial intelligence helps Stanford

Four Device sizes

	Large lg: 1200	»× Desk
	Medium md: 992px	Lapt
Small	sm: 768px	Tabl
Extra-Small	xs: < 768px	Phor

What will this do on a phone?

```
<div class="row">
  <div class="col-md-3 col-xs-6">
    <img src="./columbia.jpg">
  </div>
  <div class="col-md-3 col-xs-6">
    <img src ="./columbia.jpg">
  </div>
  <div class="col-md-3 col-xs-6">
    <img src ="./columbia.jpg">
  </div>
  <div class="col-md-3 col-xs-6">
    <img src ="./columbia.jpg">
  </div>
</div>
```



What's the difference in layout?

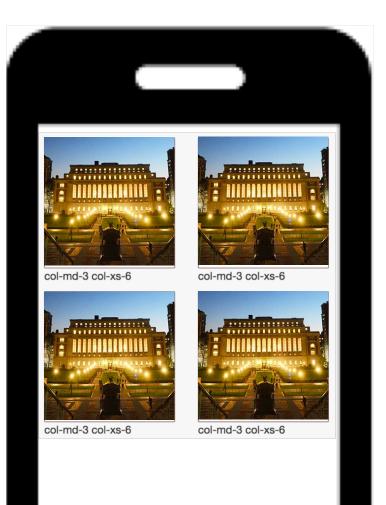
class="col-md-3"



col-md-3



class="col-md-3 col-xs-6"



In summary...

Web Browsers are in charge of rendering HTML

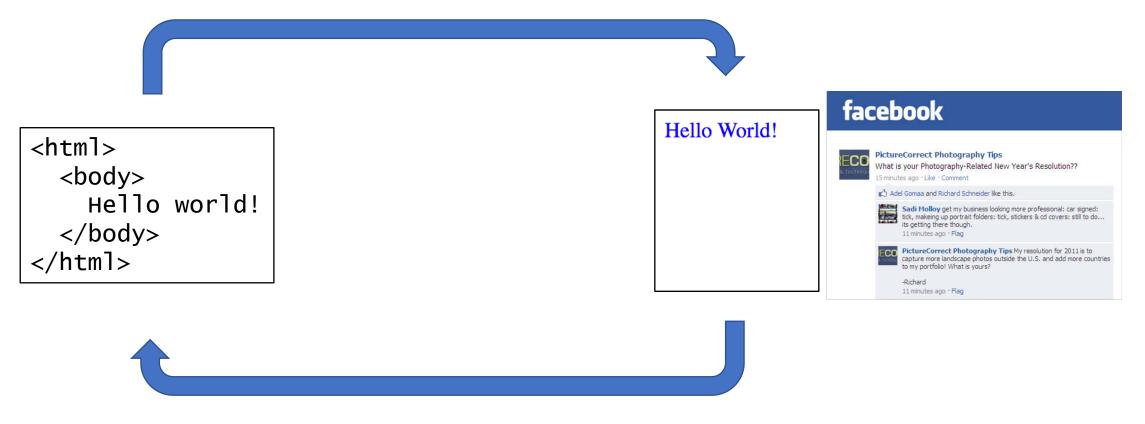
< >	invitation0.html	•••	D	invitation	0.html	×	+								
1	<pre></pre>														
2	<body></body>	$\leftarrow \rightarrow$	C	(i) File	file:///Use	ers/lydiac	25	Q	per +		÷ 🔎	G			
3			-		, ,,,								Ŭ		
4	You are cordially invited to	Voll are	ordiall	v invited	to Dobart o	and Alexand	ra's Di	nnor Dor	ty Win	a and ni	hhlag	will b	a cortio	When	
5	Robert and Alexandra's Dinner Party														
6	Wine and nibbles will be served					re: the pad.	II you	need dir	ections	s, ping u	s. Kin	aly let	t us kno	ow if you	
7		will be at	tending	g by Febr	uary 1st.										
8	When: February 20th, 2019 at 9:30pm														
9	Where: the pad. If you need directions, ping us.														
10															
11	Kindly let us know if you will be attending by February 1st.														
12															
13															
14															
15															

Their default rendered is to do line-wrapping, with some elements breaking the line.

89

Iterative Style of Programming helps you build a mental model of your code.

What's the **smallest** unit of progress I can make?



Grids are a layout help you convey importance.

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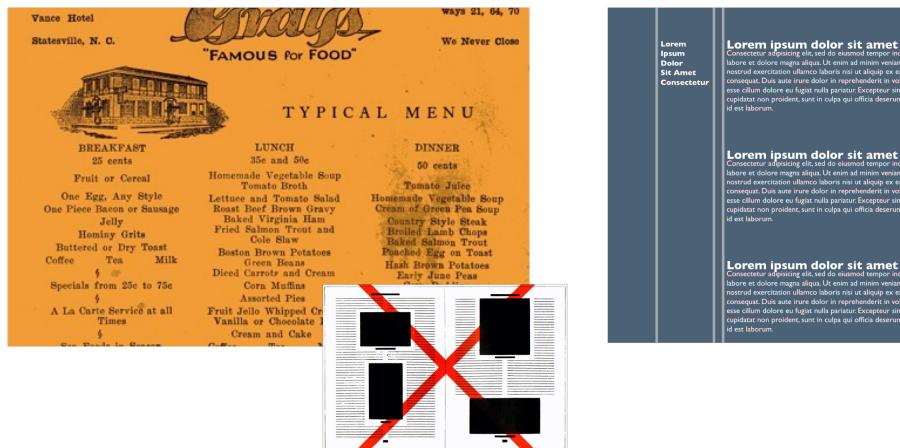
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Not all the ideas of the Bauhaus school are new.



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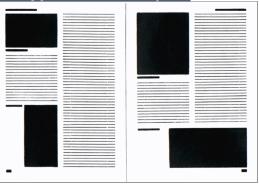
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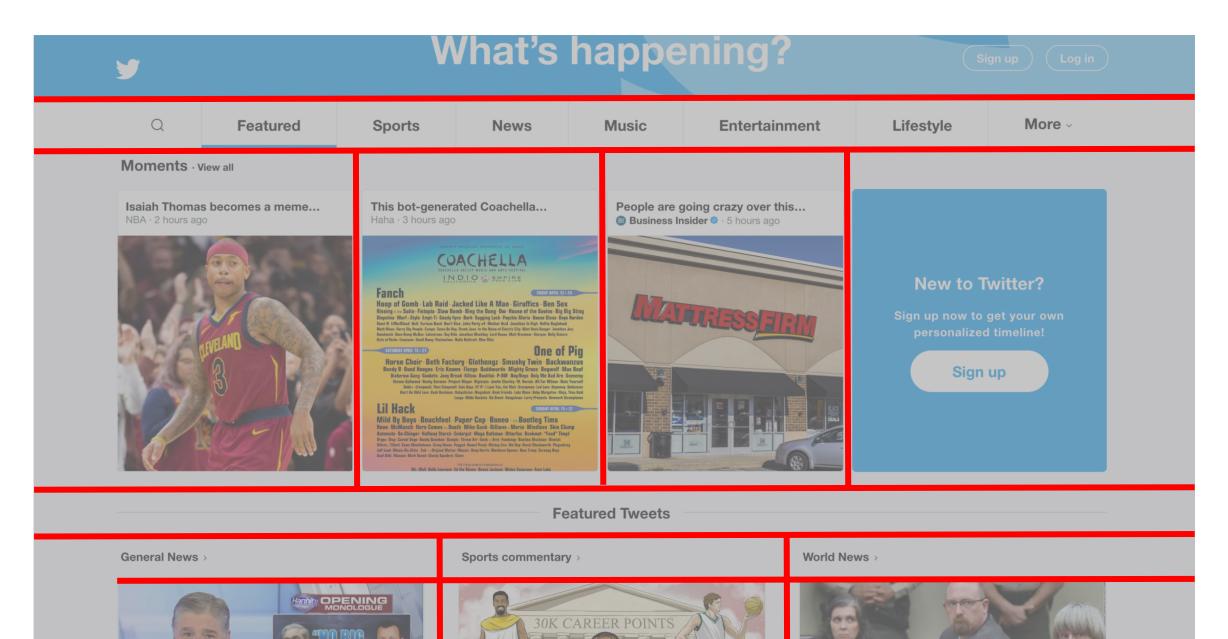
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But there is freedom from the symmetric layout.

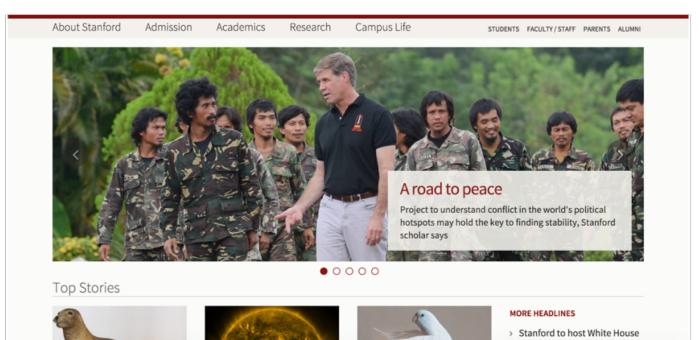
Twitter Bootstrap is a widely used grid system.



Bootstrap allocates width into twelve columns

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Responsive design helps you specify the layout for different sized screens







A ROAD TO PEACE Project to understand conflict in the world's political hotspots may hold the key to finding stability, Stanford scholar says

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Top Stories



Marine extinctions

Industrial revolution of the oceans will imperil wildlife, says Stanford scientist.



Solar flares Artificial intelligence helps Stanford

Announcements

- Homework 2 due Friday @4pm on Courseworks
- Record Participation: Piazza -> Google Form