

# Grids and Layout

Prof. Lydia Chilton  
COMS 4170  
29 January 2025

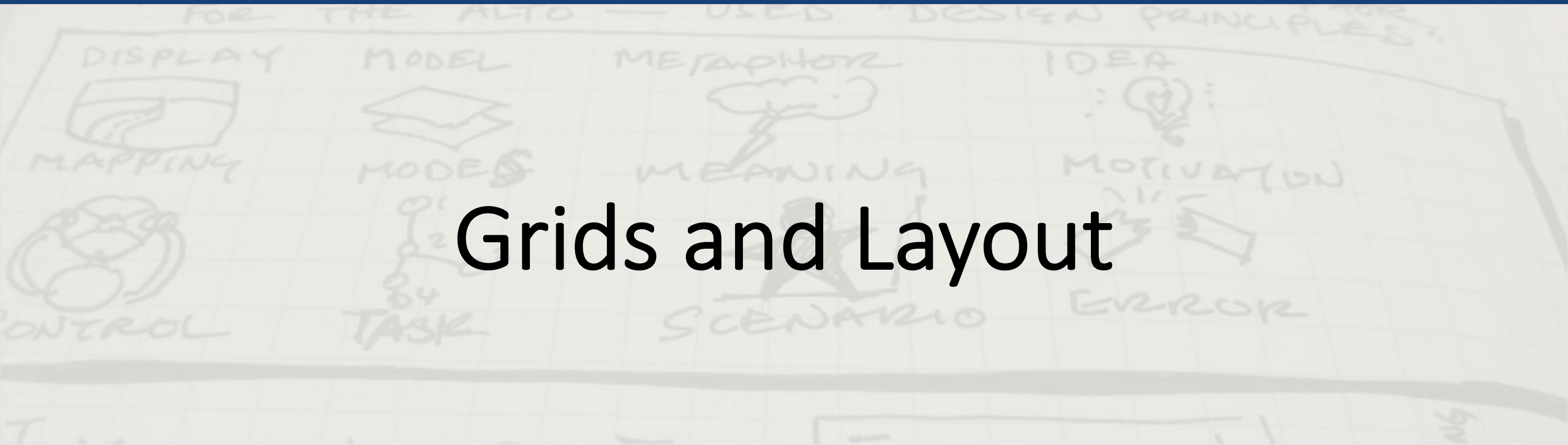
# Picking your TA Sessions Today @3pm

For the final Project, you will work in teams of 2-4.

Your team mates must be in the same TA group.

So if you have friends you might want to work with, make sure you all sign up for the same TA group and time.

	A	B	C	Lastna
1	<b>TA Name</b>	<b>Time Slot</b>	<b>Firstname</b>	
2	Griffin Newbold	Wednesdays - 1 to 1:45pm	Lydia	
3	Griffin Newbold	Wednesdays - 1 to 1:45pm	Lydia's Friend 1	
4	Griffin Newbold	Wednesdays - 1 to 1:45pm	Lydia's Friend 2	
5	Griffin Newbold	Wednesdays - 1 to 1:45pm		
6	Griffin Newbold	Wednesdays - 1 to 1:45pm		
7	Griffin Newbold	Wednesdays - 1 to 1:45pm		
8	Griffin Newbold	Wednesdays - 1 to 1:45pm		
9	Griffin Newbold	Wednesdays - 1 to 1:45pm		
10	Griffin Newbold	Wednesdays - 1 to 1:45pm		
11	Griffin Newbold	Wednesdays - 1:45 to 2:30pm	Lydia's Friend 3	
12	Griffin Newbold	Wednesdays - 1:45 to 2:30pm		
13	Griffin Newbold	Wednesdays - 1:45 to 2:30pm		
14	Griffin Newbold	Wednesdays - 1:45 to 2:30pm		
15	Griffin Newbold	Wednesdays - 1:45 to 2:30pm		
16	Griffin Newbold	Wednesdays - 1:45 to 2:30pm		
17	Griffin Newbold	Wednesdays - 1:45 to 2:30pm		
18	Griffin Newbold	Wednesdays - 1:45 to 2:30pm		
19	Griffin Newbold	Wednesdays - 1:45 to 2:30pm		
20	Jessica Liang	Wednesdays - 1 to 1:45pm		
21	Jessica Liang	Wednesdays - 1 to 1:45pm		
22	Jessica Liang	Wednesdays - 1 to 1:45pm		
23	Jessica Liang	Wednesdays - 1 to 1:45pm		



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# The main feature of many websites is to display information in a way that helps users accomplish a goal.

```
i:Exit --PrevPg <Space>NextPg v:View Attach. d:Del r:Reply j:Next ?:Help
624 Aug 03 T Martinez ( 37) Loans with tiny points are here now
625 0 Jul 01 R. Jackson ( 123) Loans with tiny rates are here now
626 Aug 05 Benjamin E. Mag ( 50) Long time no hear
627 May 17 Krista Aaron ( 44) long time no see...
628 0 Jun 03 Josiah House ( 35) Looking for a hot date tonight, tomorrow, or next week?
629 Jul 03 Brigitte I. Hay ( 63) Looking for a N.ew H.ome?
630 May 17 Joe Burns ( 58) Looking for you
631 Jun 01 Save in a poor ( 145) Low Rate Consolidation Mortgage Loan
632 + Jul 02 Igiel@virtualig ( 2) LowCost SoftWare OnCD
+ Mult: Mail/junk/spam (Msgs:950 Old:142 10M) -- (subject/date) (66%)
Date: Mon, 17 May 2004 03:40:09 +0100
From: Krista Aaron <Christinefeminine@highstream.com>
Subject: long time no see...

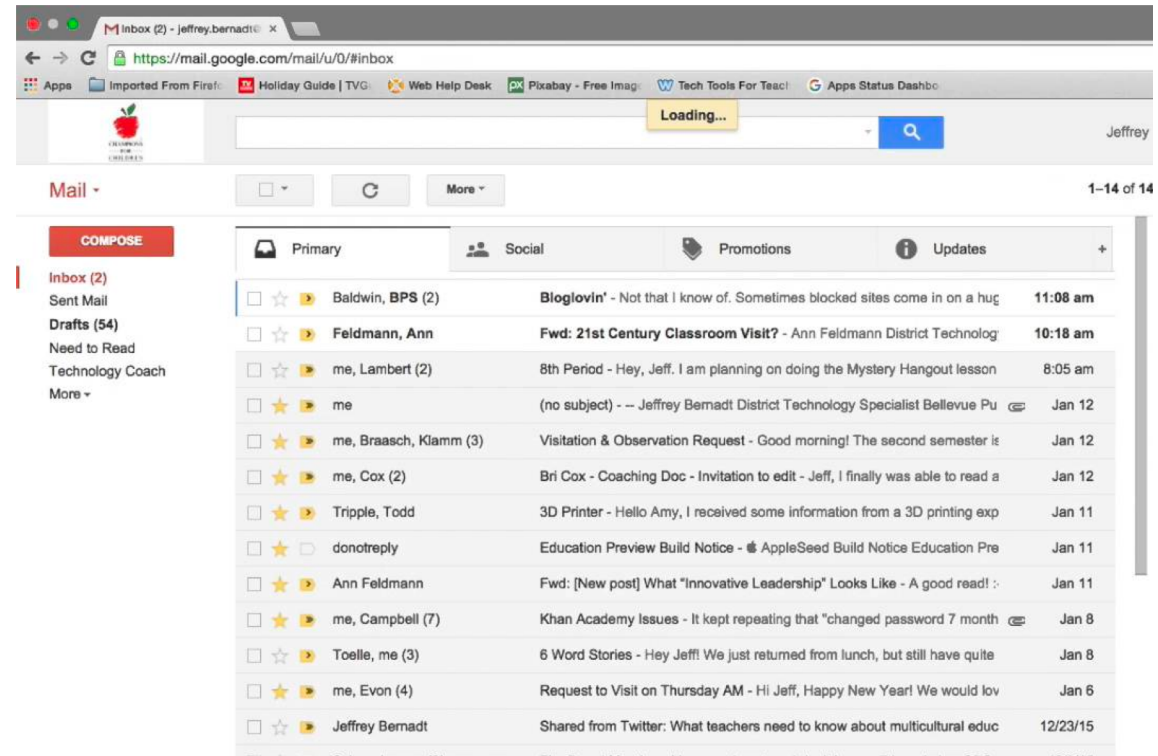
[--- Autoview using /usr/bin/elinks -force-html -dump '/tmp/mutt.html' ---]
My name is Jen and I'm new to this dating thing. I've checked out your profile
you put up and it's interesting. => I just want to get to know you a little
better if you don't mind, come check my profile out at:

www.livejen.com/chat.html

I also got a webcam so we can make it interesting, anyways hope you get back to
me.
bye :)

gxsnkxxgnduvy.jwyceudc.jobxs
zcozccrociesbehgbpow
rnxlfnjqbplipdkgwuyqofracsz
xmqaubxsbjrppoibvlpfhqowldtp
bixhghvrxtgqfcoqofzycb
hugzffaffulsklpzhrfxbtt
btpztlfotqmmoaiwlosqv
- 627/950: Krista Aaron long time no see... (66%)
Key is not bound. Press '?' for help.
```

Pine text-based email client

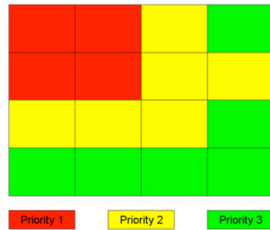


GMail

# Seven tools for visually indicating importance

You are cordially invited to  
Robert and Alexandra's delectable after dinner  
party.  
Wine and nibbles will be served.  
When: February 20<sup>th</sup>, 2018 at 9:30pm.  
Where: the pad. If you need directions, ping us.  
Kindly let us know if you will be attending by  
February 1<sup>st</sup>.

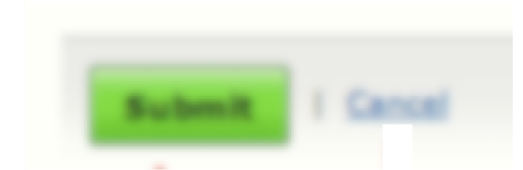
Conceptual grouping



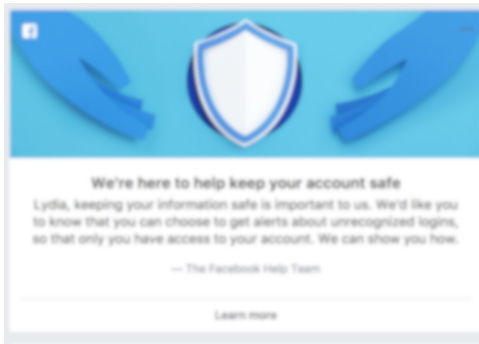
Location



Whitespace



Size



Images

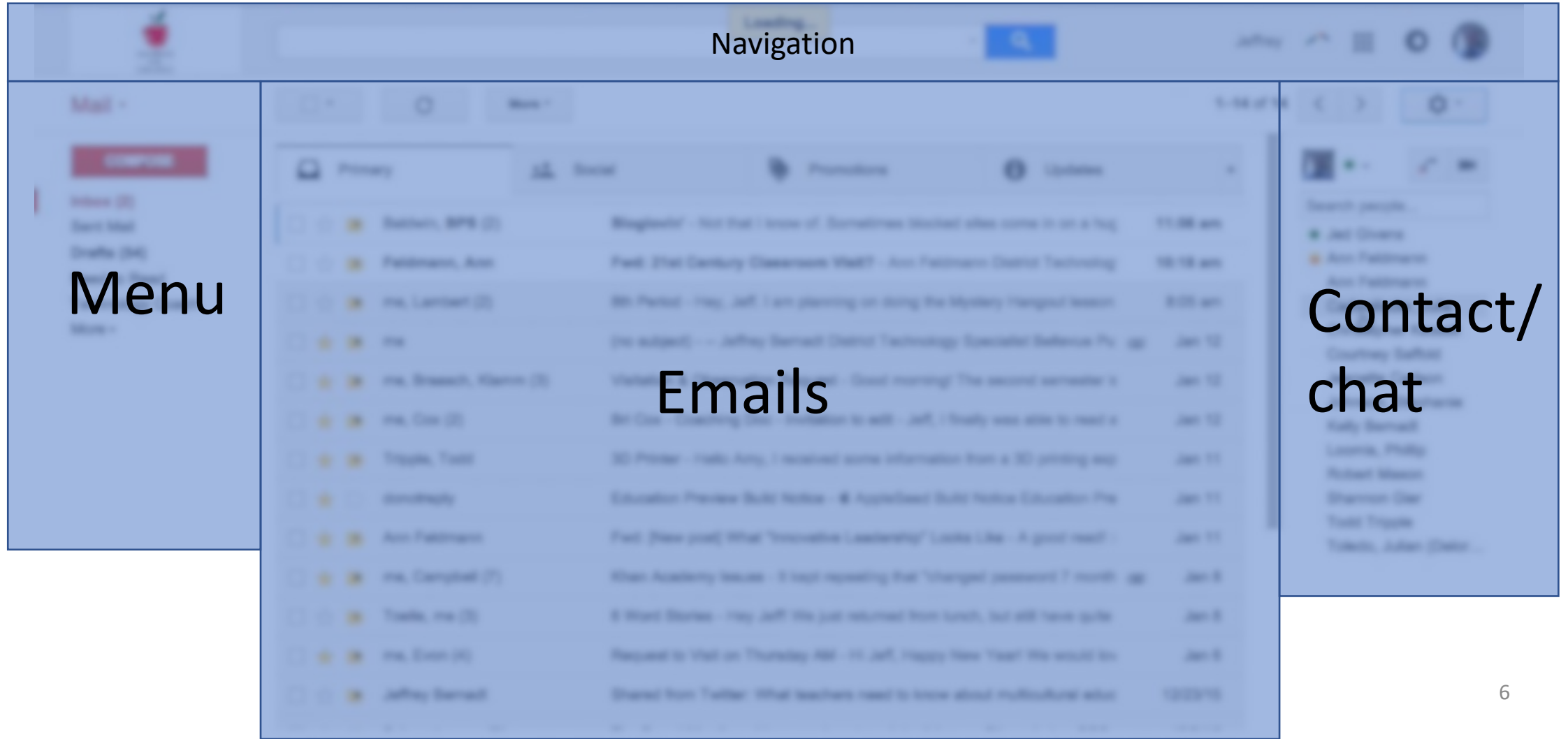
You are cordially invited to  
**Robert and Alexandra's  
delectable after dinner party.**  
Wine and nibbles will be served.

Contrast

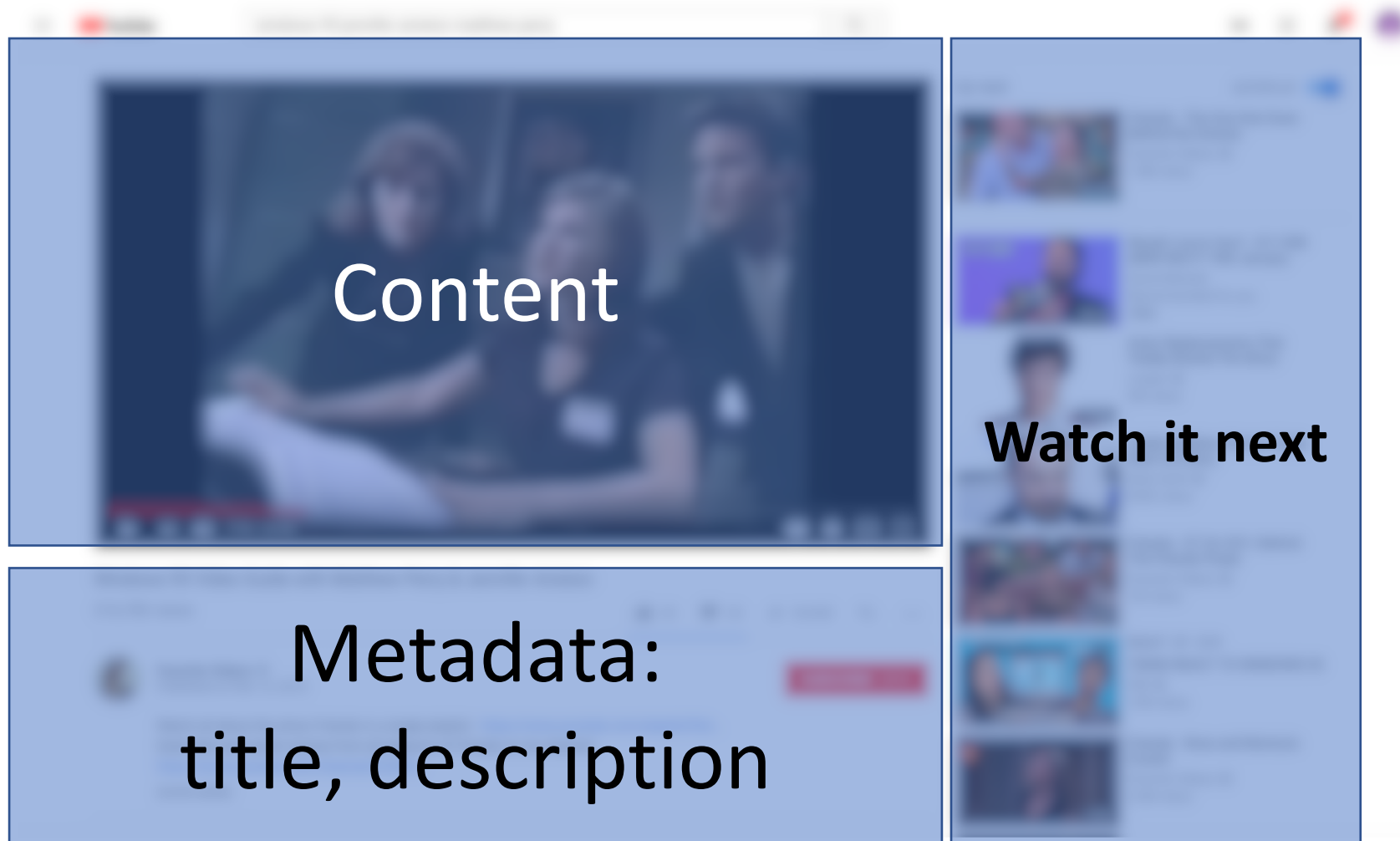


Color

# Conceptual groups in Gmail



# Conceptual groups in YouTube



How should we layout  
information on a page?



# Old school information layout

**LEIPZIGER  
MESSE**  
*Allgemeine Mustermesse mit  
Technischer Messe und  
Baumesse*  
**Die allgemeine internationale  
Messe Deutschlands**  
*Die erste und größte Messe der Welt  
Für Aussteller und Einkäufer  
gleich wichtig*  
BEGINN DER HERBSTMESSE AM 27. AUGUST 1922.  
*Auskunft erteilt und Anmeldungen nimmt entgegen*  
MESSAMT FÜR DIE MUSTERMESSEN  
IN LEIPZIG

Vance Hotel  
Statesville, N. C.

**Grays**  
"FAMOUS for FOOD"

ways 21, 64, 70  
We Never Close

**TYPICAL MENU**

BREAKFAST 25 cents	LUNCH 35c and 50c	DINNER 50 cents
Fruit or Cereal	Homemade Vegetable Soup Tomato Broth	Tomato Juice
One Egg, Any Style	Lettuce and Tomato Salad	Homemade Vegetable Soup
One Piece Bacon or Sausage	Roast Beef Brown Gravy	Cream of Green Pea Soup
Jelly	Baked Virginia Ham	Country Style Steak
Hominy Grits	Fried Salmon Trout and Cole Slaw	Broiled Lamb Chops
Buttered or Dry Toast	Boston Brown Potatoes	Baked Salmon Trout
Coffee Tea Milk	Green Beans	Poached Egg on Toast
Specials from 25c to 75c	Diced Carrots and Cream	Hash Brown Potatoes
§	Corn Muffins	Early June Peas
§	Assorted Pies	Corn Pudding
A La Carte Service at all Times	Fruit Jello Whipped Cream	Head Lettuce with Dressing
§	Vanilla or Chocolate Ice Cream and Cake	Boston Cream Pie
§	Coffee Tea Milk	Vanilla or Chocolate Ice Cream and Cake

**Eggs and Omelettes**  
Scrambled Eggs with English Kipperd 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 TAMALES (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**  
Ice Cream 40  
Parfaits 50  
Baked Fresh Rhubarb 50  
Sherbet 40

**Pastry Specials**  
Blackbottom Pie 40  
Parisian Pastries 40  
Rio Rita Cake 40  
Rice or Chocolate Pudding 35

BEVERAGES AS LISTED ON A LA CARTE MENU

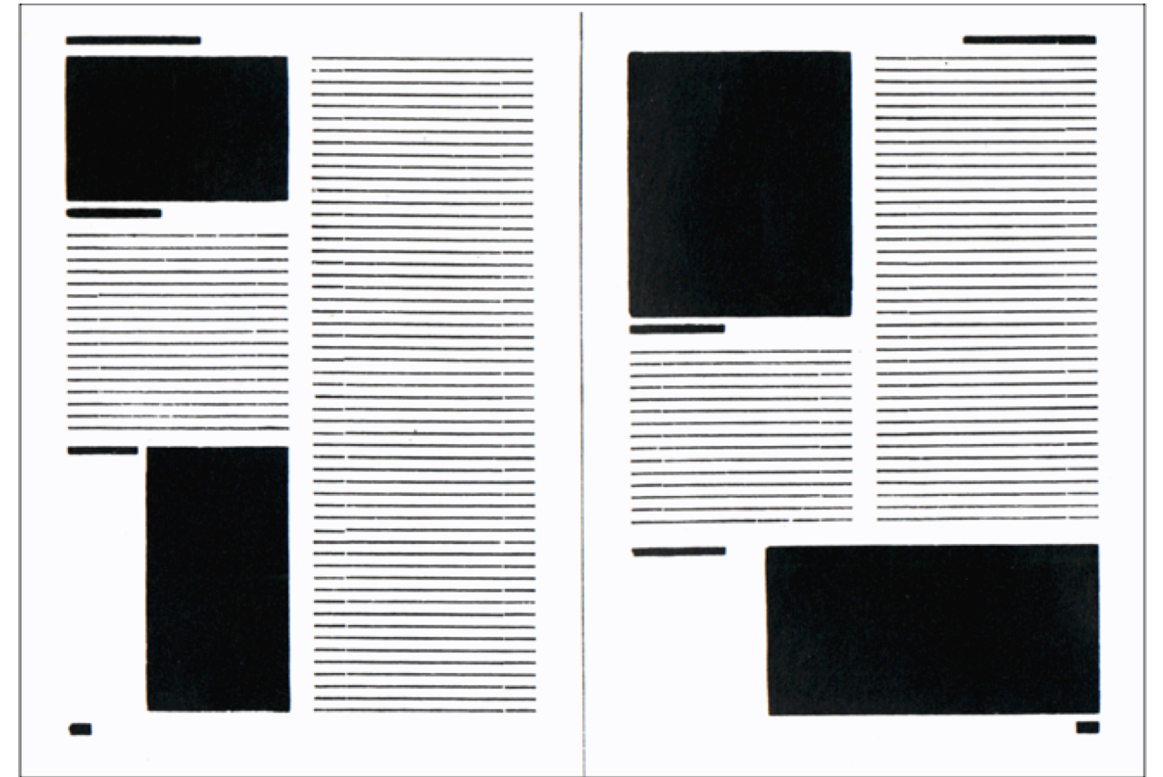
Sales Tax will be added on all taxable items in accordance with the rulings  
issued under the Sales and Use Tax Law  
Sorry we cannot be responsible for lost articles  
Friday, January 17, 1947

Symmetrical

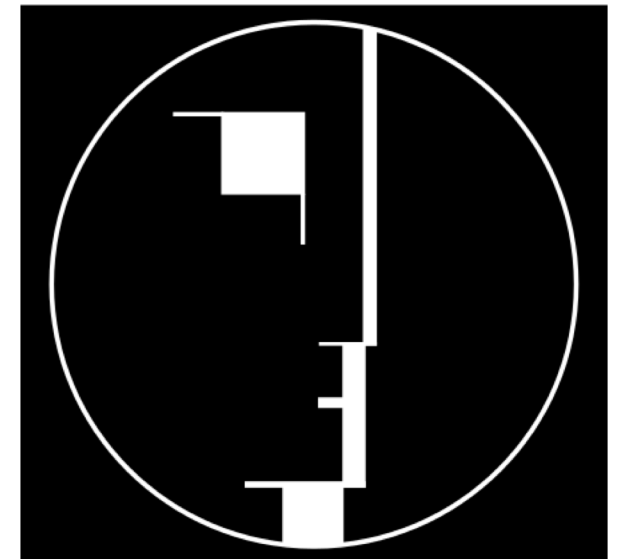
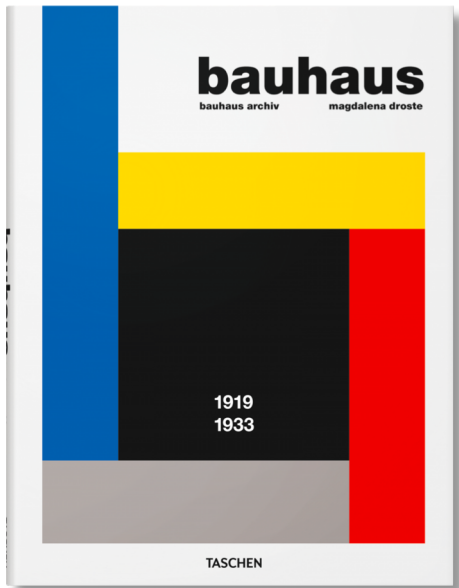
Before:  
Symmetric Layout



Now:  
Asymmetric Grids Layout



# The Bauhaus School of Design (1919-1933)



“[Bauhaus] attempted to unify the principles of mass production with individual artistic vision. It strove to combine aesthetics with everyday function.”

# Grid Layouts:

## Typographer Jan Tschichold made grid layouts inspired by Bauhaus

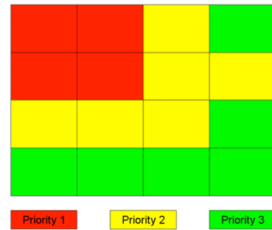
	<b>Lorem Ipsum!</b> <i>dolor sit amet</i>	<b>Lorem Ipsum!</b> <i>dolor sit amet</i>	<b>Lorem Ipsum!</b> <i>dolor sit amet</i>	
	Consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip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

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

# Grids can convey importance through: Groups, location, size and whitespace

You are cordially invited to  
Robert and Alexandra's delectable after dinner  
party.  
Wine and nibbles will be served.  
When: February 20<sup>th</sup>, 2018 at 9:30pm.  
Where: the pad. If you need directions, ping us.  
Kindly let us know if you will be attending by  
February 1<sup>st</sup>.

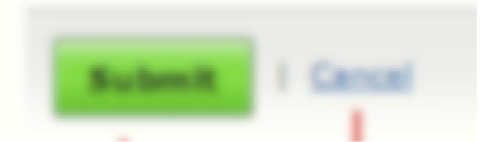
Conceptual grouping



Location



Whitespace



Size

# Grids can convey importance though: Groups, location, size and whitespace

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

**How do we create groups in a grid?**

By creating a column or row.

**How do we use location  
to make a group appear more important?**

Put the information in the upper left grid cell.

**How do we use size  
to make a group appear more important?**

Make a column wider.

**How do we use whitespace  
to make a group appear more important?**

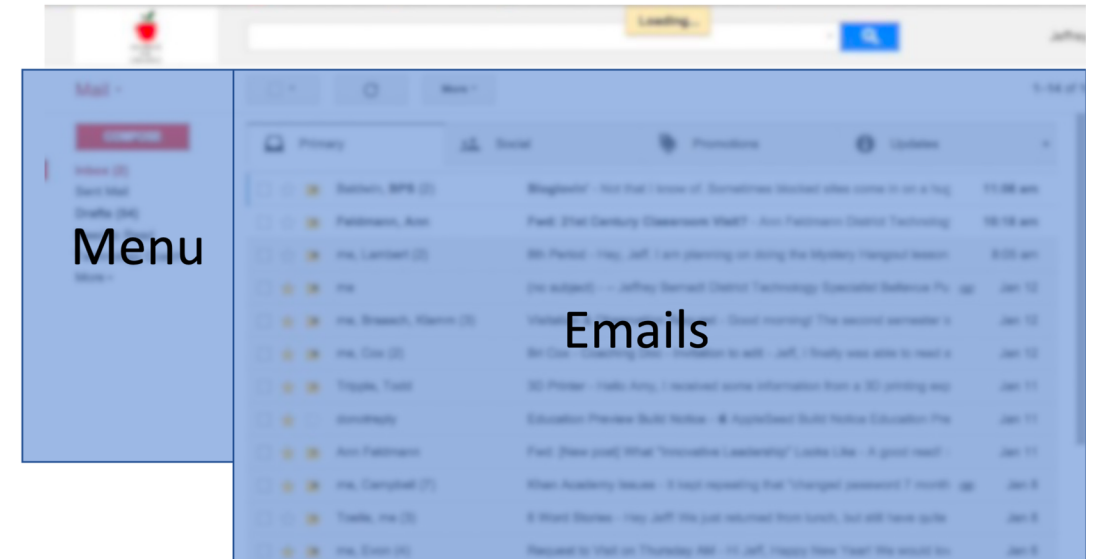
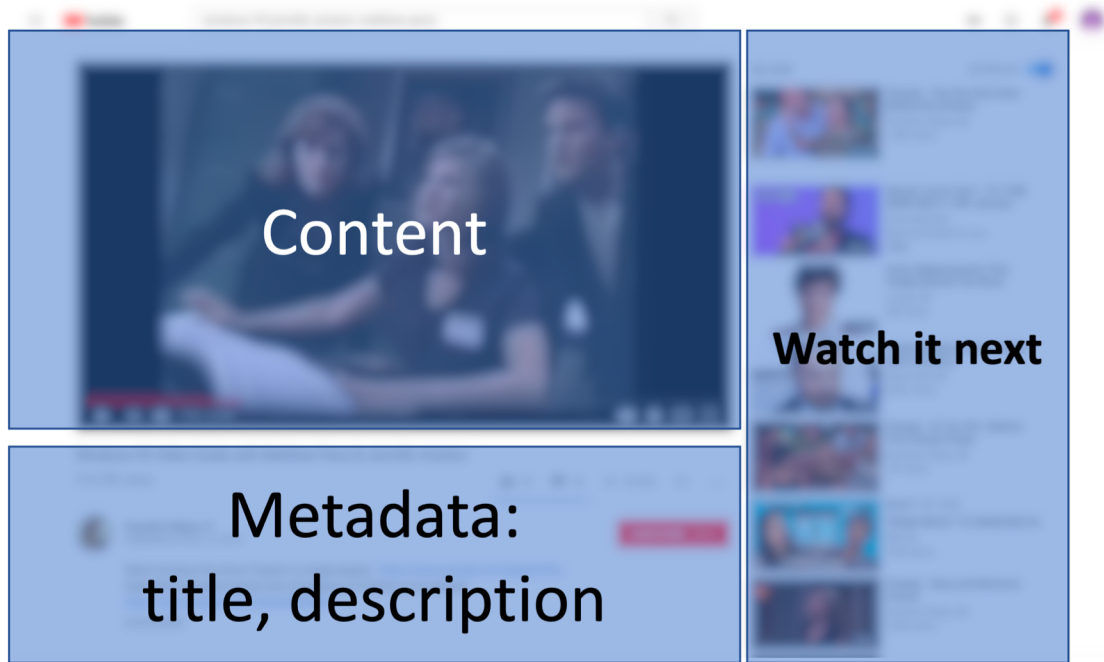
Increase the size of the gutters.

# Not all the ideas of the Bauhaus school are new.



But there is freedom from the symmetric layout.

# Grid layout heavily influenced web layout



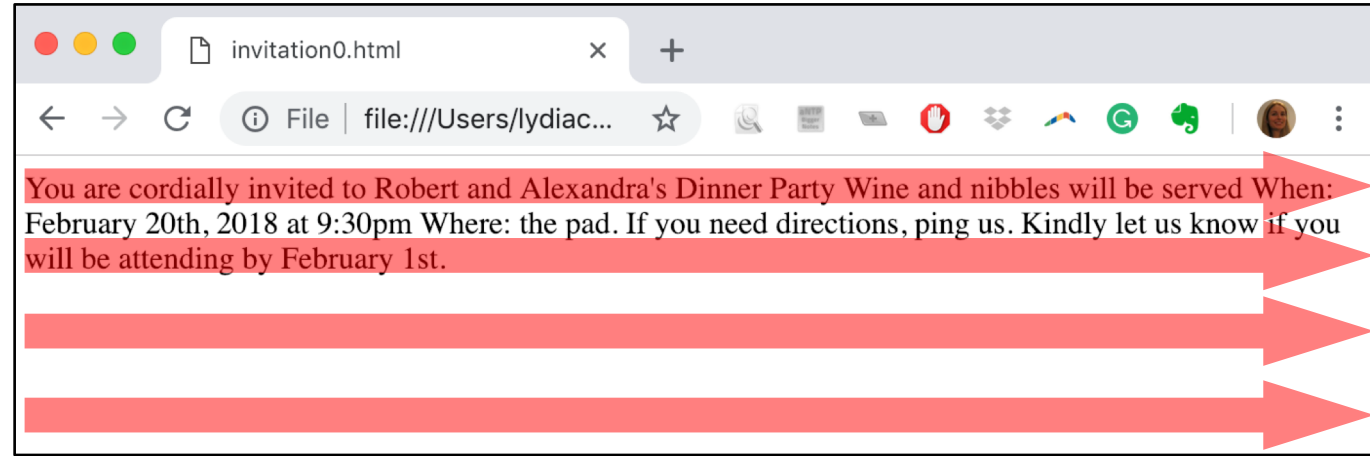


# Basic Layout in HTML (no grids yet)

How to construct the layout of information in HTML and CSS

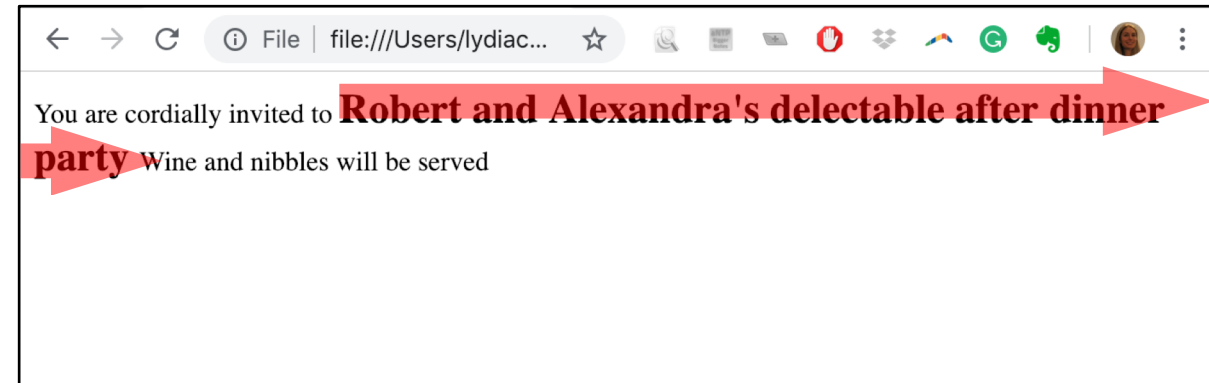
# Web Browsers are in charge of rendering HTML

```
invitation0.html
1 <html>
2   <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
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   </body>
15 </html>
```



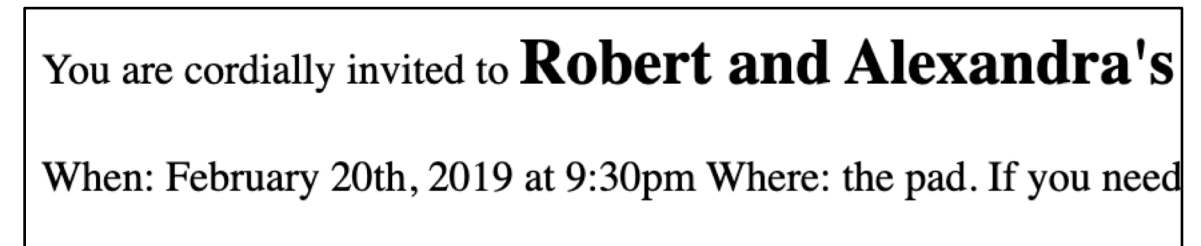
When you add elements, they either obey the line-wrap layout or break it.

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



`<span>` elements **obey** line-wrap layout

```
<div>
  You are cordially invited to <span class="dark big">
</div>
<div>
  When: February 20th, 2019 at 9:30pm Where: the pad. If you need
</div>
```



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

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

Anchor  
(hyperlink)

```
<a href="slides.pdf">Slides are here</a>
```

[Slides are here](#)

Image

```

```



# The best way to know what a layout will look like is to run it.

Form

```
<form action="/action_page.php">  
  First name:<br>  
  <input type="text" name="firstname" value="Mickey">  
  <br>  
  Last name:<br>  
  <input type="text" name="lastname" value="Mouse">  
  <br><br>  
  <input type="submit" value="Submit">  
</form>
```

First name:

Last name:

Today's goal:

# Remake this information layout in HTML and CSS

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, making 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 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!

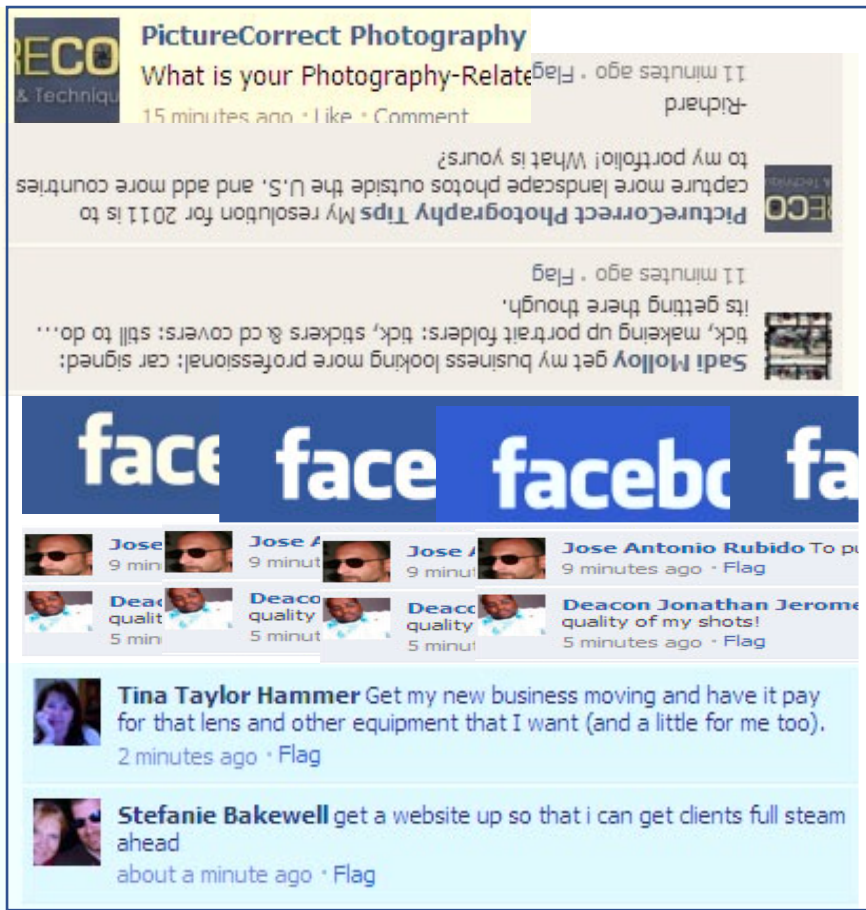
5 minutes ago · Flag



**Latu Peti Vimahi Manulua-hafoka** learn learn learn!!!



# How would you help this person?



# Iterative Style of Programming

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

## Iteration

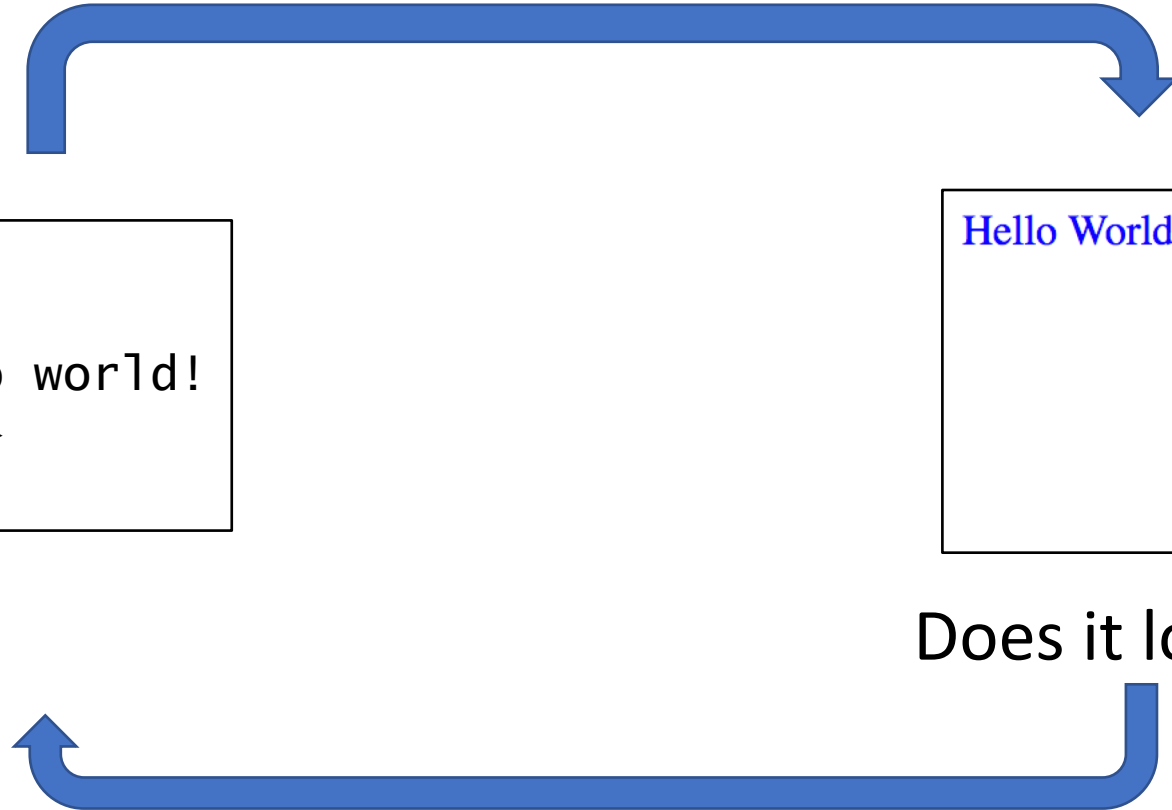
```
<html>
  <body>
    Hello world!
  </body>
</html>
```

```
Hello World!
```

## Goal



Does it look ok?





# 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?

A screenshot of a Facebook post from the page 'PictureCorrect Photography Tips'. The post title is 'What is your Photography-Related New Year's Resolution??' and it was posted 15 minutes ago. Below the title, it says 'Adel Gomaa and Richard Schneider like this.' There are five comments from users: Sadi Molloy, PictureCorrect Photography Tips, James Donnelly, Jose Antonio Rubido, and Deacon Jonathan Jerome Johnson. The last comment is partially visible from user Latu Peti Vimahi Manulua-hafoka. The entire screenshot is enclosed in a red border.

**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, making 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 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 learn!!!  
4 minutes ago · Flag

Make a container

# Step 1. Make a container div

```
1 <div id="container">
2
3 </div>
```

```
1 #container{
2   width: 50px;
3   height: 50px;
4   background-color: grey;
5 }
6
```



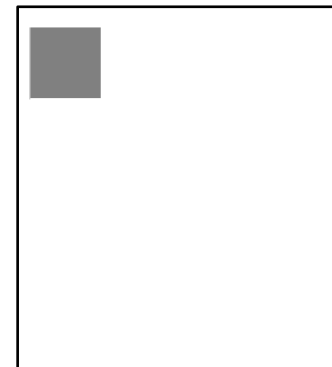
# Iterative Style of Programming

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

## Iteration

```
<html>
  <body>
    Hello world!
  </body>
</html>
```

## Goal



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, making 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 ago · Flag

Does it look ok? What's next?

# Give Container div realistic width.

```
1 <div id="container">  
2  
3 </div>
```

```
1 #container{  
2   width: 350px;  
3   height: 50px;  
4   margin: 50px;  
5   background-color: grey;  
6 }
```



# What's next?



The image shows a screenshot of a Facebook post from the page "PictureCorrect Photography Tips". The post title is "What is your Photography-Related New Year's Resolution??" and it was posted 15 minutes ago. It has received two likes from Adel Gomaa and Richard Schneider. The post contains several comments from users sharing their resolutions for 2011:

- Sadi Molloy** (11 minutes ago): "get my business looking more professional: car signed: tick, making up portrait folders: tick, stickers & cd covers: still to do... its getting there though."
- Richard** (11 minutes ago): "My resolution for 2011 is to capture more landscape photos outside the U.S. and add more countries to my portfolio! What is yours?"
- James Donnelly** (10 minutes ago): "Larger concerts to cover and improve my portrait editing style/skill"
- Jose Antonio Rubido** (9 minutes ago): "To push my photpography foward full throttle"
- Deacon Jonathan Jerome Johnson** (5 minutes ago): "To learn more and enhance the quality of my shots!"
- Latu Peti Vimahi Manulua-hafoka** (4 minutes ago): "learn learn learn!!!"

The post also shows a page number "30" at the bottom right.

# Create a blue Facebook header

```
1 <div id="container">
2   <div id="fb_brand">
3     FACEBOOK
4   </div>
5 </div>
```

```
1 #container{
2   width: 350px;
3   margin: 50px;
4 }
5
6 #fb_brand{
7   background-color: blue;
8   color: white;
9 }
```



FACEBOOK

# What next?

## FACEBOOK

## 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, making 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 ago · Flag



**James Donnelly** Larger concerts to cover and improve my portrait editing style/skill

10 minutes ago · Flag



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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 learn!!!

4 minutes ago · Flag

32



# Get header height right. (Add padding)

```
1 <div id="container">
2   <div id="fb_brand">
3     FACEBOOK
4   </div>
5 </div>
```

```
1 #container{
2   width: 350px;
3   margin: 50px;
4 }
5
6 #fb_brand{
7   background-color: blue;
8   color: white;
9   padding-left: 40px;
10  padding-top: 20px;
11  padding-bottom: 20px;
12 }
```



FACEBOOK

# What next?

FACEBOOK

## 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, making 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 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 learn!!!

4 minutes ago · Flag

34

# 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>
```



FACEBOOK

FIRST POST

# What next?

FACEBOOK

FIRST POST

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, making up portrait folders: tick, stickers & cd covers: still to do... its getting there though.

11 minutes ago · Flag



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-Richard

11 minutes ago · Flag



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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 learn!!!

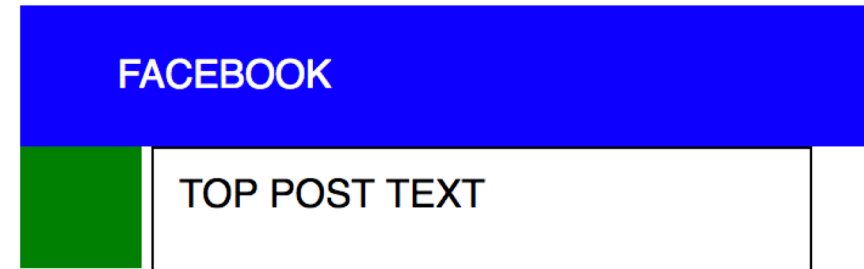
4 minutes ago · Flag

36

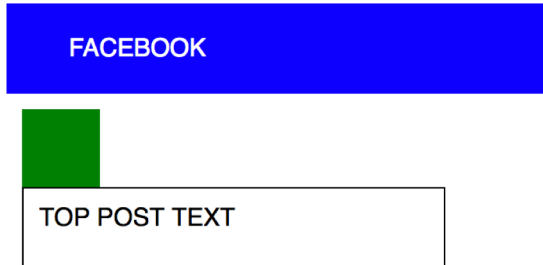
# Add internal structure to the first post

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

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



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`



```
18 #top_post_image{
19   height: 50px;
20   width: 50px;
21   background-color: green;
22   /*display: inline-block;*/
23 }
24
25 #top_post_text{
26   height: 30px;
27   width: 250px;
28   padding: 10px;
29   border: 1px solid black;
30   /*display: inline-block;*/
31   vertical-align: top;
32 }
```



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

# What next?

FACEBOOK

TOP POST TEXT

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, making 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 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 learn!!!

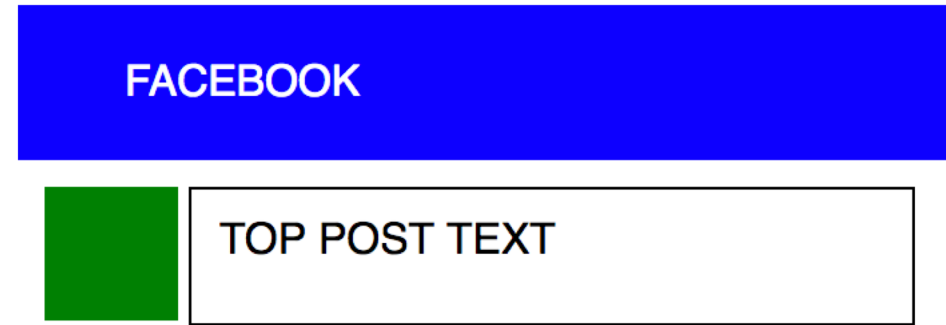
4 minutes ago · Flag

39

# Add padding on the top post

```
6 <div id="top_post">
7   <div id="top_post_image">
8   </div>
9   <div id="top_post_text">
10    TOP POST TEXT
11  </div>
12 </div>
13
```

```
14 #top_post{
15   padding: 10px;
16 }
17
```





# What next?

FACEBOOK

TOP POST TEXT

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.



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11 minutes ago · Flag



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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 learn!!!

4 minutes ago · Flag

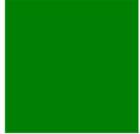
41

# Add replies.

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



FACEBOOK



TOP POST TEXT

REPLY  
REPLY  
REPLY

# What next?

FACEBOOK

TOP POST TEXT

REPLY  
REPLY  
REPLY

## facebook



**PictureCorrect Photography Tips**

What is your Photography-Related New Year's Resolution??

15 minutes ago · Like · Comment

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**Sadi Molloy** get my business looking more professional: car signed: tick, making up portrait folders: tick, stickers & cd covers: still to do... its getting there though.

11 minutes ago · Flag



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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 learn!!!

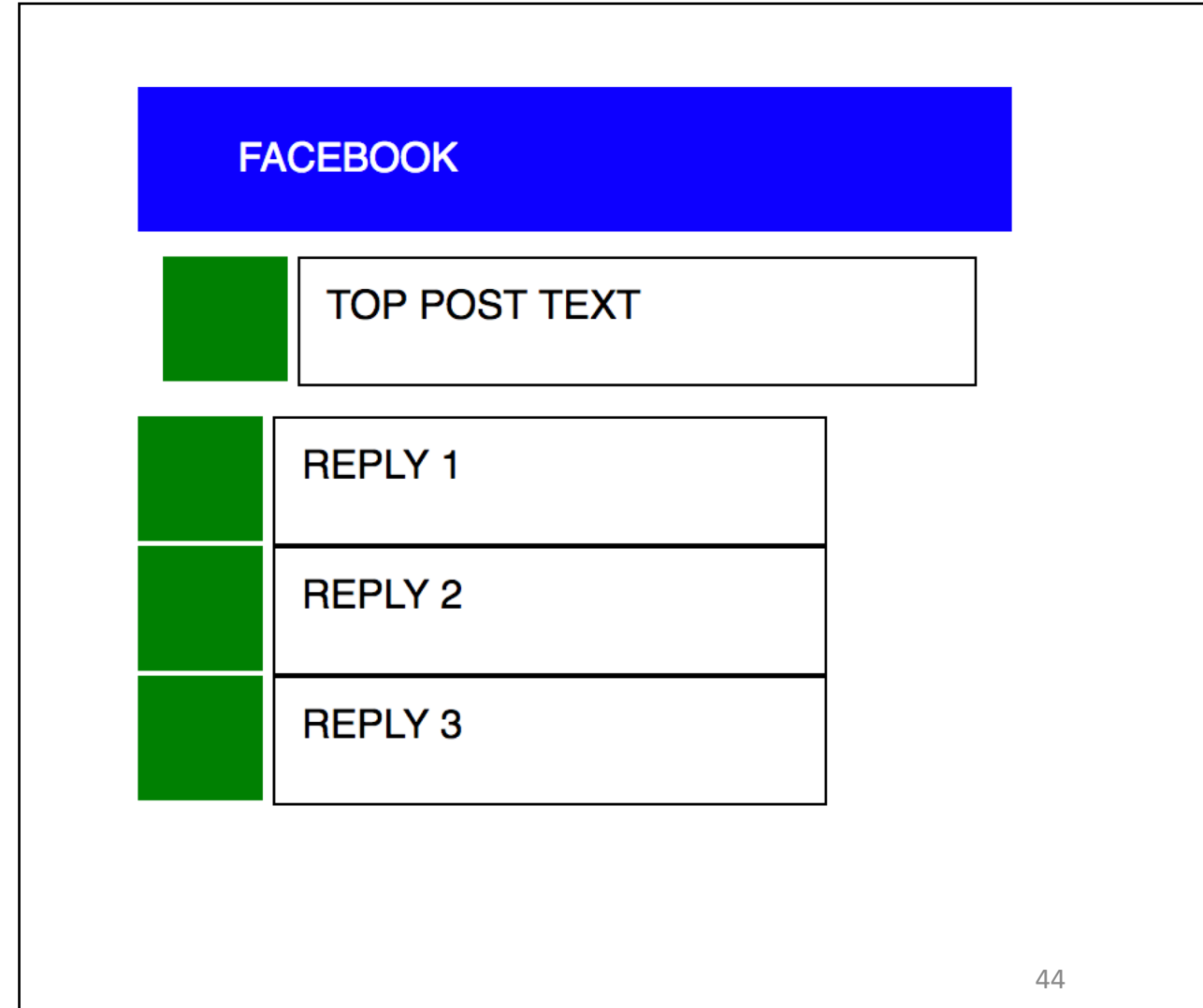
4 minutes ago · Flag

43

# Reply substructure: image and text

```
14 <div class="reply">
15   <div class="reply_image">
16   </div>
17   <div class="reply_text">
18     REPLY 1
19   </div>
20 </div>
```

```
35 .reply_image{
36   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   padding: 10px;
47   border: 1px solid black;
48   display: inline-block;
49   vertical-align: top;
50 }
```



# What next?

FACEBOOK

TOP POST TEXT

REPLY 1

REPLY 2

REPLY 3

facebook



**PictureCorrect Photography Tips**

What is your Photography-Related New Year's Resolution??

15 minutes ago · Like · Comment

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11 minutes ago · Flag



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**James Donnelly** Larger concerts to cover and improve my portrait editing style/skill

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**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 learn!!!

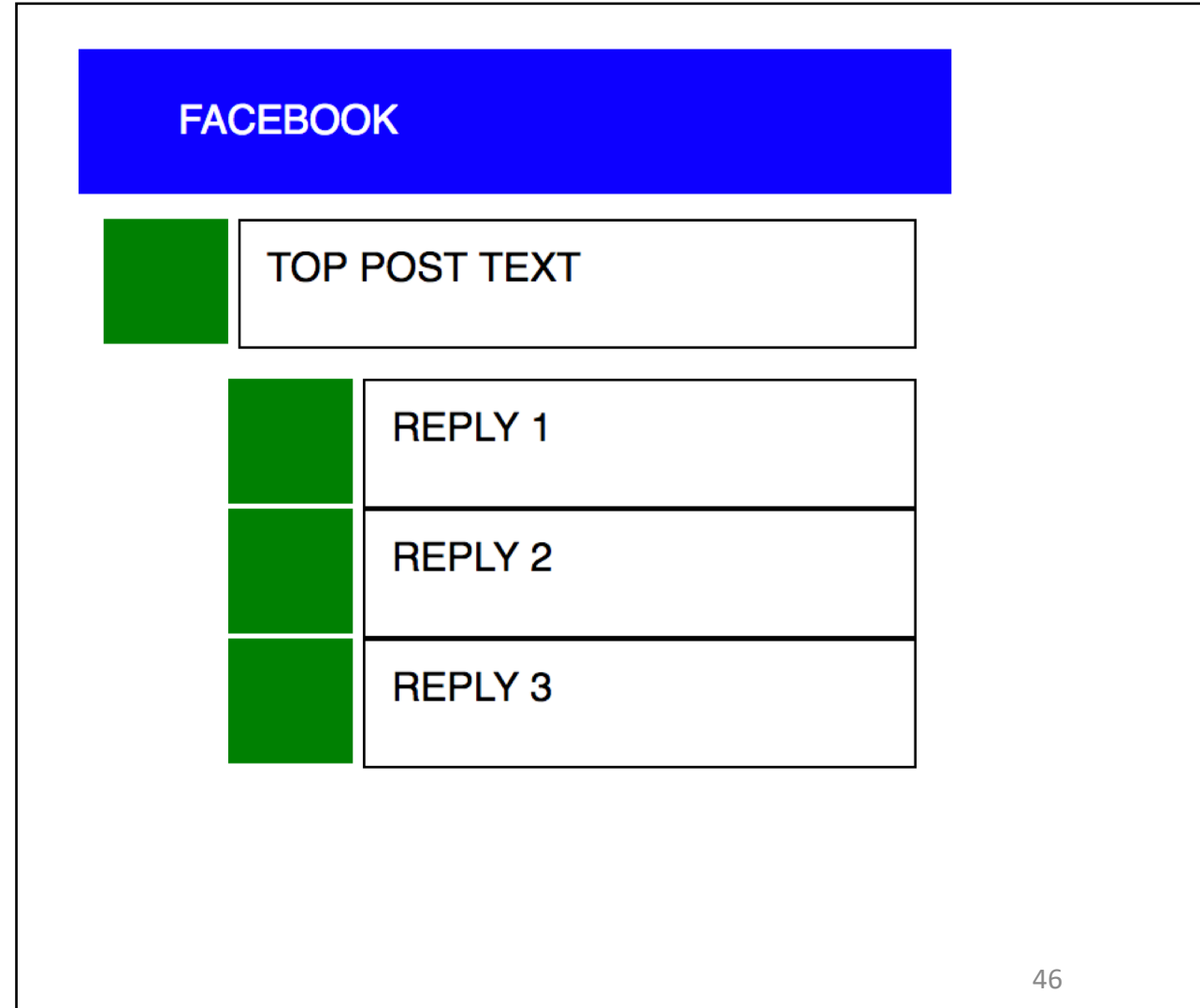
4 minutes ago · Flag

45

# Reply container positioning

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

```
35 #reply_container{
36   padding-left: 60px;
37 }
38
```



# What next?

FACEBOOK

TOP POST TEXT

REPLY 1

REPLY 2

REPLY 3

facebook



**PictureCorrect Photography Tips**

What is your Photography-Related New Year's Resolution??

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11 minutes ago · Flag



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-Richard

11 minutes ago · Flag



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10 minutes ago · Flag



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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 learn!!!

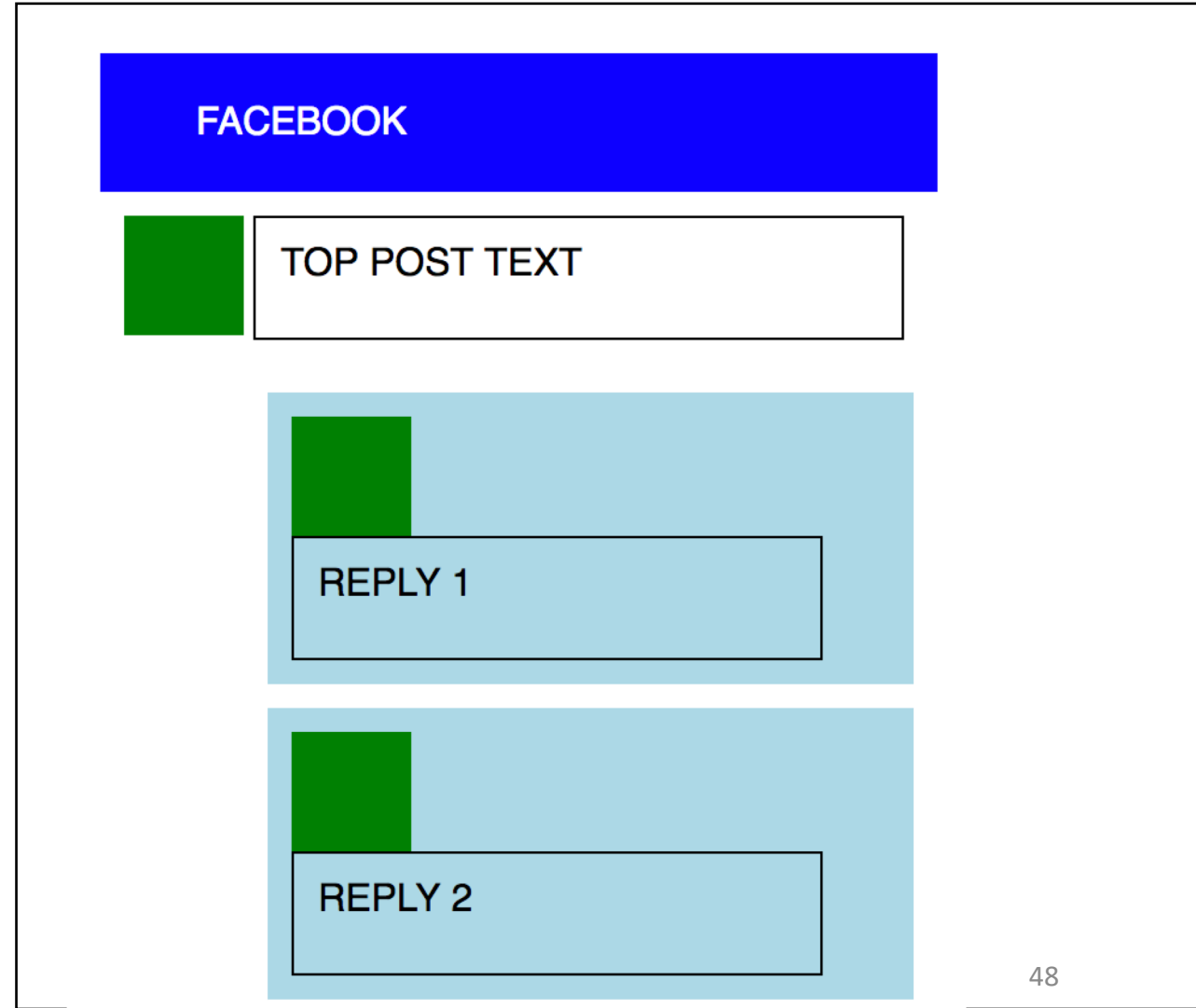
4 minutes ago · Flag

47

# Reply Class background-color

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

```
39 .reply{
40   background-color: lightblue;
41   padding: 10px;
42   margin: 10px;
43 }
```

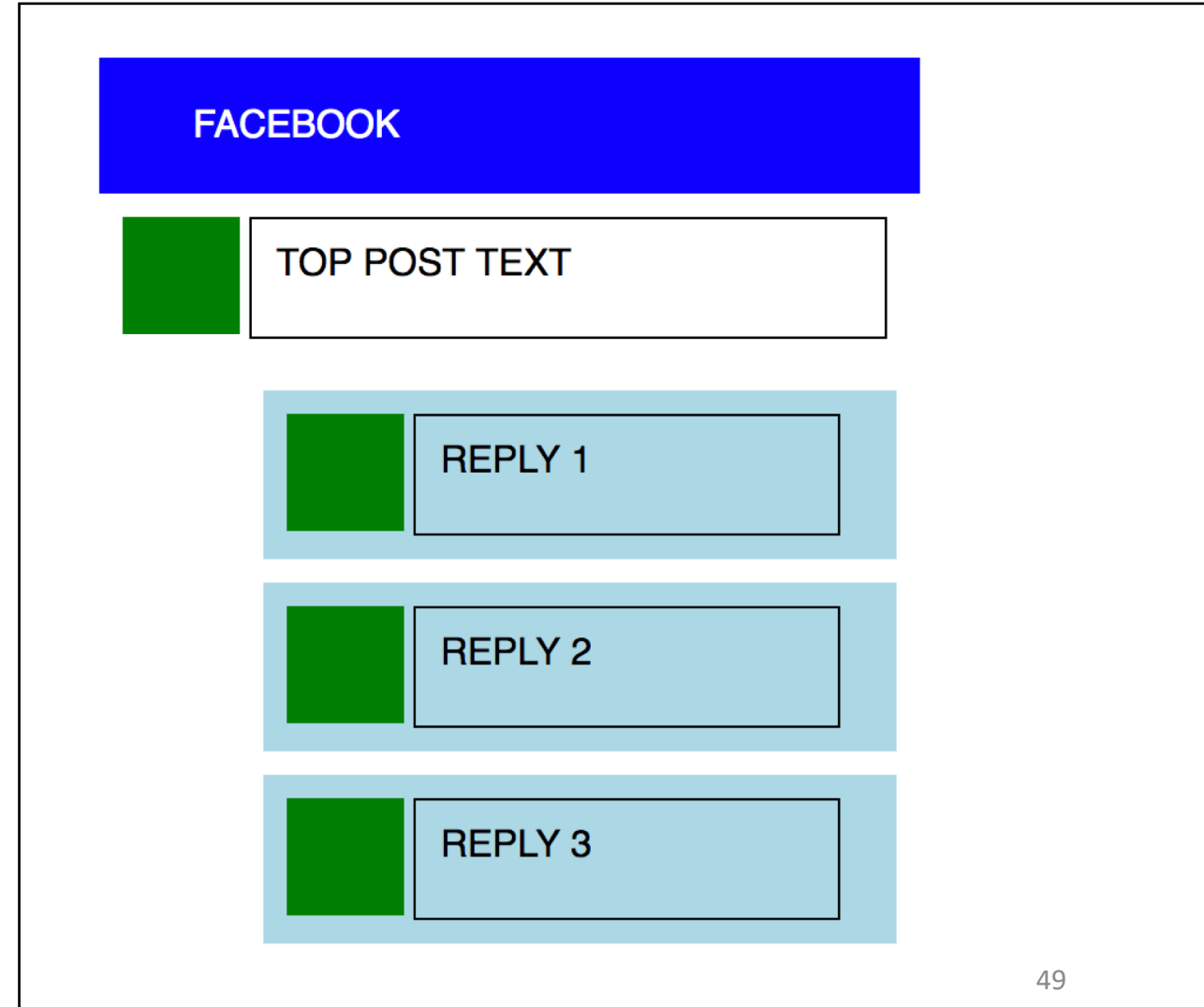




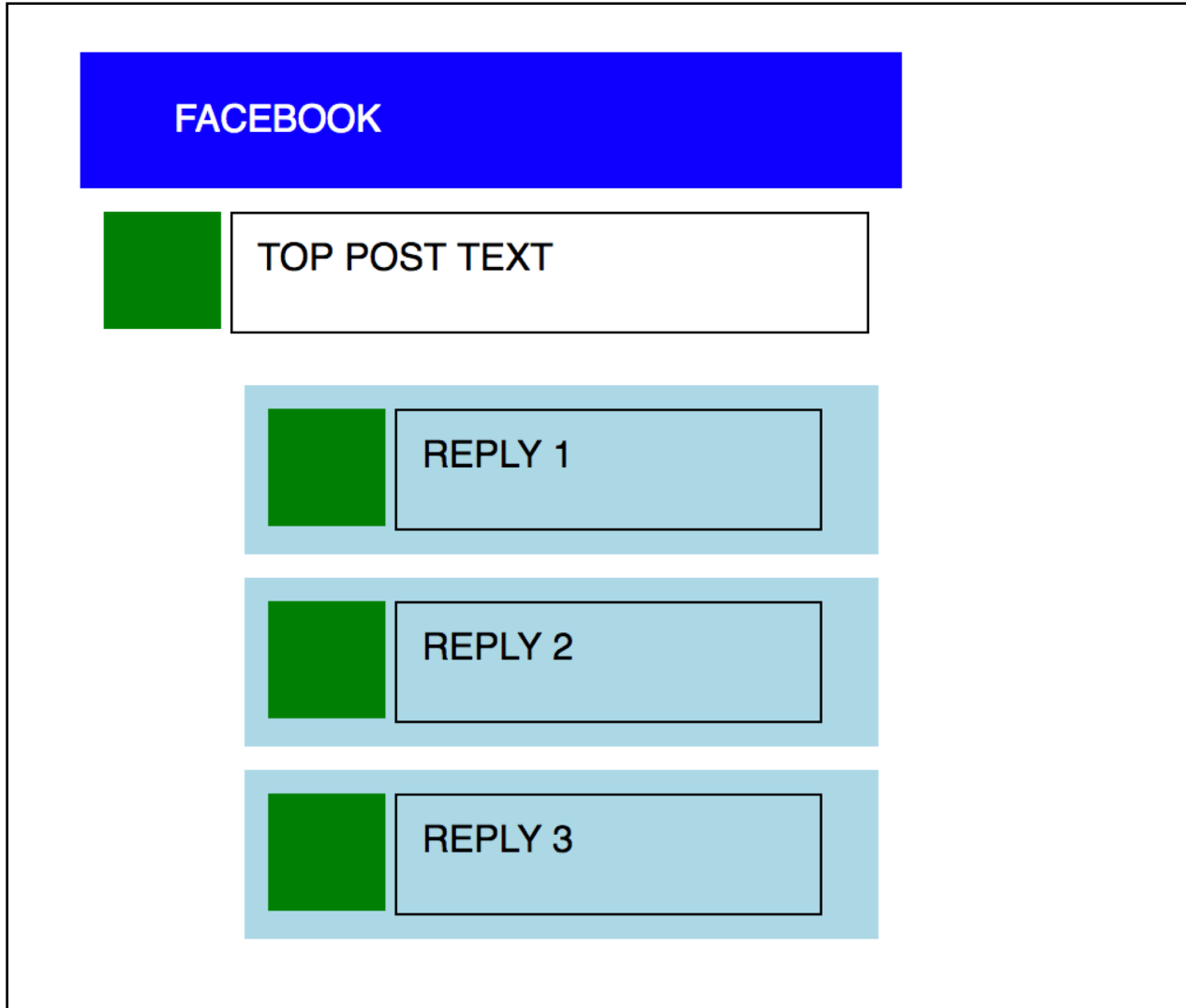
# Reduce Reply Text Width

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

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



# 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, making 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 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 learn!!!

50

4 minutes ago · Flag

# Reply Text is longer

```
14 <div class="reply">
15   <div class="reply_image">
16   </div>
17   <div class="reply_text">
18     REPLY 1 REPLY 1 REPLY 1 REPLY 1 REPLY 1
19     REPLY 1 REPLY 1
20   </div>
21 </div>
```

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

FACEBOOK

TOP POST TEXT

REPLY 1 REPLY 1  
REPLY 1 REPLY 1  
REPLY 1 REPLY 1  
REPLY 1

REPLY 2

REPLY 3

# Reply Text height fixed

```
14 <div class="reply">
15   <div class="reply_image">
16   </div>
17   <div class="reply_text">
18     REPLY 1 REPLY 1 REPLY 1 REPLY 1 REPLY 1
19     REPLY 1 REPLY 1
20   </div>
21 </div>
```

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

FACEBOOK

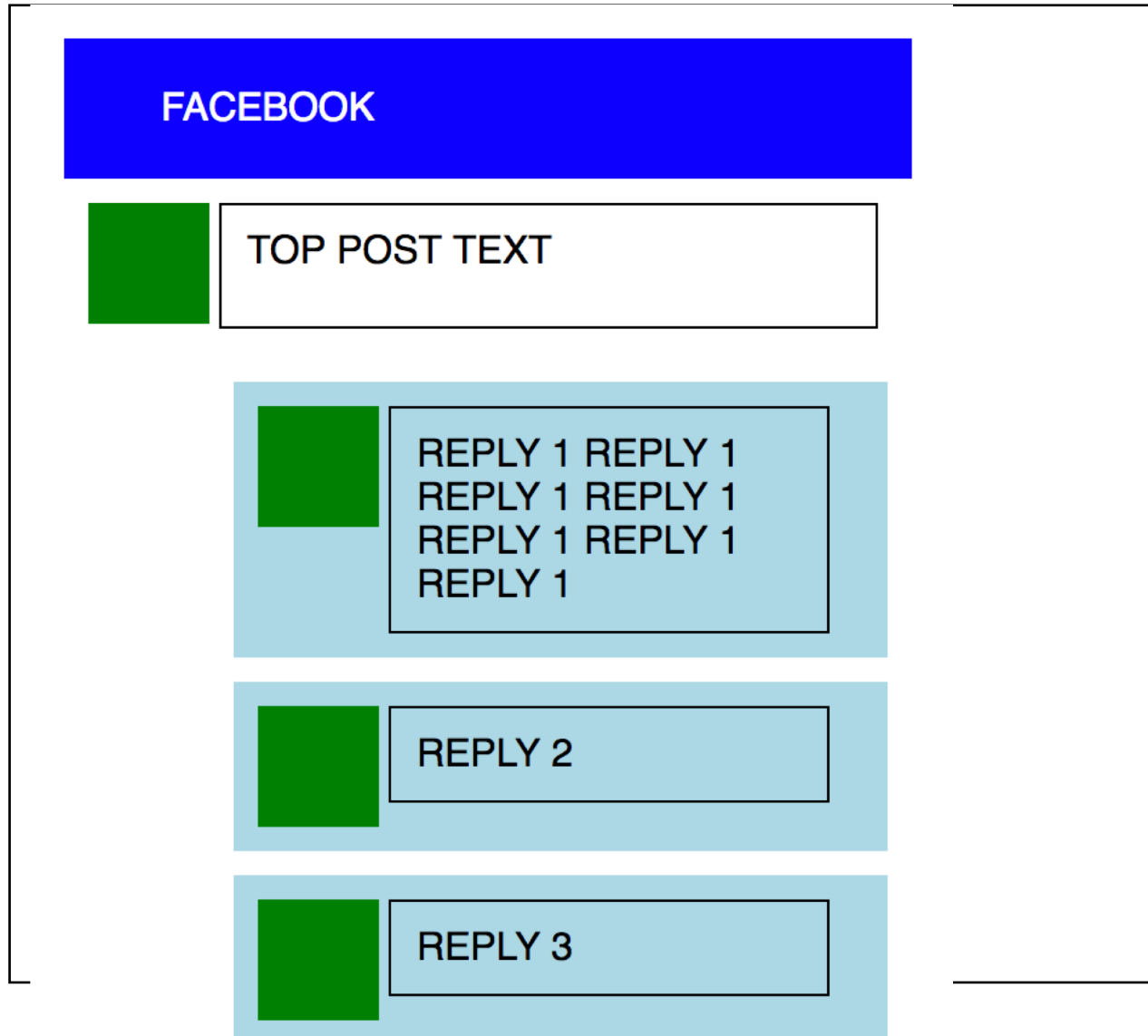
TOP POST TEXT

REPLY 1 REPLY 1  
REPLY 1 REPLY 1  
REPLY 1 REPLY 1  
REPLY 1

REPLY 2

REPLY 3

# What other scaffolding do I need to remove?



**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, making 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 ago · Flag

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

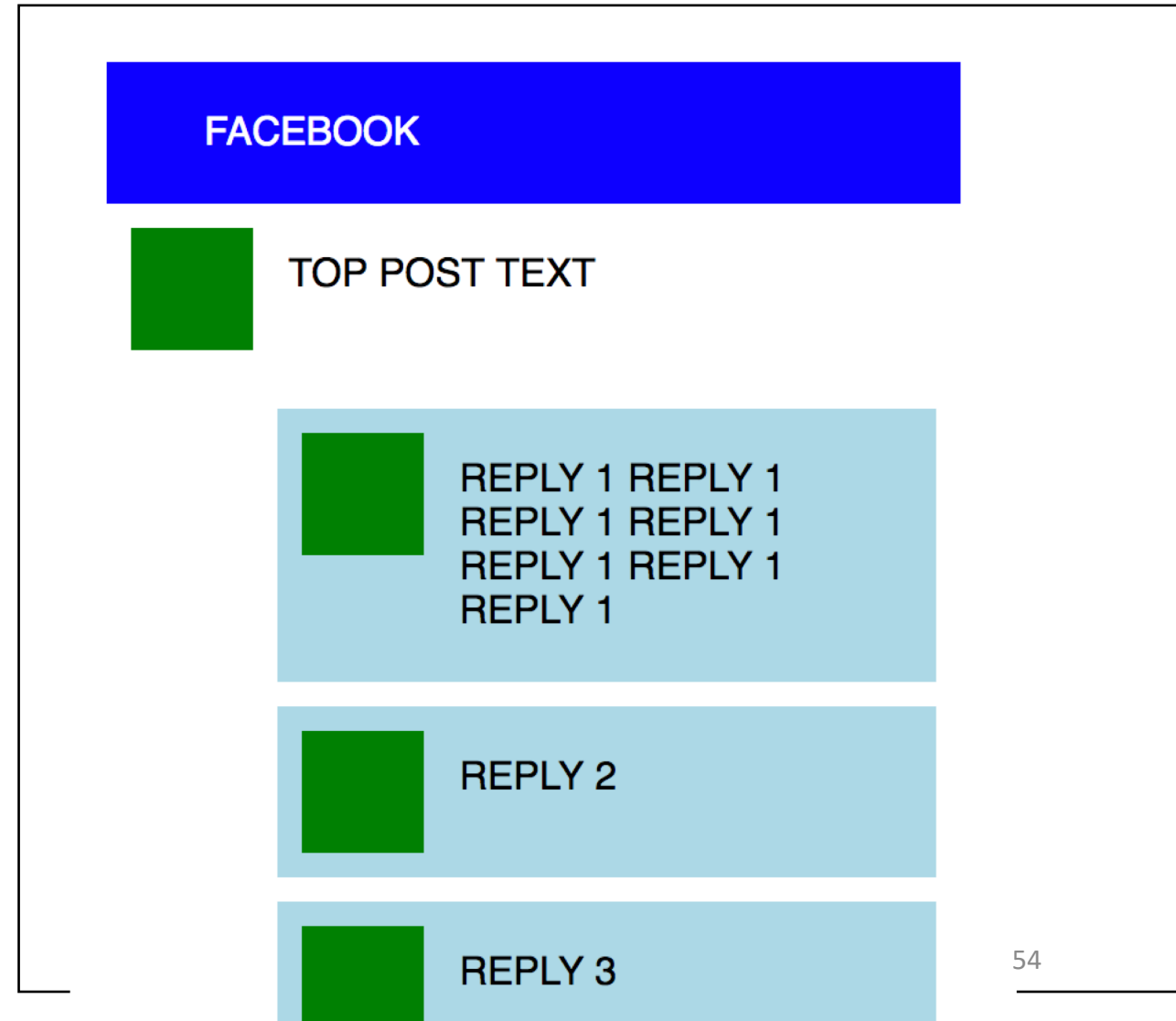
**Jose Antonio Rubido** To push my photpography foward full throttle  
9 minutes ago · Flag

**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 learn!!! 53  
4 minutes ago · Flag

# Remove borders

```
25 #top_post_text{
26   height: 30px;
27   width: 250px;
28   padding: 10px;
29   /*border: 1px solid black;*/
30   display: inline-block;
31   vertical-align: top;
32
33 }
34
53 .reply_text{|
54   width: 160px;
55   padding: 10px;
56   /*border: 1px solid black;*/
57   display: inline-block;
58   vertical-align: top;
59 }
```



# This is a great start for layout!

FACEBOOK

TOP POST TEXT

REPLY 1 REPLY 1  
REPLY 1 REPLY 1  
REPLY 1 REPLY 1  
REPLY 1

REPLY 2

REPLY 3

facebook



**PictureCorrect Photography Tips**

What is your Photography-Related New Year's Resolution??

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Adel Gomaa and Richard Schneider like this.



**Sadi Molloy** get my business looking more professional: car signed: tick, making up portrait folders: tick, stickers & cd covers: still to do... its getting there though.

11 minutes ago · Flag



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-Richard

11 minutes ago · Flag



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10 minutes ago · Flag



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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 learn!!!

4 minutes ago · Flag



**Tina Taylor Hammer** Get my new business moving and have it pay

# After layout... what next?

facebook

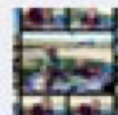


## PictureCorrect Photography Tips

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, making 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

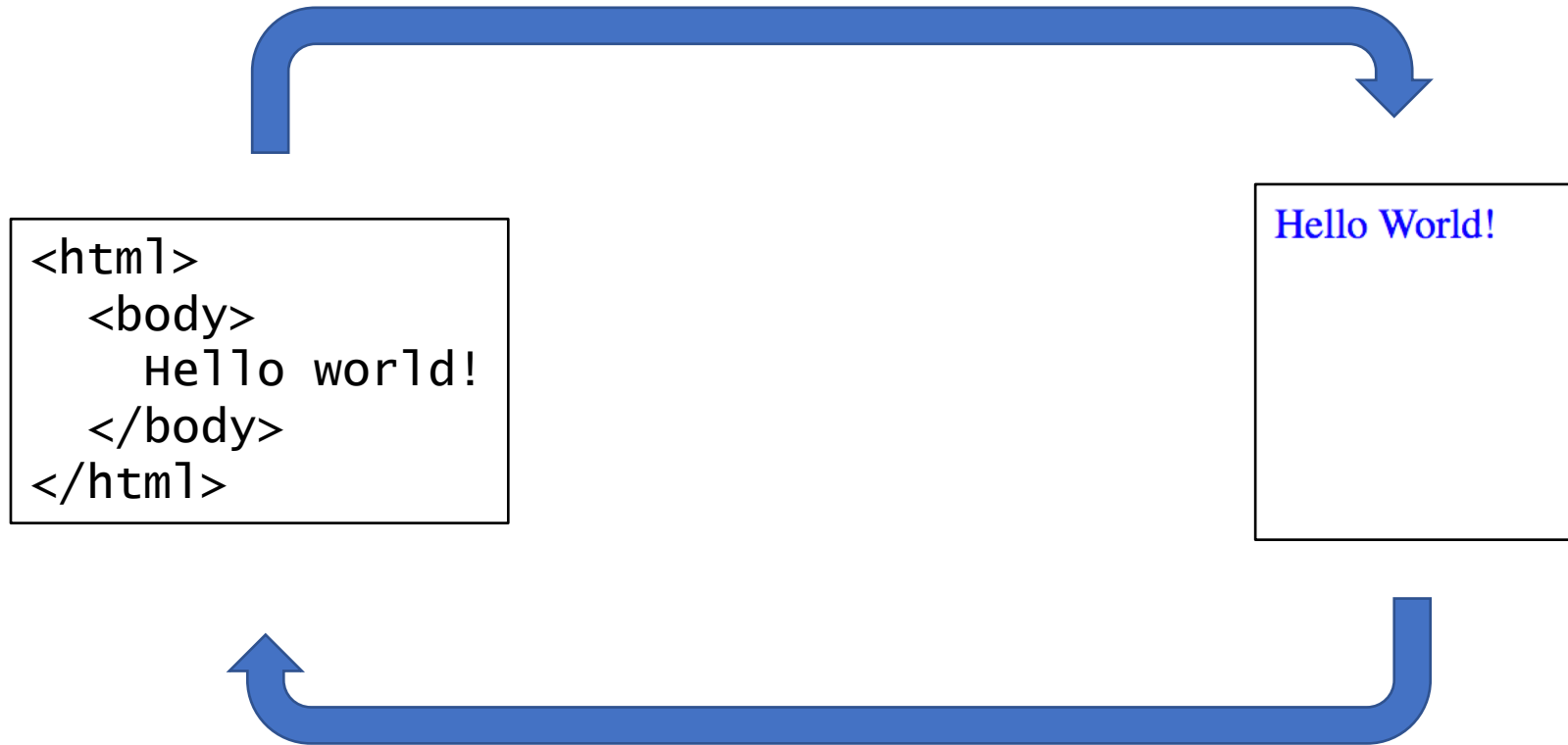
11 minutes ago · Flag



# Iterative Style of Programming

helps you build a mental model of your code.

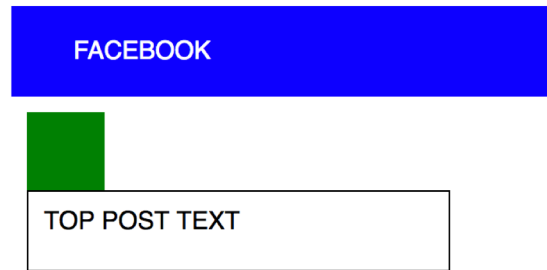
What's the small unit of progress I can make?



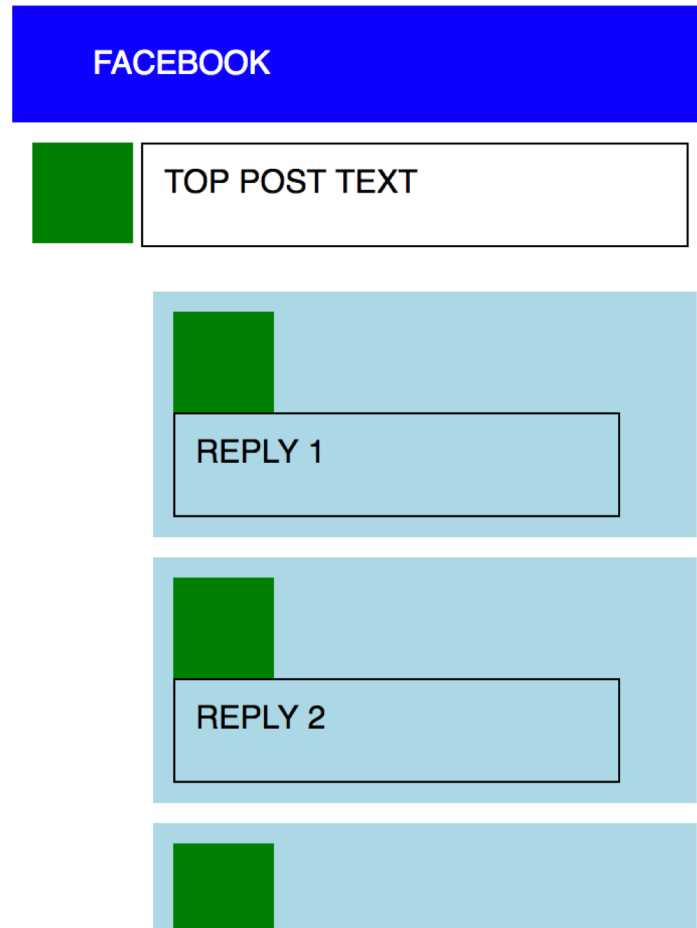
Does it look ok?

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

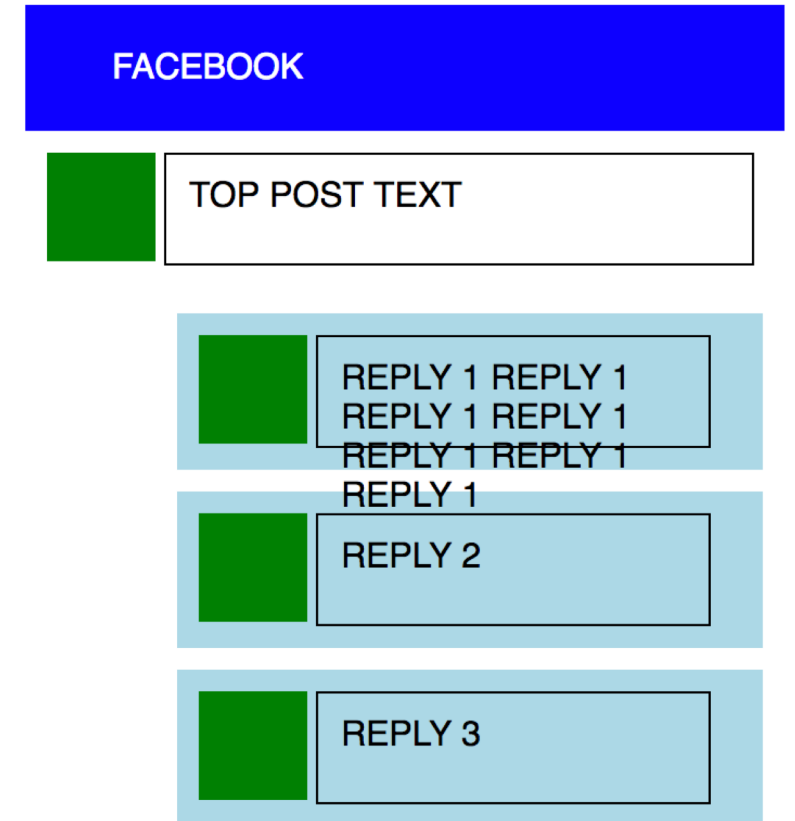
Error 1: display inline-block



Error 2: reply div padding



Error 3: Reply div height



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



# Grids

Currently the dominant way to layout information

# That worked but it would be much easier if we had a grid.



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

COMPOSE

- Inbox (2)
- Sent Mail
- Drafts (54)
- Need to Read
- Technology Coach
- More ▾

Primary	Social	Promotions	Updates	+
<input type="checkbox"/> Baldwin, BPS (2)	<b>Bloglovin'</b> - Not that I know of. Sometimes blocked sites come in on a hug			11:08 am
<input type="checkbox"/> Feldmann, Ann	<b>Fwd: 21st Century Classroom Visit?</b> - Ann Feldmann District Technolog			10:18 am
<input type="checkbox"/> me, Lambert (2)	8th Period - Hey, Jeff. I am planning on doing the Mystery Hangout lesson			8:05 am
<input type="checkbox"/> me	(no subject) - -- Jeffrey Bernadt District Technology Specialist Bellevue Pu			Jan 12
<input type="checkbox"/> me, Braasch, Klamm (3)	Visitation & Observation Request - Good morning! The second semester is			Jan 12
<input type="checkbox"/> me, Cox (2)	Bri Cox - Coaching Doc - Invitation to edit - Jeff, I finally was able to read a			Jan 12
<input type="checkbox"/> Tripple, Todd	3D Printer - Hello Amy, I received some information from a 3D printing exp			Jan 11
<input type="checkbox"/> donotreply	Education Preview Build Notice - 🍏 AppleSeed Build Notice Education Pre			Jan 11
<input type="checkbox"/> Ann Feldmann	Fwd: [New post] What "Innovative Leadership" Looks Like - A good read! :			Jan 11
<input type="checkbox"/> me, Campbell (7)	Khan Academy Issues - It kept repeating that "changed password 7 month			Jan 8
<input type="checkbox"/> Toelle, me (3)	6 Word Stories - Hey Jeff! We just returned from lunch, but still have quite			Jan 8
<input type="checkbox"/> me, Evon (4)	Request to Visit on Thursday AM - Hi Jeff, Happy New Year! We would lov			Jan 6
<input type="checkbox"/> Jeffrey Bernadt	Shared from Twitter: What teachers need to know about multicultural educ			12/23/15

▾

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- Johnson, Stephanie
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- Loomis, Phillip
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- Shannon Gier
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2K

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FBE  
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# Twitter Bootstrap

An implementation of grid layout



# How many columns do you see?

## Columbia University

@Columbia

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

New York, New York

columbia.edu

Joined February 2011

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- #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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New York, New York

[columbia.edu](http://columbia.edu)

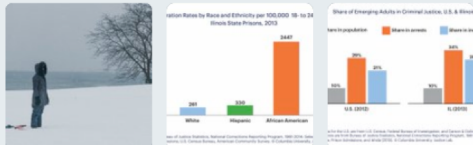
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Rusev

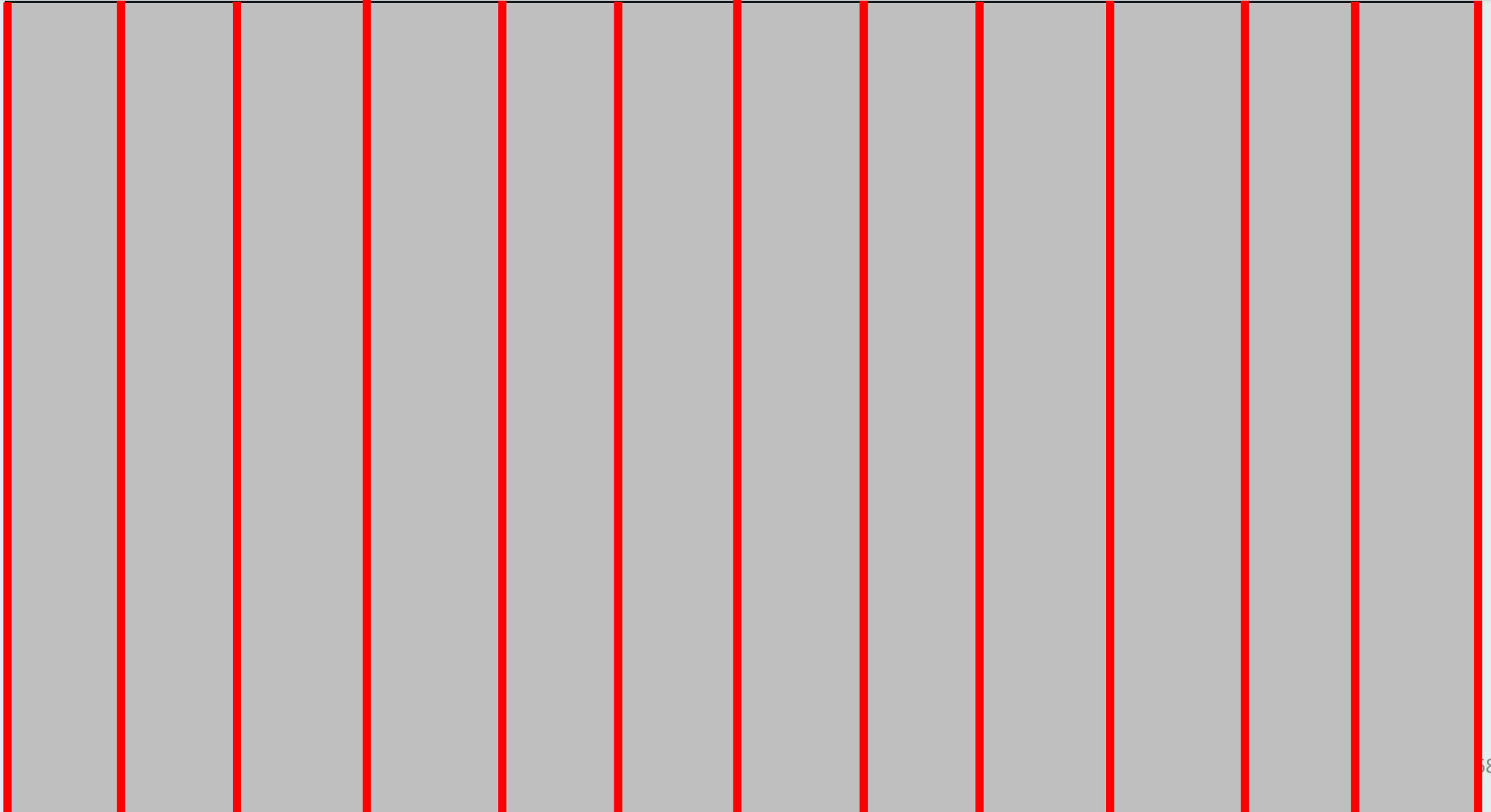
3,867 Tweets

#SBGC

All content goes in the main container



The container is divided into **12 columns**



# You get to apportion those 12 columns

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2,607 Tweets

James Ingram

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Rusev

3,867 Tweets

#SBGC

3,521 Tweets

# 12 columns: split in 3, 6, 3

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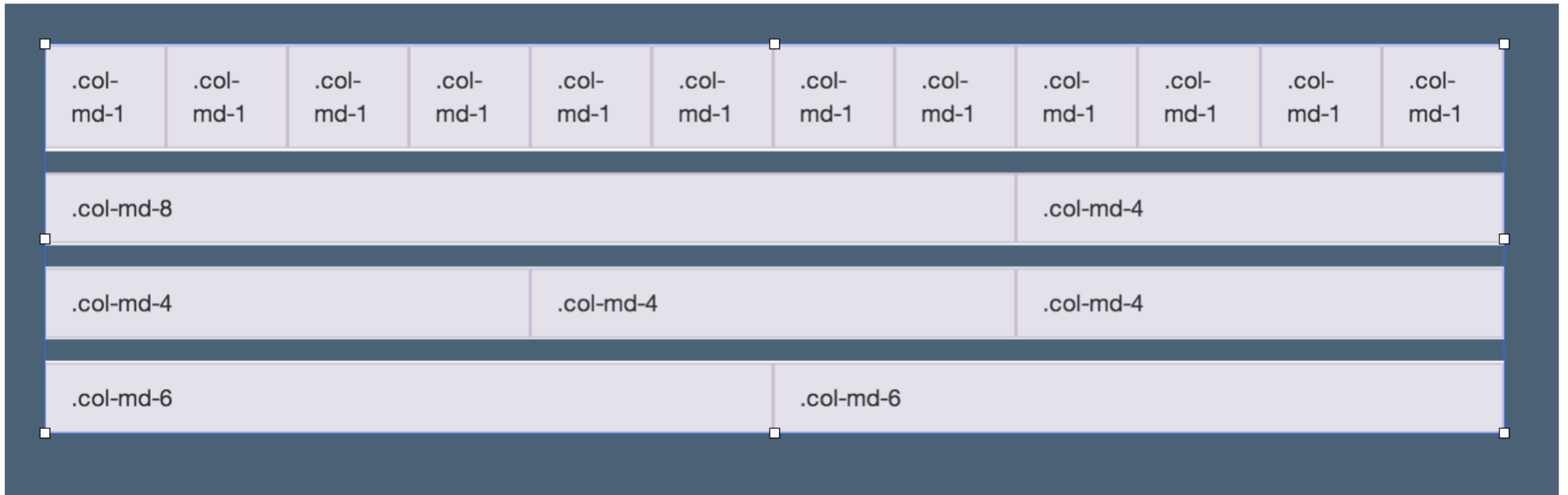
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- #Sabres 2,607 Tweets
- James Ingram R&B legend James Ingram has died at age 66
- Rusev 3,867 Tweets
- #SBGC 3,521 Tweets

# Bootstrap grid. How many columns?



# Do the columns have the same rows?

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- #Sabres**  
2,607 Tweets
- James Ingram**  
R&B legend James Ingram has died at age 66
- Rusev**  
3,867 Tweets
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# Is there alignment within the column?

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- #Sabres**  
2,607 Tweets
- James Ingram**  
R&B legend James Ingram has died at age 66
- Rusev**  
3,867 Tweets
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# Can you use the original grid?

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**#Sabres**  
2,607 Tweets

**James Ingram**  
R&B legend James Ingram has died at age 66

**Rusev**  
3,867 Tweets

**#SBGC**

# Can you use the original grid? NO

The image shows a screenshot of a Twitter profile for Columbia University (@Columbia). The profile includes a bio, location (New York, New York), website (columbia.edu), and a "Who to follow" section with profiles for Princeton University, Yale University, and Harvard University. A tweet is visible, featuring a historical painting of a woman with a red umbrella. A red grid is overlaid on the entire screenshot, with a yellow vertical line highlighting the first column of the grid.

**Columbia University** @Columbia

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New York, New York

columbia.edu

Joined February 2011

Tweet to Columbia University

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**Tweets** Tweets & replies Media

**Columbia University** @Columbia · 39m  
Groundbreaking. Beautiful. Monumental. Posing Modernity: The Black Model from Manet and Matisse to Today is closing soon. Come now, it's free!  
@ColumbiaSOA #arts #Harlem ow.ly/Q8rM30nssdJ

**Who to follow** · Refresh View all

- Princeton University @Princeton
- Yale University @Yale
- Harvard University @Harvard

**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

# Grids within grids!!!

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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

New York, New York

columbia.edu

Joined February 2011

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4 Followers you know



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## Tweets Tweets & replies Media



Columbia University @Columbia · 31m  
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@ColumbiaSOA #arts #Harlem [ow.ly/Q8M30nssdJ](https://www.columbia.edu/~columbia/ow.ly/Q8M30nssdJ)



## Who to follow · Refresh View all



Princeton University

Follow



Yale University

Follow



Harvard University

Follow



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#SDLive

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2,607 Tweets

James Ingram

R&B legend James Ingram has died at age 66

Rusev

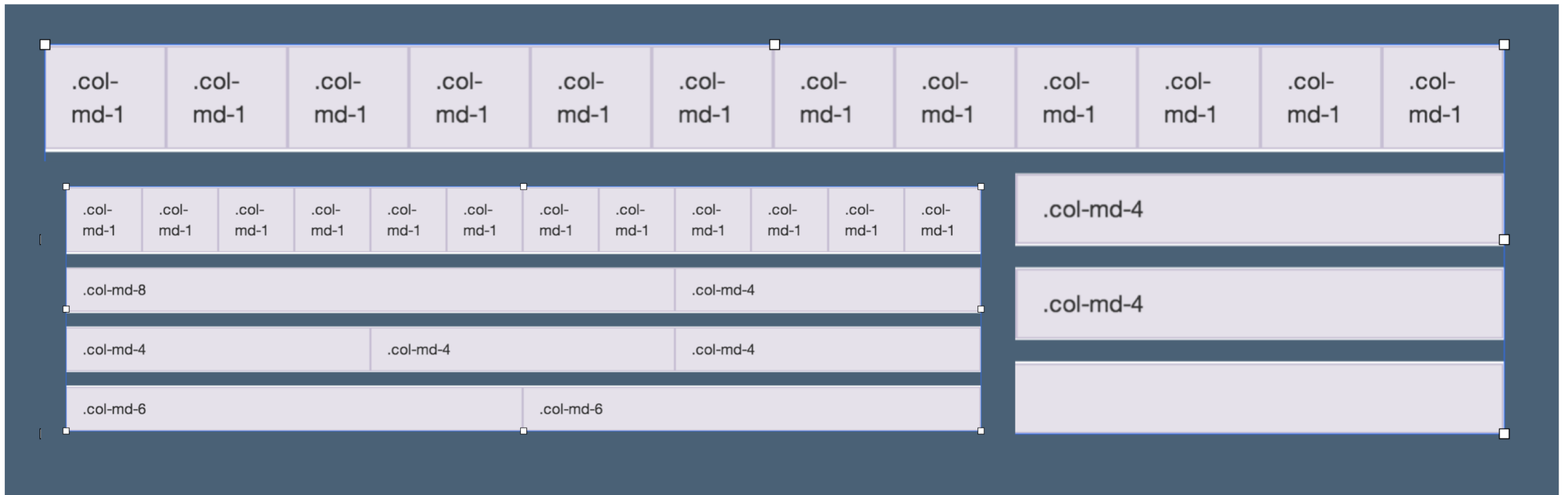
3,867 Tweets

#SBGC

3,521 Tweets

# Nested grids.

Apportion 12 columns with in a column.





# What's happening?

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Log in



Featured

Sports

News

Music

Entertainment

Lifestyle

More ▾

## Moments · View all

Isaiah Thomas becomes a meme...  
NBA · 2 hours ago



This bot-generated Coachella...  
Haha · 3 hours ago



People are going crazy over this...  
Business Insider · 5 hours ago



**New to Twitter?**

Sign up now to get your own personalized timeline!

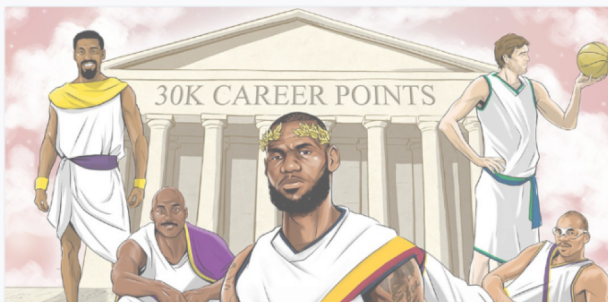
[Sign up](#)

## Featured Tweets

### General News >



### Sports commentary >



### World News >



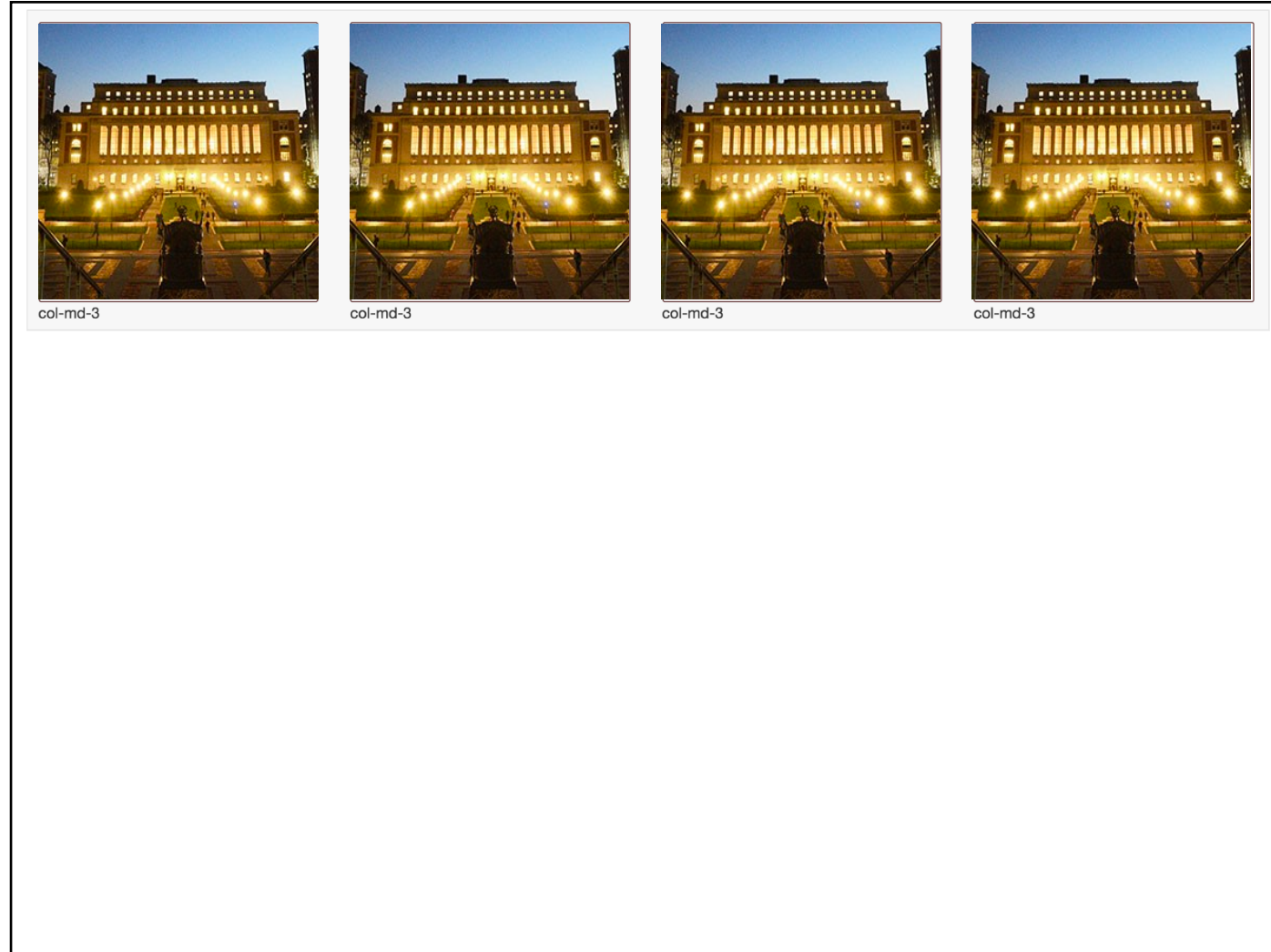
# Add Bootstrap to your HTML

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

```
1 <!doctype html>
2 <html>
3   <head>
4     <meta charset="utf-8">
5     <title>Test</title>
6
7     <!-- Add Bootstrap -->
8     <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0-alpha.6/css/bootstrap.min.css" integrity="sha384-A7Zj7v+d/sdmMqp/n0QwliLvUsJfDHW-
9     <script src="https://code.jquery.com/jquery-3.1.1.slim.min.js" integrity="sha384-A7FZj7v+d/sdmMqp/n0QwliLvUsJfDHW-
10    <script src="https://cdnjs.cloudflare.com/ajax/libs/tether/1.4.0/js/tether.min.js" integrity="sha384-DztdAPBWPRXSA
11    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0-alpha.6/js/bootstrap.min.js" integrity="sha384-vBWwz
12
13    <!-- Add our own CSS and JS -->
14
15    <link href="components/main.css" rel="stylesheet" type="text/css">
16
```

# 1. What will this produce?

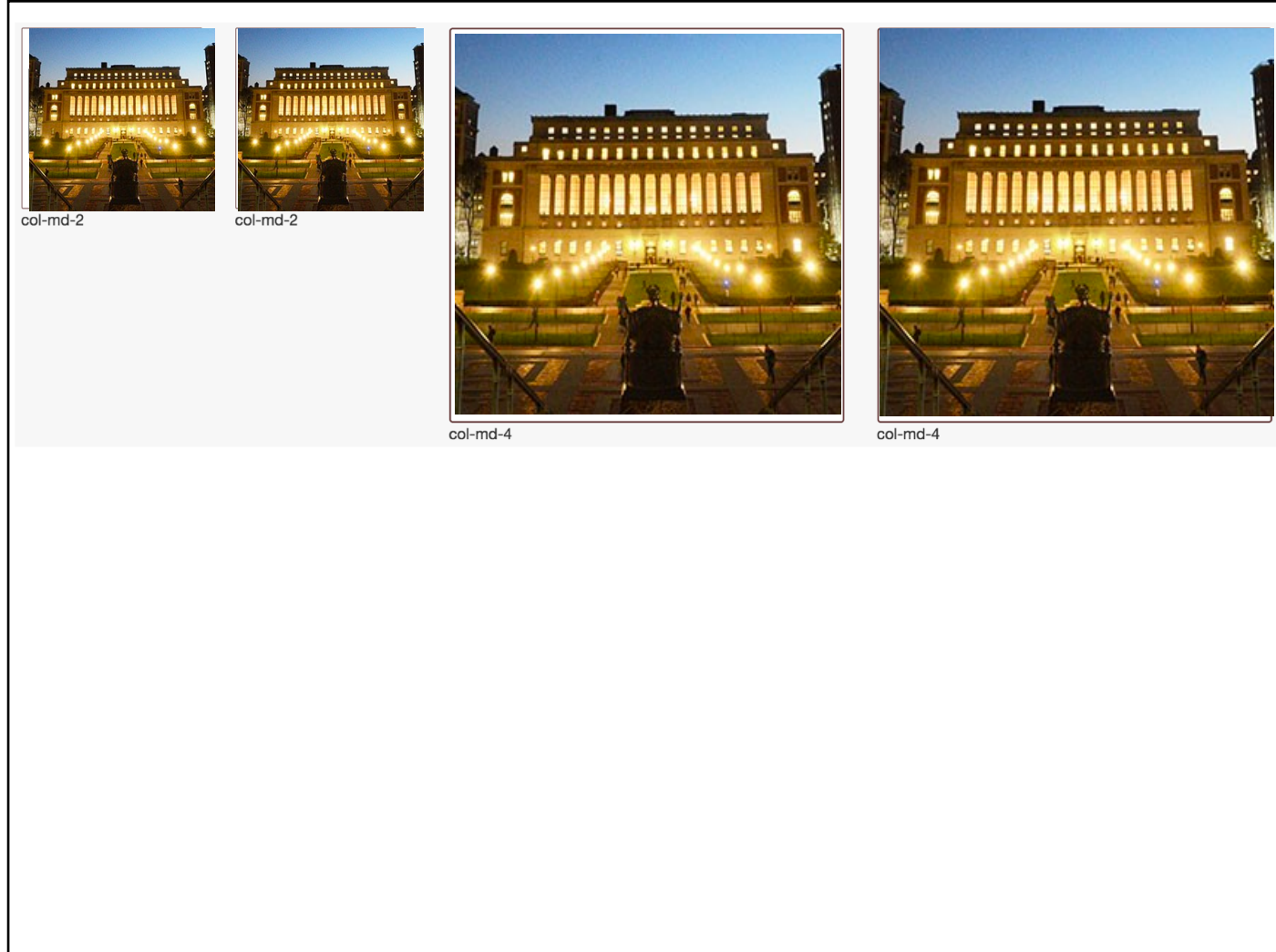
```
<div class="container">  
  <div class="row">  
    <div class="col-md-3">  
        
    </div>  
    <div class="col-md-3">  
        
    </div>  
    <div class="col-md-3">  
        
    </div>  
    <div class="col-md-3">  
        
    </div>  
  </div>  
</div>
```





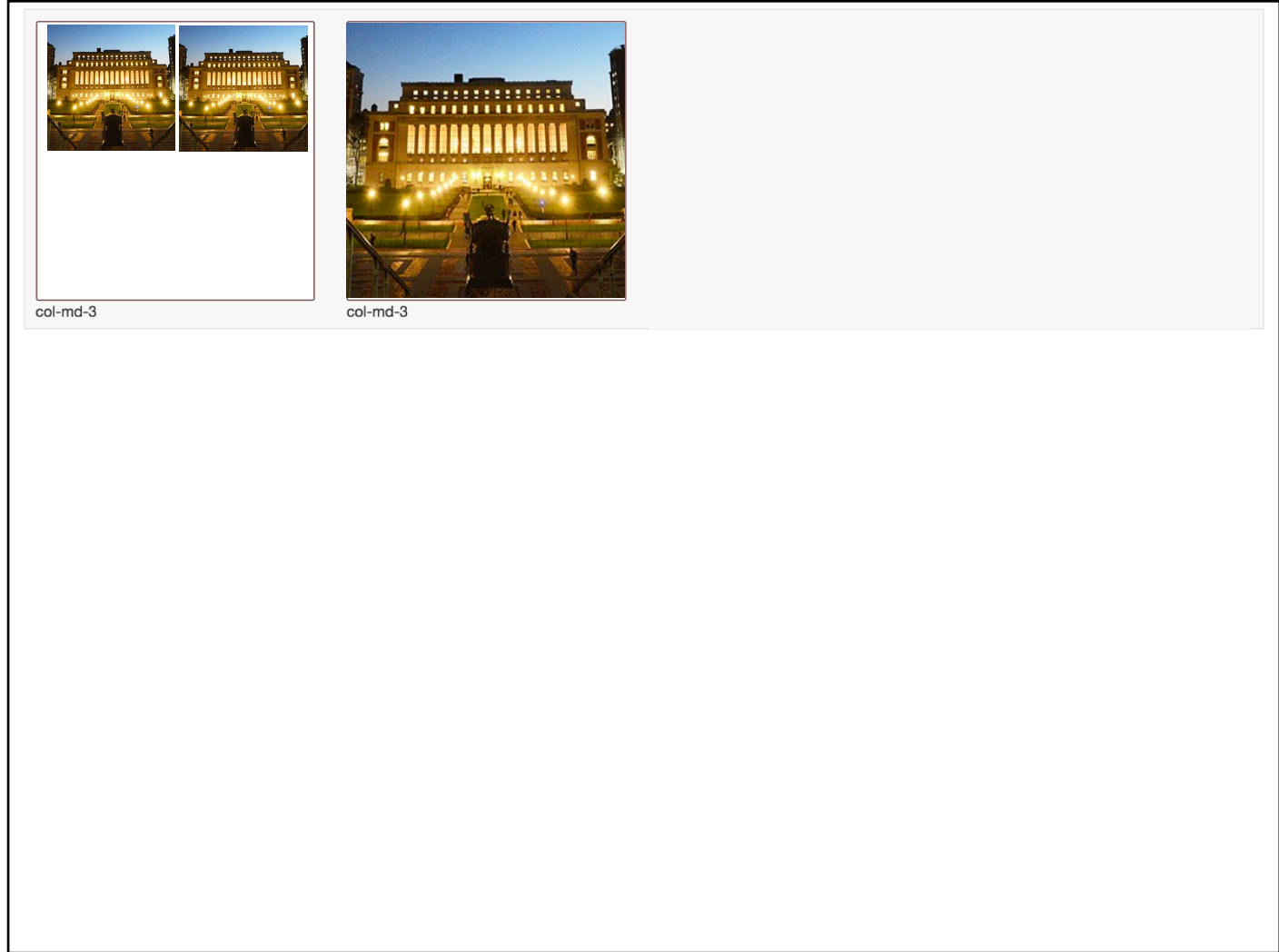
## 2. What will this produce?

```
<div class="container">
  <div class="row">
    <div class="col-md-2">
      
    </div>
    <div class="col-md-2">
      
    </div>
    <div class="col-md-4">
      
    </div>
    <div class="col-md-4">
      
    </div>
  </div>
</div>
```

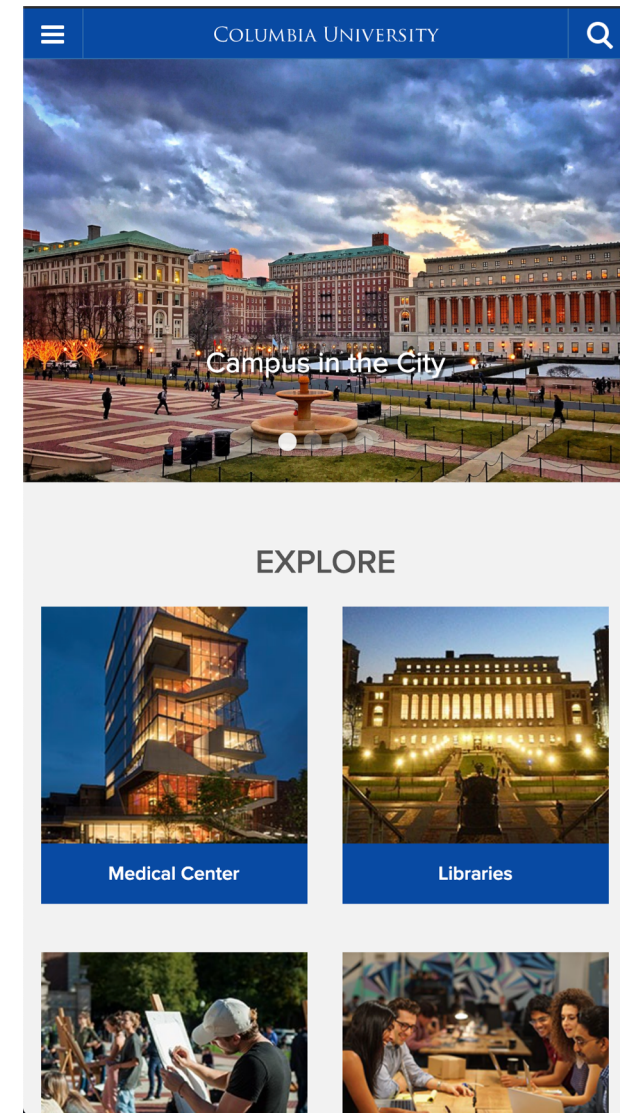
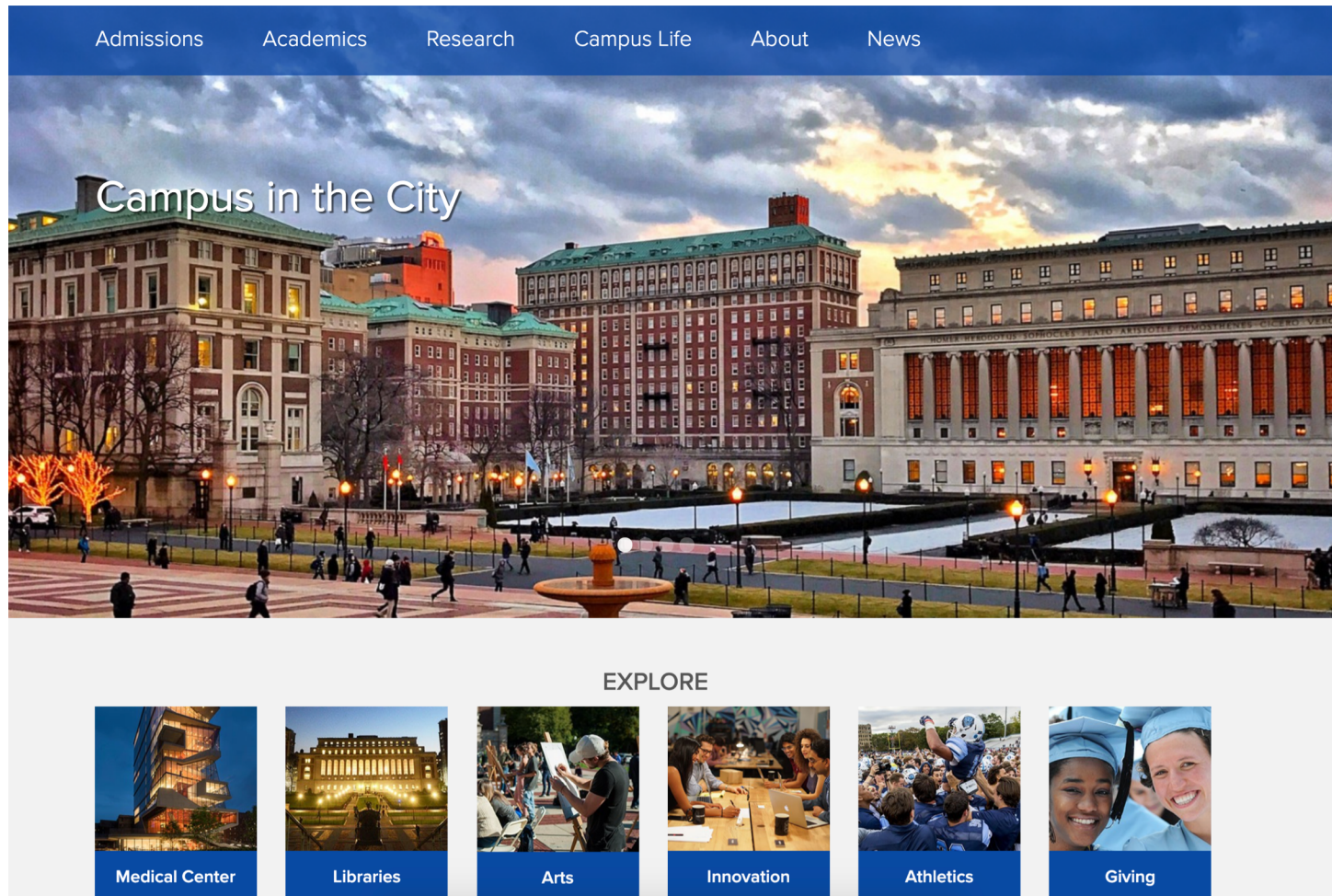


# 3. What will this produce?

```
<div class="container">  
  <div class="row">  
    <div class="col-md-3">  
      <div class="row">  
        <div class="col-md-6">  
            
        </div>  
        <div class="col-md-6">  
            
        </div>  
      </div>  
    </div>  
    <div class="col-md-3">  
        
    </div>  
    <div class="col-md-6">  
    </div>  
  </div>  
</div>
```



# Bootstrap solves another problem for you



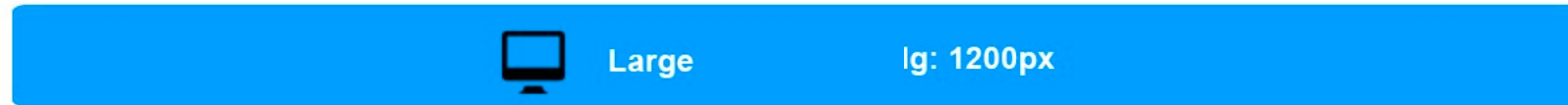
## 4. Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

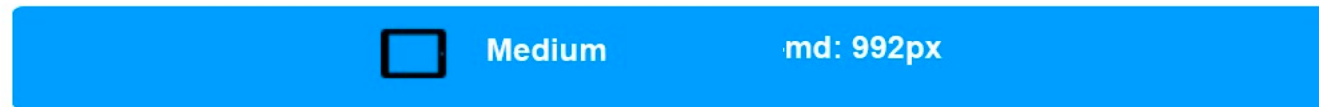


Bootstrap enables **responsive design**: making it easy for the layout to respond to changes in the screen size.

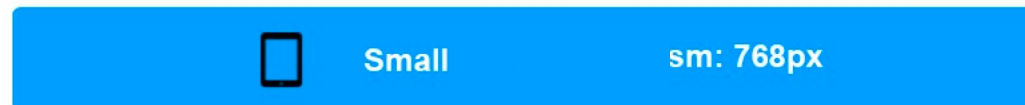
# Four Device sizes



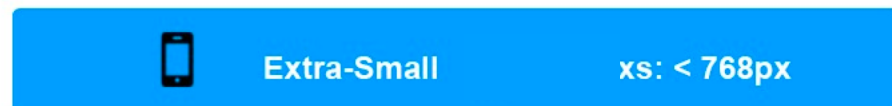
Desktops



Laptops



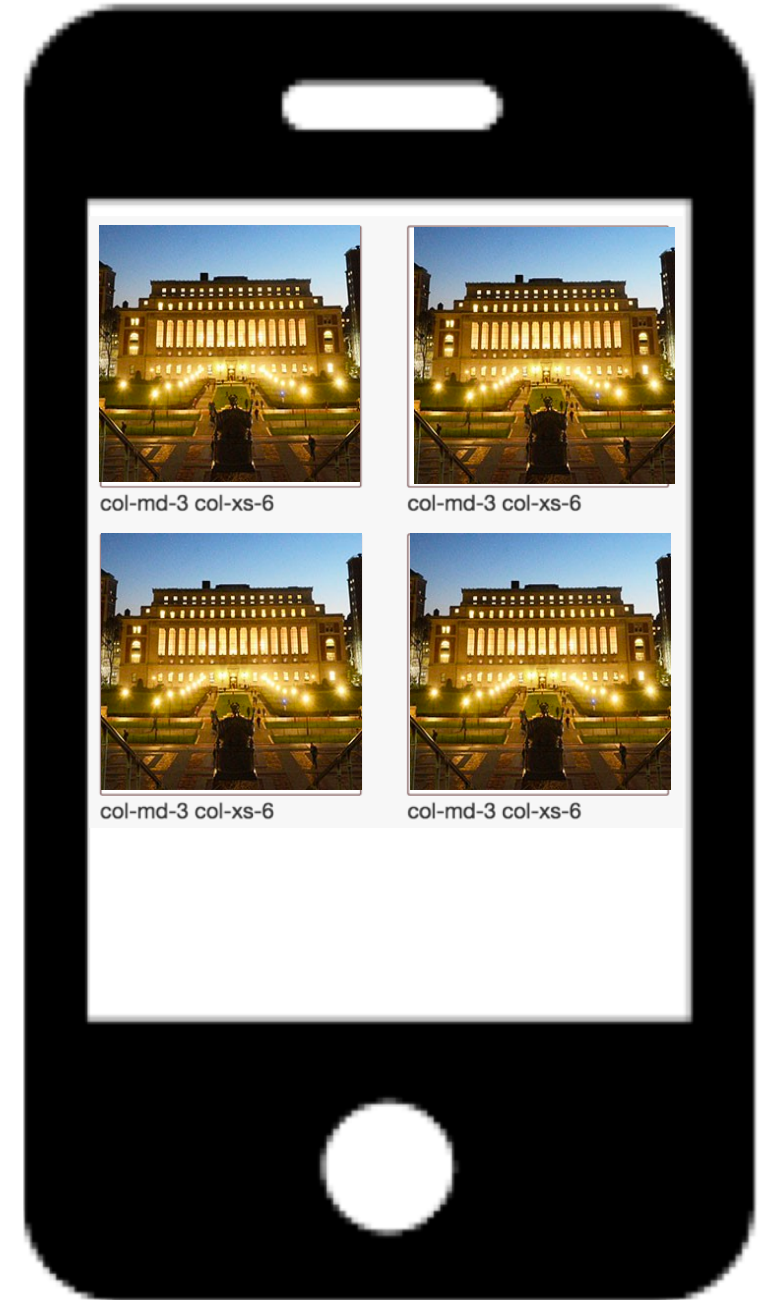
Tablets



Phones

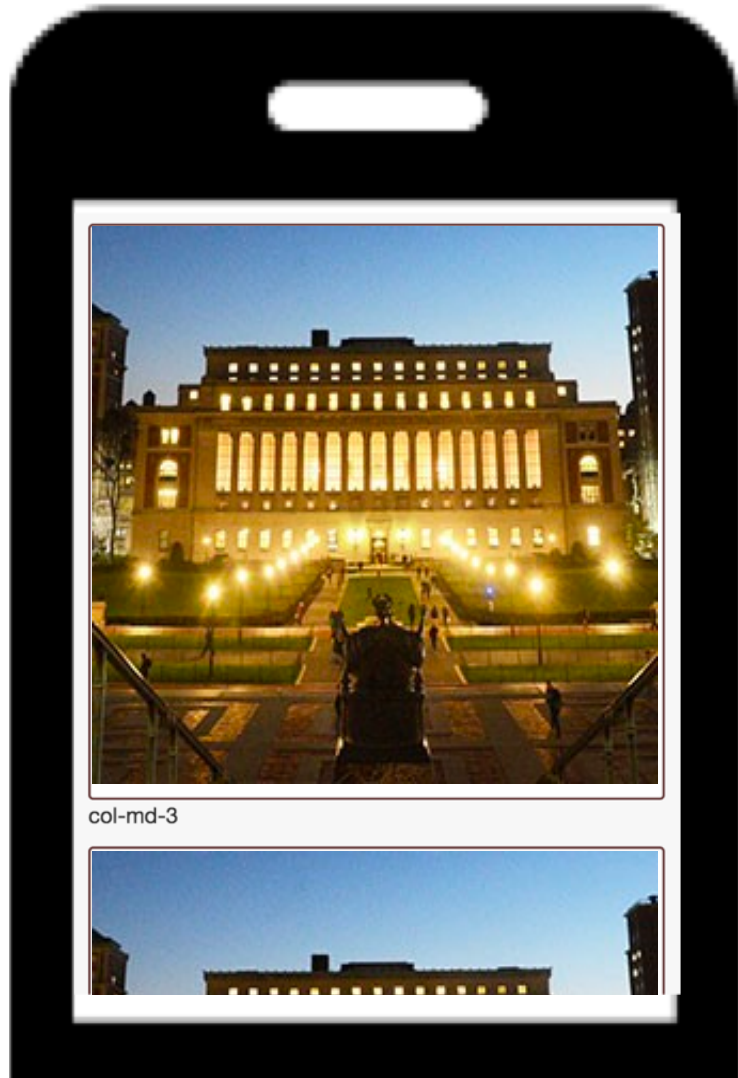
# What will this do on a phone?

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



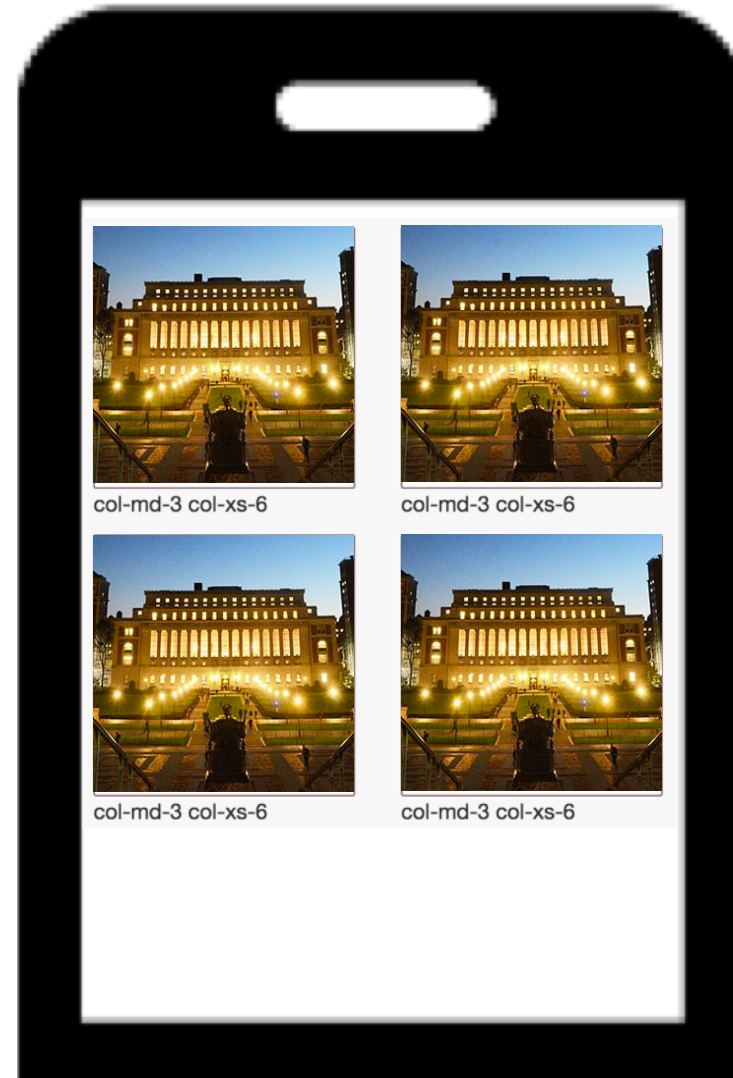
# What's the difference in layout?

`class="col-md-3"`



col-md-3

`class="col-md-3 col-sm-6"`



col-md-3 col-xs-6

col-md-3 col-xs-6

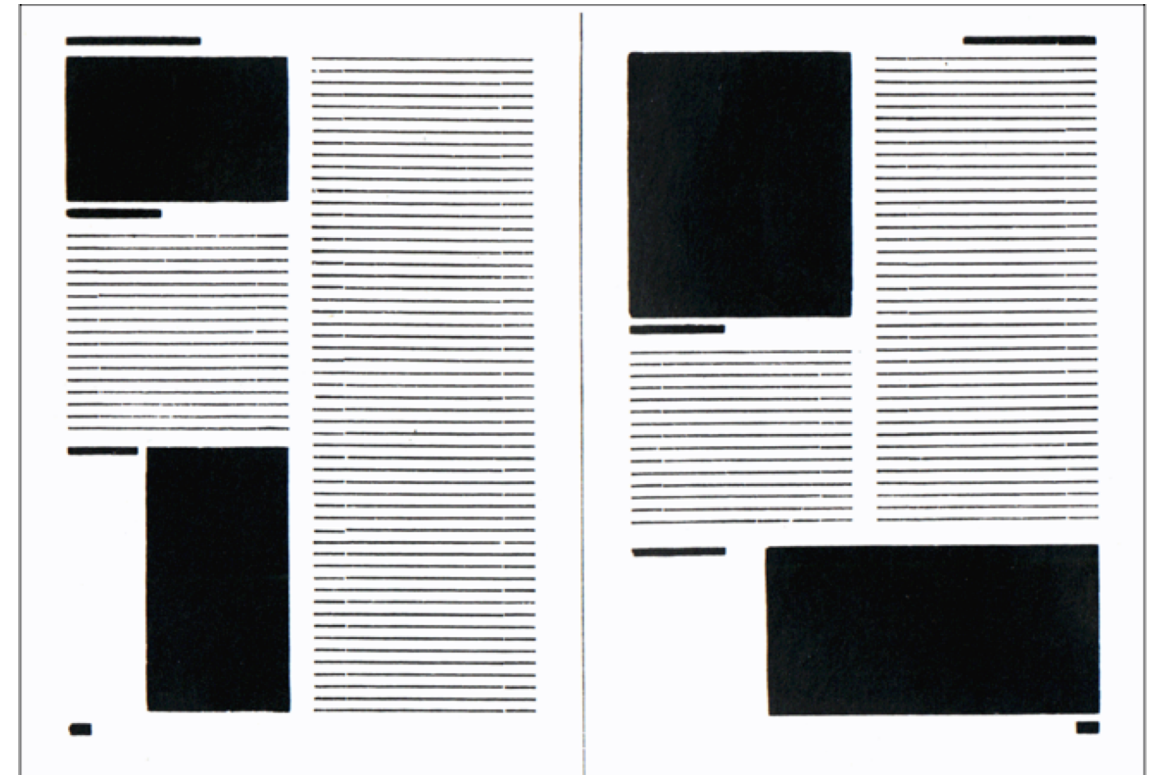
col-md-3 col-xs-6

col-md-3 col-xs-6

In summary...





The Bauhaus School of Design helped give rise to asymmetric grid layouts.



# Old school information layout was symmetrical

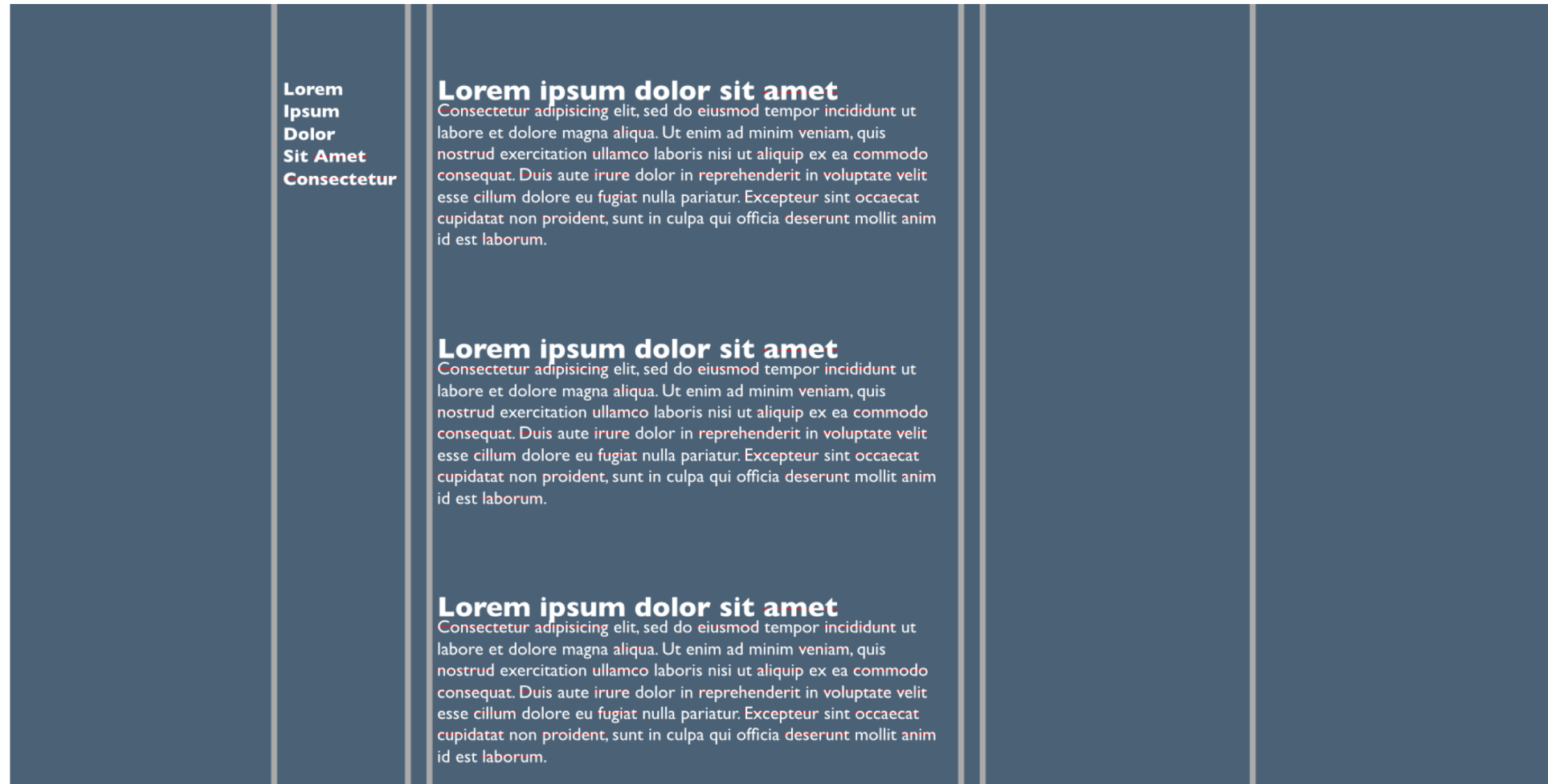
**LEIPZIGER  
MESSE**  
*Allgemeine Mustermesse mit  
Technischer Messe und  
Baumesse*  
**Die allgemeine internationale  
Messe Deutschlands**  
*Die erste und größte Messe der Welt  
Für Aussteller und Einkäufer  
gleich wichtig*  
**BEGINN DER HERBSTMESSE AM 27. AUGUST 1922.**  
*Auskunft erteilt und Anmeldungen nimmt entgegen*  
**MESSAMT FÜR DIE MUSTERMESSEN  
IN LEIPZIG**

**Vance Hotel** ways 21, 64, 70  
**Statesville, N. C.** We Never Close  
  
**"FAMOUS for FOOD"**  
  
**TYPICAL MENU**

<b>BREAKFAST</b> 25 cents Fruit or Cereal One Egg, Any Style One Piece Bacon or Sausage Jelly Hominy Grits Buttered or Dry Toast Coffee    Tea    Milk \$ Specials from 25c to 75c \$ A La Carte Service at all Times \$ See Food in Special	<b>LUNCH</b> 35c and 50c Homemade Vegetable Soup Tomato Broth Lettuce and Tomato Salad Roast Beef Brown Gravy Baked Virginia Ham Fried Salmon Trout and Cole Slaw Boston Brown Potatoes Green Beans Diced Carrots and Cream Corn Muffins Assorted Pies Fruit Jello Whipped Cream Vanilla or Chocolate Ice Cream and Cake \$ See Food in Special	<b>DINNER</b> 50 cents Tomato Juice Homemade Vegetable Soup Cream of Green Pea Soup Country Style Steak Broiled Lamb Chops Baked Salmon Trout Poached Egg on Toast Hash Brown Potatoes Early June Peas Corn Pudding Head Lettuce with Dressing Boston Cream Pie Vanilla or Chocolate Ice Cream and Cake \$ See Food in Special
---	---	---

**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 TAMALES (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**  
 Ice Cream 40  
 Parfaits 50  
 Baked Fresh Rhubarb 50  
 Sherbet 40  
**Pastry Specials**  
 Blackbottom Pie 40  
 Parisian Pastries 40  
 Rio Rita Cake 40  
 Rice or Chocolate Pudding 35  
**BEVERAGES AS LISTED ON A LA CARTE MENU**  
Sales Tax will be added on all taxable items in accordance with the rulings  
issued under the Sales and Use Tax Law  
Sorry we cannot be responsible for lost articles  
Friday, January 17, 1947

# Grids layouts help you convey importance with grouping, location, size, and whitespace.



# Twitter Bootstrap is a widely used grid system.

### Moments · View all

**Isaiah Thomas becomes a meme...**  
NBA · 2 hours ago



**This bot-generated Coachella...**  
Haha · 3 hours ago



**Coachella**  
INDIO CALIFORNIA

**Fri**  
Fanch  
Hoop of Gomb Lab Raid Jacked Like A Man Giraffics Ben Sex  
Hissing ... Sutto Fisticuffs Slime Bomb Bing the Bong Day House of the Savins Big Big Sting  
Clapline Marf Style Empt-Ti Gooly Fyne Bark Sagging Luck Psychic Gloria Bease Closs Rays Harden  
Giant N 1/Me/Bood Beth Fortune Band Don't Kiss John Party w/ Mather Acid Jonathan Is High Mattia Baghead  
Mach Moon Barry Sky People Corgis Come Go Boy Break Jane In the Name of Electric City Matt Rock Singer Jonathan Jaz  
Bambambh Steve Bony Madam Labretmore Sky Gile Jonathan Washburn Lord Moses Matt Drummer Sturgeon Billy Smeers  
Girls of Parks Lisannaia Sould Bony Potholones Nellie Bellvernt Man Mice

**Sat**  
One of Pig  
Horse Choir Beth Factory Clothongz Smushy Twin Backwanzus  
Bendy B Bood Hooges Eric Knowes Flangs Baddwards Mighty Gross Bogwolf Max Beaf  
Dickerson Gang Ganklets Joey Broad Killow Badthuk P-30F BoyBoys Daily Die Bad Are Scenery  
Staves Enhanced Rocky Sarsons Project Mover Migration Jettie Charley H. Karsie All For Wilton Mary Fearwell  
Bobo Craywell Then Steepwell Sale Boys 07 P! I Love You the Wait Crayman Let Love Dogway Belobvies  
Don't Be Wild Loss Back Beckman Rubulizian Magaback Book Friends Lake Mover Body Margalies Mica, Toss Ball  
Lungs Mikki Backers No Bruch Reupzian Larry Presents Beemak Stronemom

**Sun**  
Lil Hack  
Mild By Boys Beachfeet Paper Cop Boneo Bootleg Tims  
Hoon McManch Here Comes ... Death Mike Dunk Billiens Maria Mindless Skin Clump  
Automate De-Chinger Halfway Starch Cedergat Mega Batman Otherfax Bookbust Food Thoyd  
Drugs Ship Coral Bays Sandy Bunkles Bangle Thru Art Gank ... Arm Footstep Badles Blackman Shonit  
Kilars Tibart Cass Washelton Cray Kase Pappal Bead Frank Micky Lice Sai Day Bead Shadsworth Pappaloo  
Jeff Load Mianie De Shie Cab ... Original Matic Music Beag Harris Macthon Spines Man Trap Screevy Bays  
Deaf Miki Mianie Mark Soud Chisty Spiders Gnos

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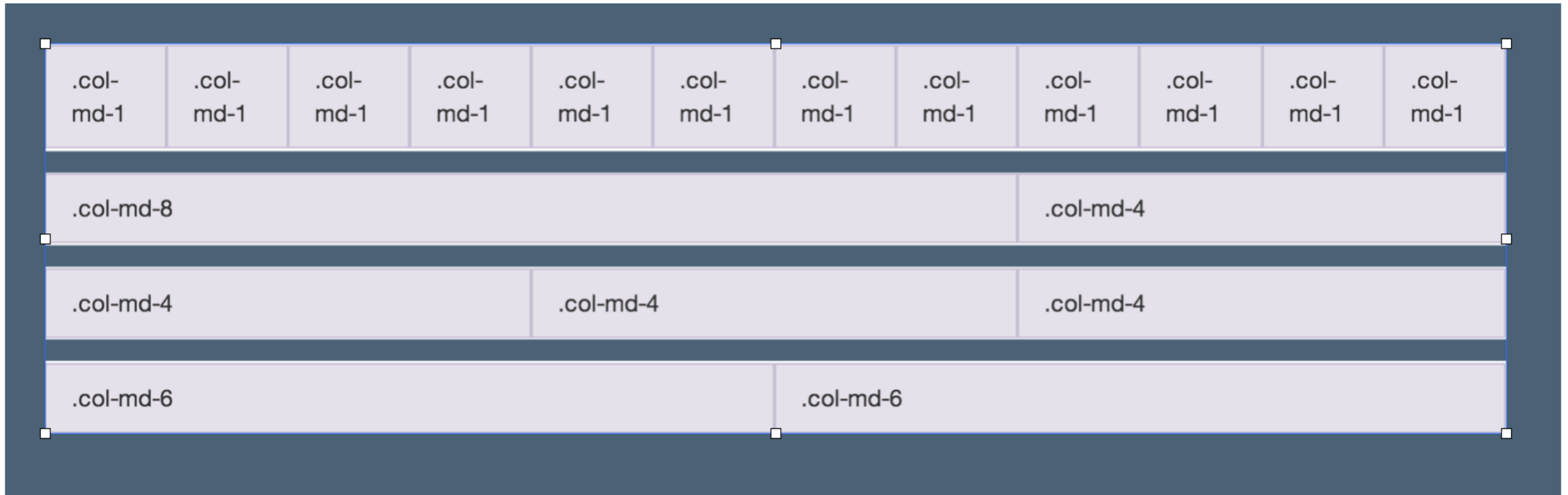
Sports commentary >



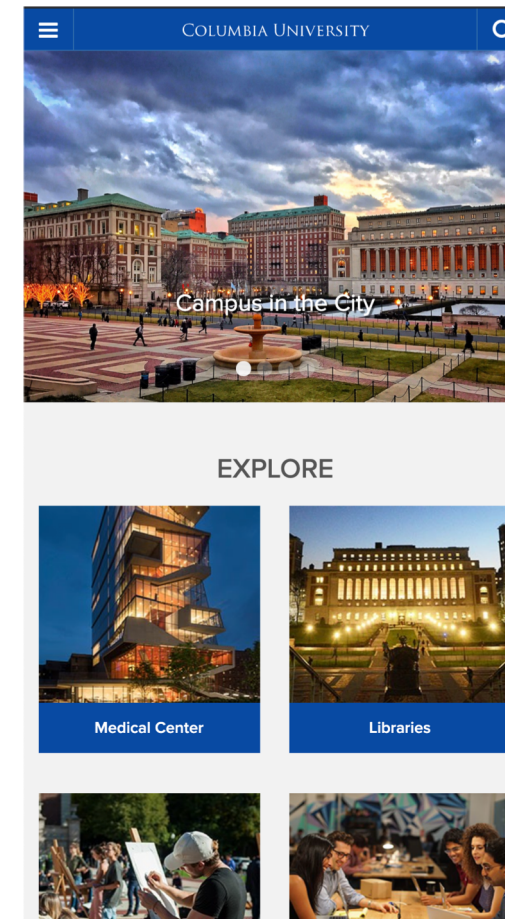
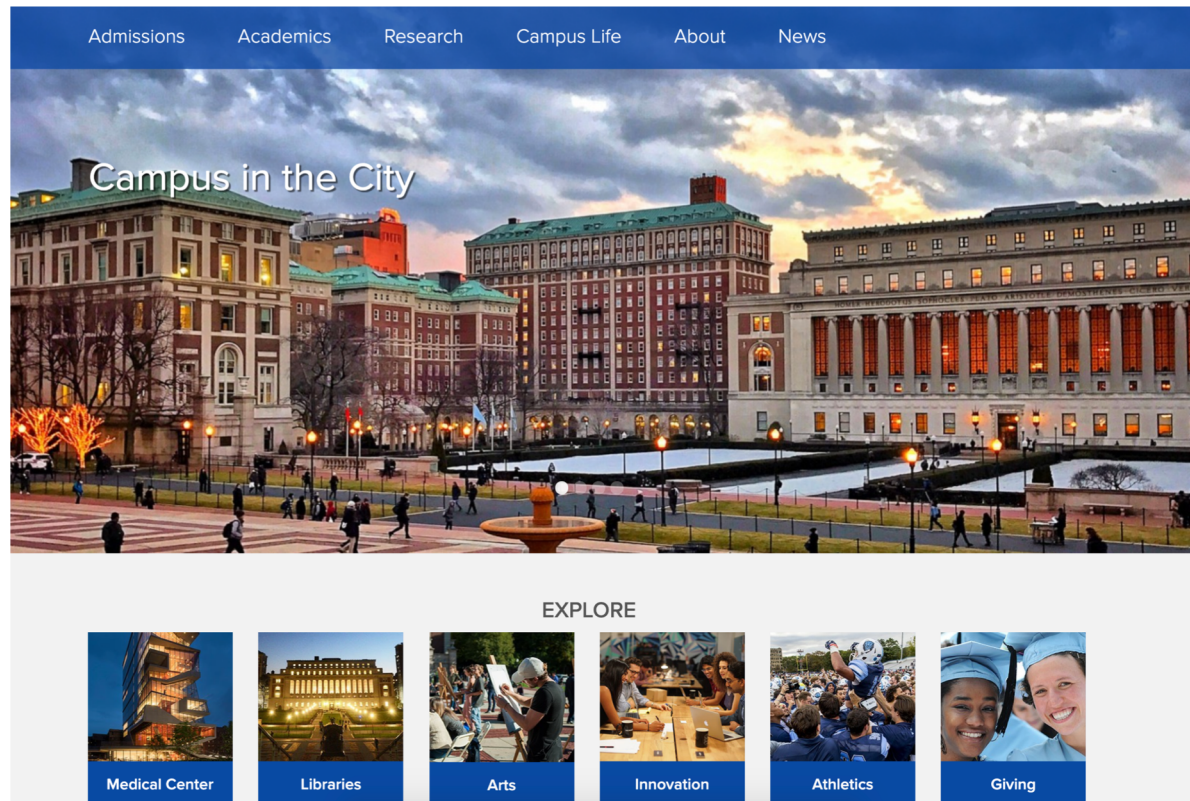
World News >



# Bootstrap allocates width into twelve columns



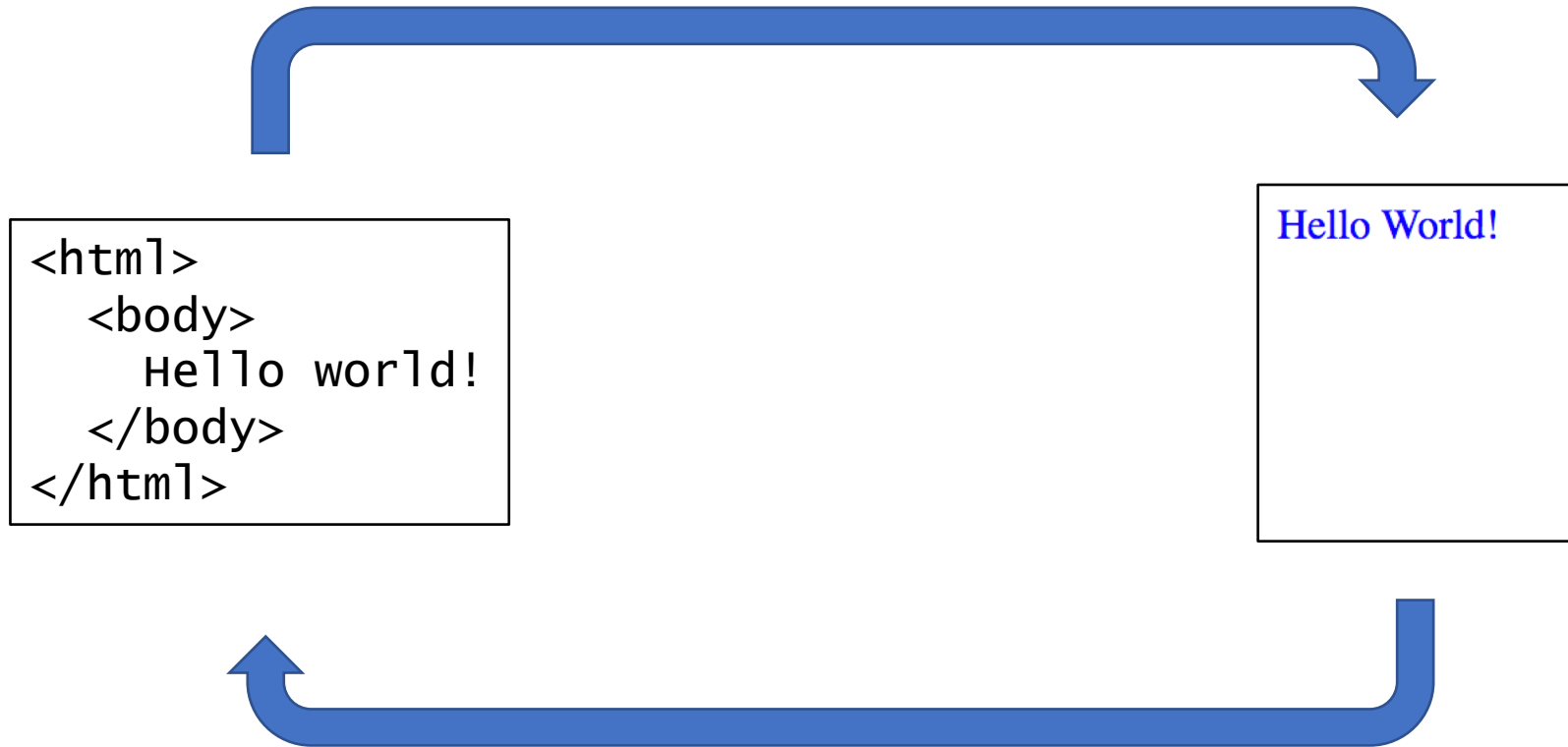
# Responsive design helps you specify the layout for different sized screens



# Iterative Style of Programming

helps you build a mental model of your code.

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



Does it look ok?

# Homework 2: HTML and Grid Layout

Warm up: due Friday 1/31 @ 11:59pm on Courseworks

Main: due Tuesday 2/4 @ 11:59pm on Courseworks.

(accepted as on-time until Wednesday 2/5 @8am)

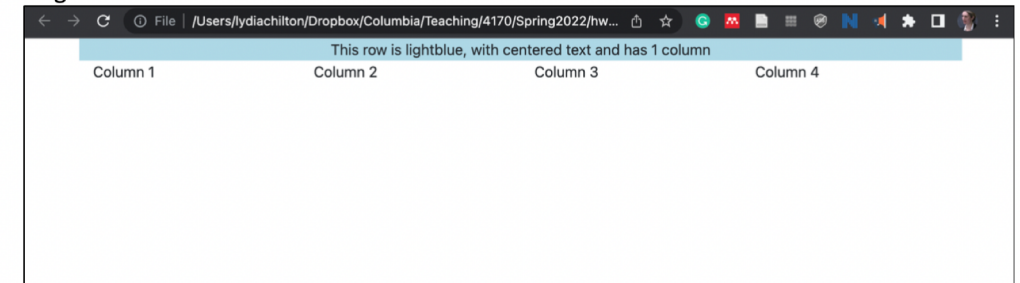
## Problems:

1. **Recreate the following webpage.** (Shown below at two different screen sizes)
  - a. Use Bootstrap 5.0.2.
  - b. Add the following information in the in the <head> section to attached the correct version of bootstrap and to allow your browser to easily simulate responsive design:

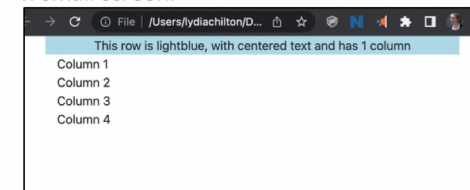
```
<meta name="viewport" content="width=device-width, initial-scale=1">
```

```
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css"
rel="stylesheet" crossorigin="anonymous">
```

Large screen:



x-small screen:



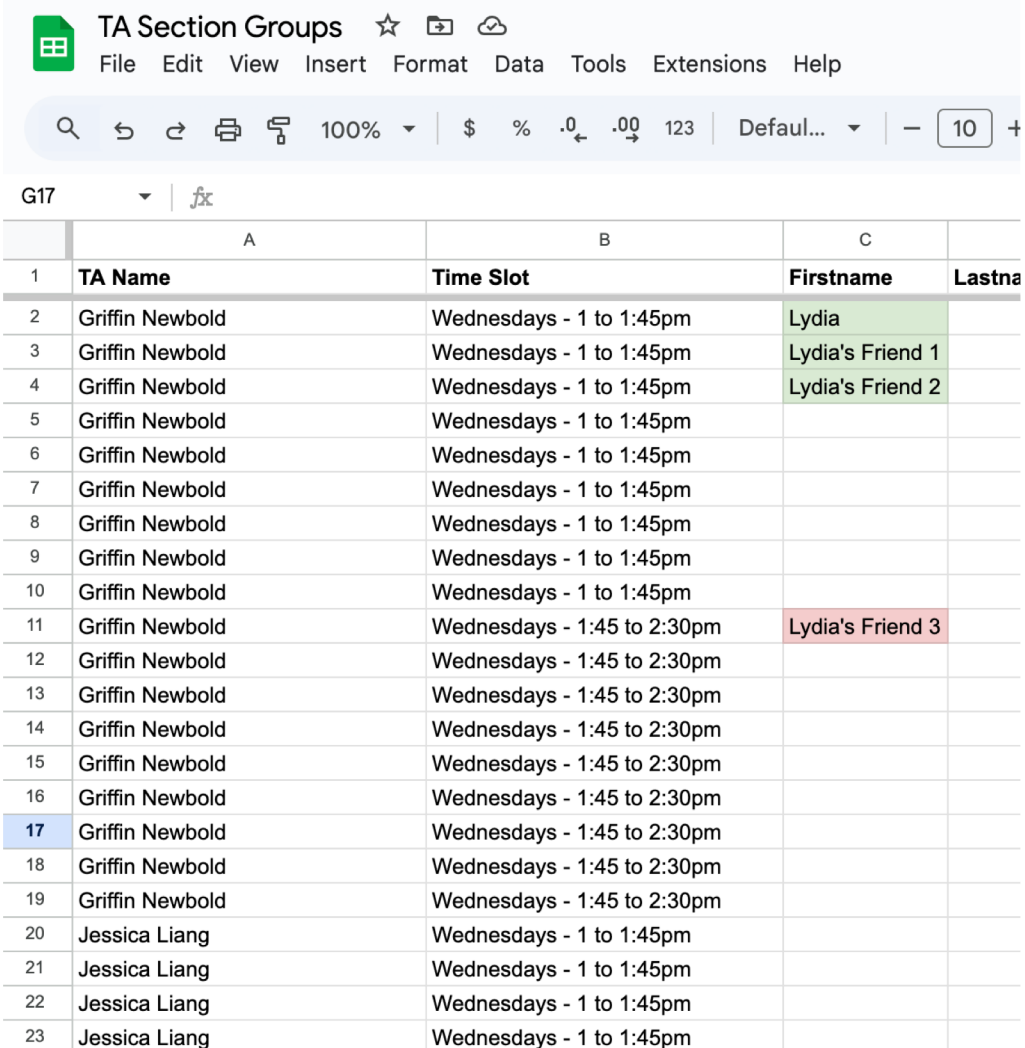


# Start Picking your TA - Wednesday @3pm

For the final Project, you will work in teams of 2-4.

Your team mates must be in the same TA group.

So if you have friends you might want to work with, make sure you all sign up for the same TA group and time.



The screenshot shows a Google Sheet titled "TA Section Groups" with a menu bar (File, Edit, View, Insert, Format, Data, Tools, Extensions, Help) and a toolbar with search, undo, redo, print, and zoom options. The sheet contains a table with the following data:

	A	B	C	Lastna
1	<b>TA Name</b>	<b>Time Slot</b>	<b>Firstname</b>	
2	Griffin Newbold	Wednesdays - 1 to 1:45pm	Lydia	
3	Griffin Newbold	Wednesdays - 1 to 1:45pm	Lydia's Friend 1	
4	Griffin Newbold	Wednesdays - 1 to 1:45pm	Lydia's Friend 2	
5	Griffin Newbold	Wednesdays - 1 to 1:45pm		
6	Griffin Newbold	Wednesdays - 1 to 1:45pm		
7	Griffin Newbold	Wednesdays - 1 to 1:45pm		
8	Griffin Newbold	Wednesdays - 1 to 1:45pm		
9	Griffin Newbold	Wednesdays - 1 to 1:45pm		
10	Griffin Newbold	Wednesdays - 1 to 1:45pm		
11	Griffin Newbold	Wednesdays - 1:45 to 2:30pm	Lydia's Friend 3	
12	Griffin Newbold	Wednesdays - 1:45 to 2:30pm		
13	Griffin Newbold	Wednesdays - 1:45 to 2:30pm		
14	Griffin Newbold	Wednesdays - 1:45 to 2:30pm		
15	Griffin Newbold	Wednesdays - 1:45 to 2:30pm		
16	Griffin Newbold	Wednesdays - 1:45 to 2:30pm		
17	Griffin Newbold	Wednesdays - 1:45 to 2:30pm		
18	Griffin Newbold	Wednesdays - 1:45 to 2:30pm		
19	Griffin Newbold	Wednesdays - 1:45 to 2:30pm		
20	Jessica Liang	Wednesdays - 1 to 1:45pm		
21	Jessica Liang	Wednesdays - 1 to 1:45pm		
22	Jessica Liang	Wednesdays - 1 to 1:45pm		
23	Jessica Liang	Wednesdays - 1 to 1:45pm		