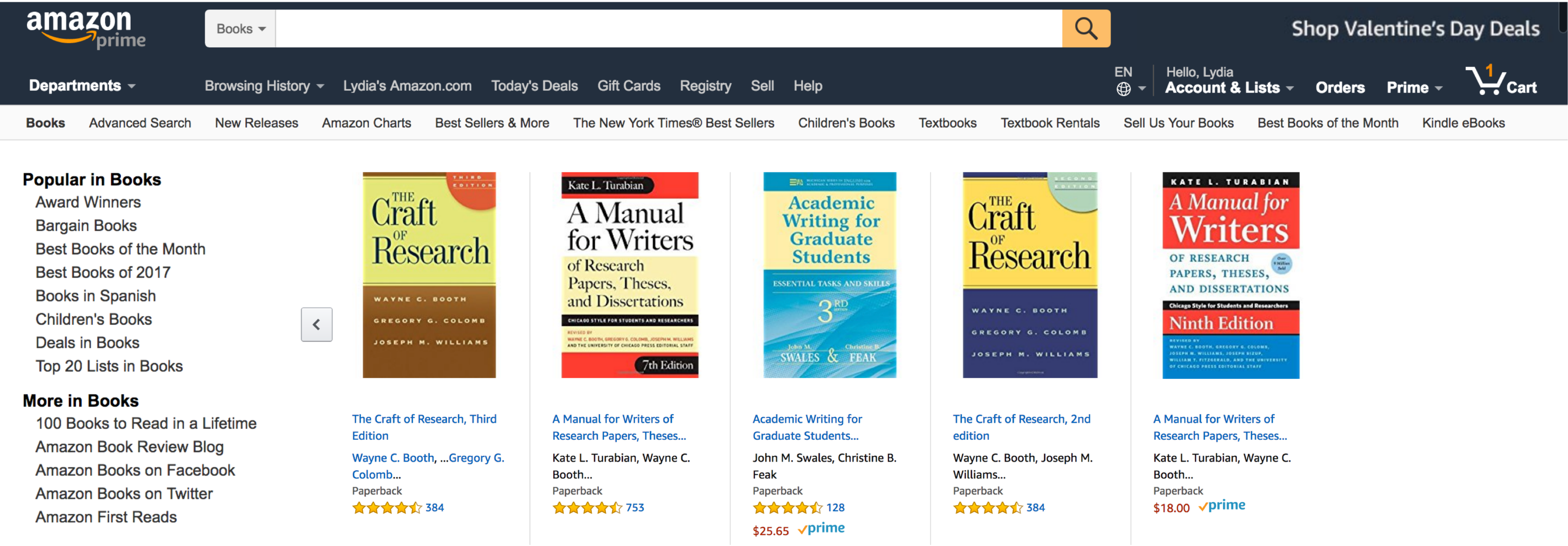
JavaScript, Widgets, & Events

No screens

Prof. Lydia Chilton
COMS 4170
5 February 2020

Say your name

Users interact with the system to accomplish a goal.



Popular in Books
- Award Winners
- Bargain Books
- Best Books of the Month
- Best Books of 2017
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More in Books
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- Amazon Book Review Blog
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The Craft of Research, Third Edition
Wayne C. Booth, ...Gregory G. Colomb...
Paperback
★★★★☆ 384

A Manual for Writers of Research Papers, Theses...
Kate L. Turabian, Wayne C. Booth...
Paperback
★★★★☆ 753

Academic Writing for Graduate Students...
John M. Swales, Christine B. Feak
Paperback
★★★★☆ 128
$25.65 ✓prime

The Craft of Research, 2nd edition
Wayne C. Booth, Joseph M. Williams...
Paperback
★★★★☆ 384

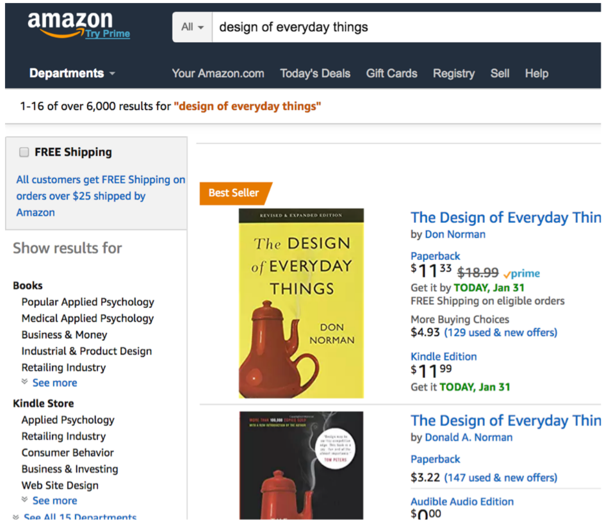
A Manual for Writers of Research Papers, Theses...
Kate L. Turabian, Wayne C. Booth...
Paperback
$18.00 ✓prime

To buy a book.

The designer must create the subgoals and interactions to help them accomplish it.

Goal: Buy a book

Subgoal:	Find it	Add to cart	Enter payment info	Place order
Interaction:	Type, click	click	Type, click, point	Click


amazon Try Prime

All ▾ design of everyday things

Departments ▾ Your Amazon.com Today's Deals Gift Cards Registry Sell Help

1-16 of over 6,000 results for "design of everyday things"

□ FREE Shipping

All customers get FREE Shipping on orders over $25 shipped by Amazon

Show results for

Books
- Popular Applied Psychology
- Medical Applied Psychology
- Business & Money
- Industrial & Product Design
- Retailing Industry
- See more

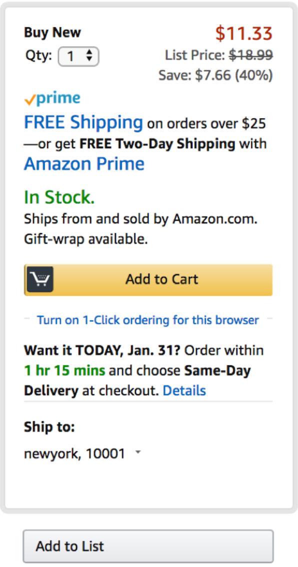
Kindle Store
- Applied Psychology
- Retailing Industry
- Consumer Behavior
- Business & Investing
- Web Site Design
- See more

See All 15 Departments

Best Seller

The Design of Everyday Thin
by Don Norman
Paperback
$11.33 ~~$18.99~~ prime
Get it by TODAY, Jan 31
FREE Shipping on eligible orders
More Buying Choices
$4.93 (129 used & new offers)
Kindle Edition
$11.99
Get it TODAY, Jan 31

The Design of Everyday Thin
by Donald A. Norman
Paperback
$3.22 (147 used & new offers)
Audible Audio Edition
$0.00


Buy New $11.33

Qty: 1 List Price: ~~$18.99~~

Save: $7.66 (40%)

prime

FREE Shipping on orders over $25 —or get **FREE Two-Day Shipping** with Amazon Prime

In Stock.

Ships from and sold by Amazon.com. Gift-wrap available.

Add to Cart

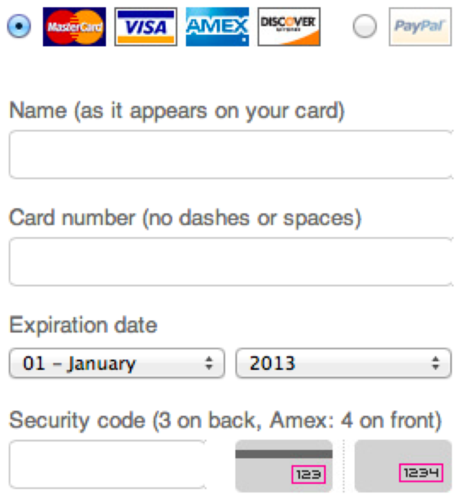
Turn on 1-Click ordering for this browser

Want it TODAY, Jan. 31? Order within 1 hr 15 mins and choose **Same-Day Delivery** at checkout. Details

Ship to:

newyork, 10001

Add to List


● MasterCard VISA AMEX DISCOVER ○ PayPal

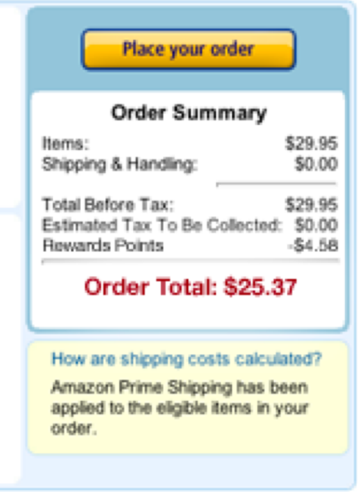
Name (as it appears on your card)

Card number (no dashes or spaces)

Expiration date

01 – January 2013

Security code (3 on back, Amex: 4 on front)


Place your order

Order Summary

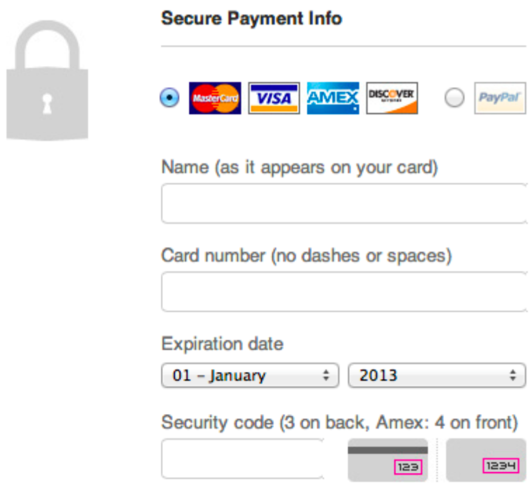
Items:	$29.95
Shipping & Handling:	$0.00
Total Before Tax:	$29.95
Estimated Tax To Be Collected:	$0.00
Rewards Points	-$4.58

Order Total: $25.37

How are shipping costs calculated?

Amazon Prime Shipping has been applied to the eligible items in your order.

Low-level interactions take time and effort. Minimize them because you do them a lot.



Secure Payment Info

● MasterCard VISA AMEX DISCOVER ○ PayPal

Name (as it appears on your card)

Card number (no dashes or spaces)

Expiration date

01 – January

2013

Security code (3 on back, Amex: 4 on front)

Move

Click

Move

Click

TypeTypeTypeType

Move

Click

TypeTypeTypeType

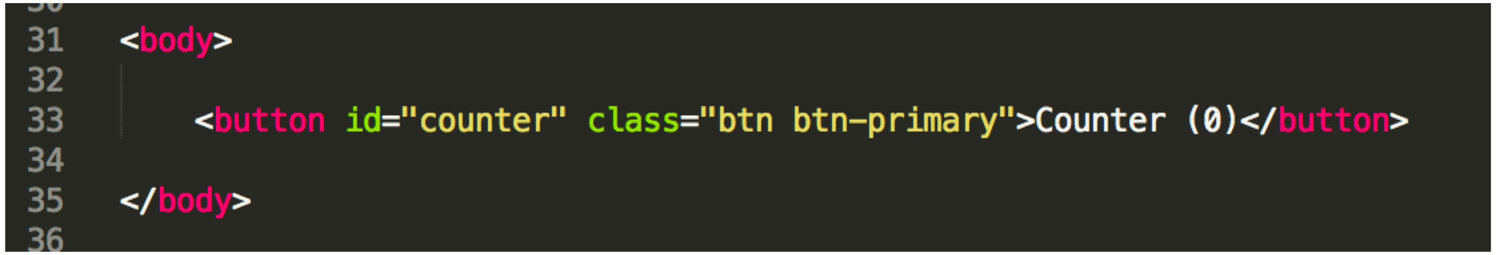
Move Tunnel Click

Move Tunnel Click

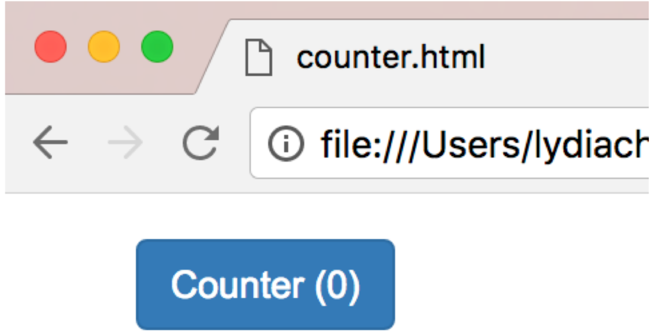
TypeTypeTypeType

Creating Interactions on the web

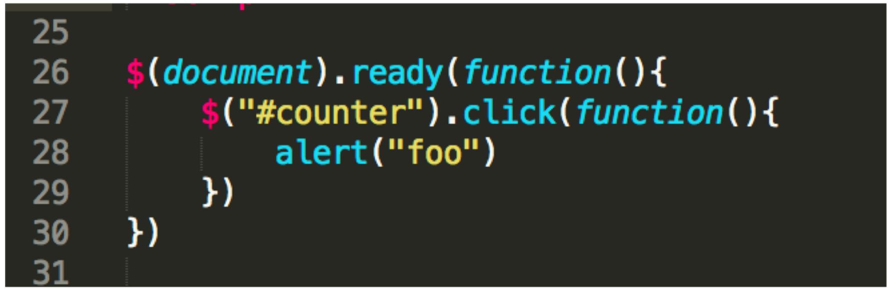
Program the interface and style in HTML & CSS



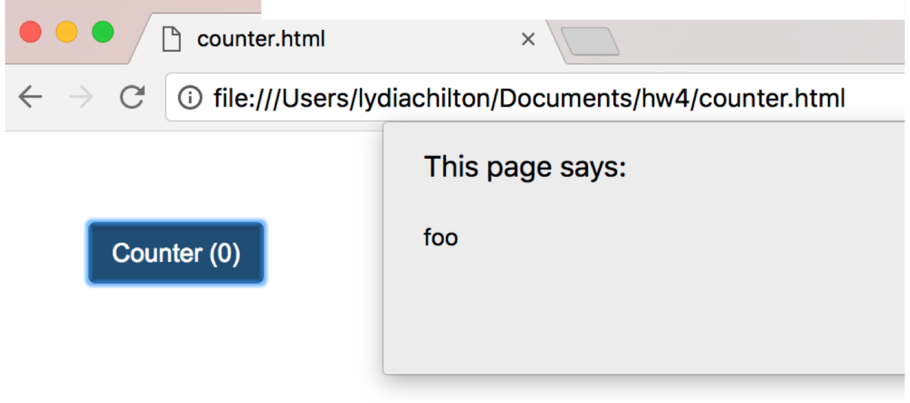
```
<body>

    <button id="counter" class="btn btn-primary">Counter (0)</button>

</body>
```



Program interactions is JavaScript



```
$(document).ready(function(){
    $("#counter").click(function(){
        alert("foo")
    })
})
```

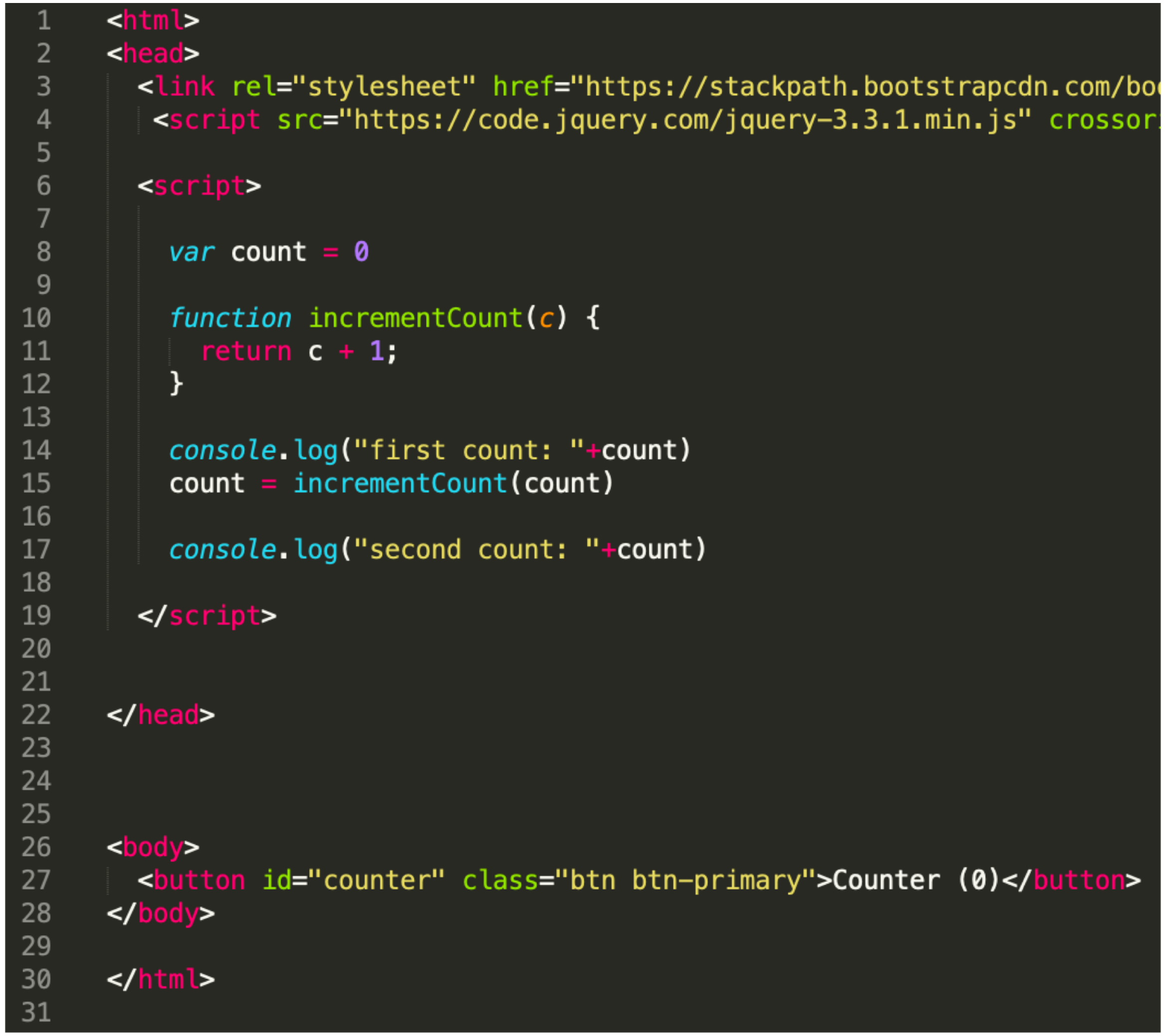


This page says:

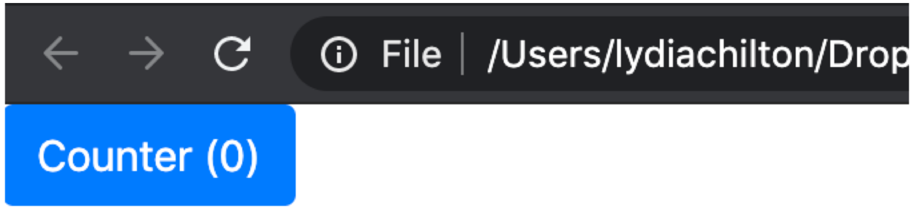
foo

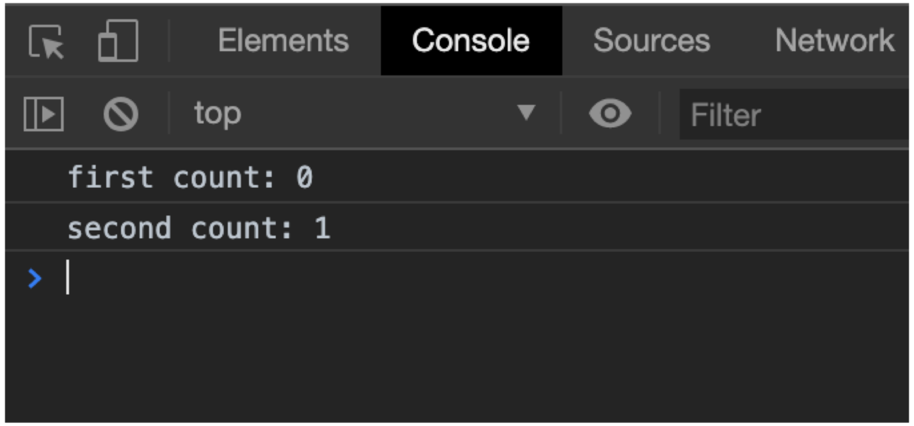
Web Page Execution

Browsers execute an HTML file from top to bottom. What will this execute?



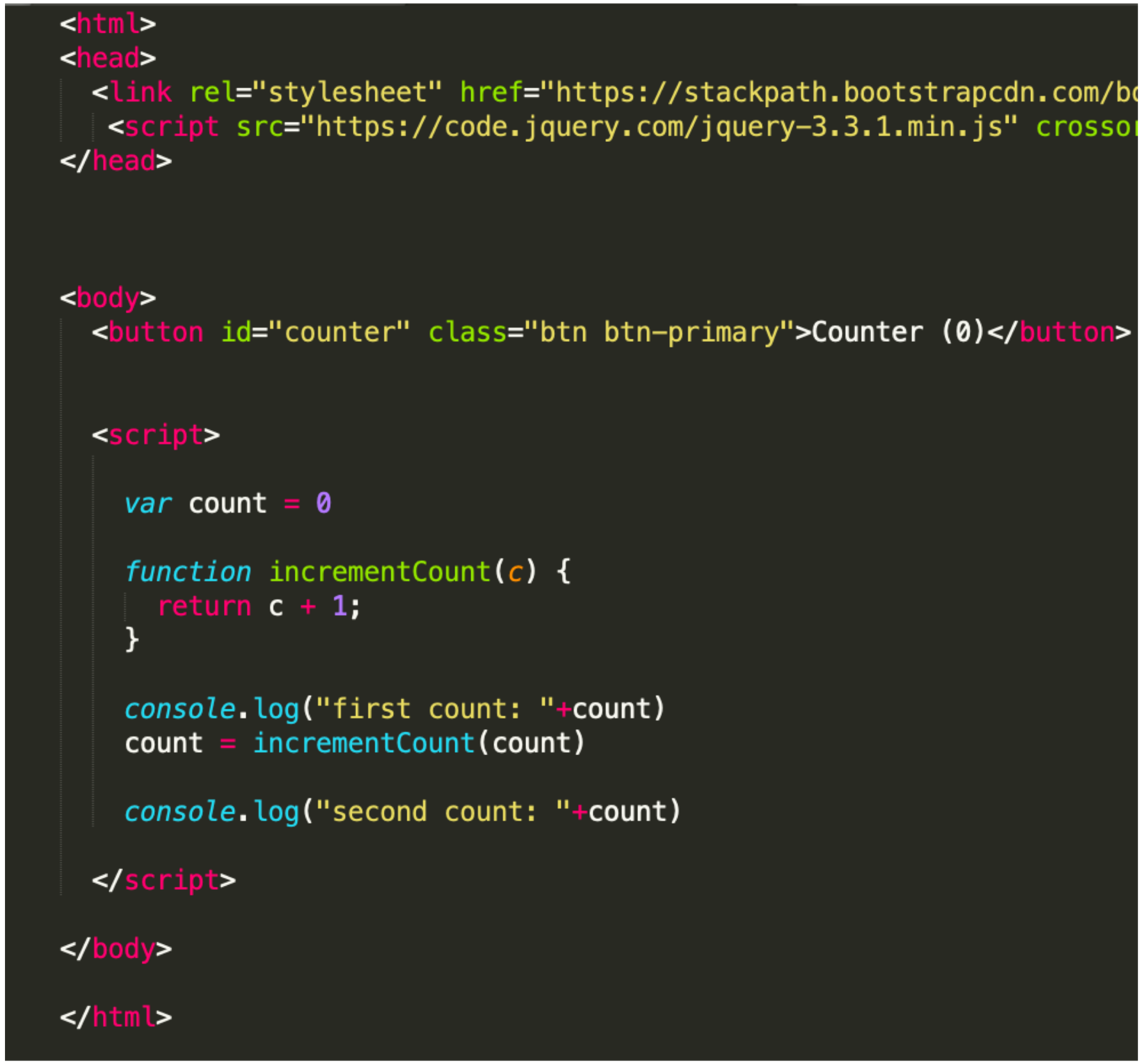
```
<html>
<head>
  <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/boo
   <script src="https://code.jquery.com/jquery-3.3.1.min.js" crossor

  <script>

    var count = 0

    function incrementCount(c) {
      return c + 1;
    }

    console.log("first count: "+count)
    count = incrementCount(count)

    console.log("second count: "+count)

  </script>


</head>



<body>
  <button id="counter" class="btn btn-primary">Counter (0)</button>
</body>

</html>

```



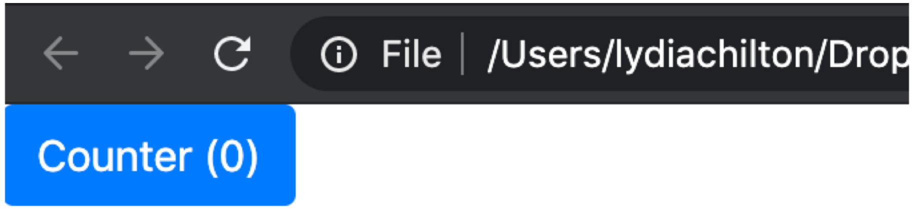


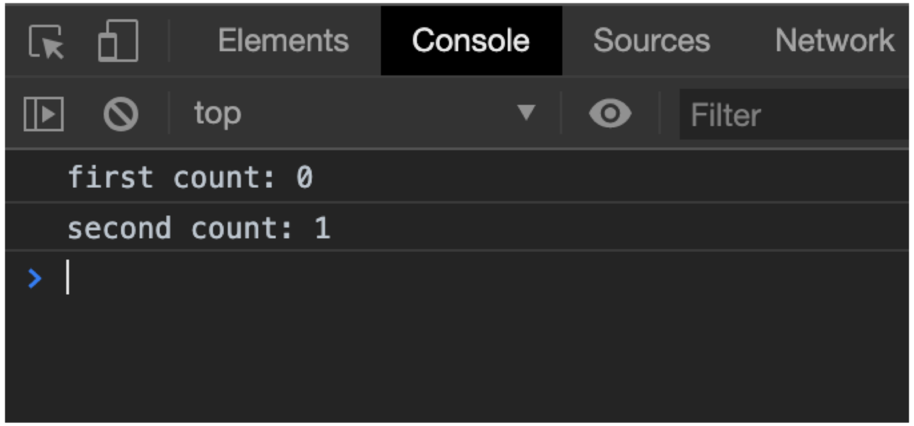
```
first count: 0
second count: 1
>
```

Browser execute HTML files from top to bottom. What will this execute?



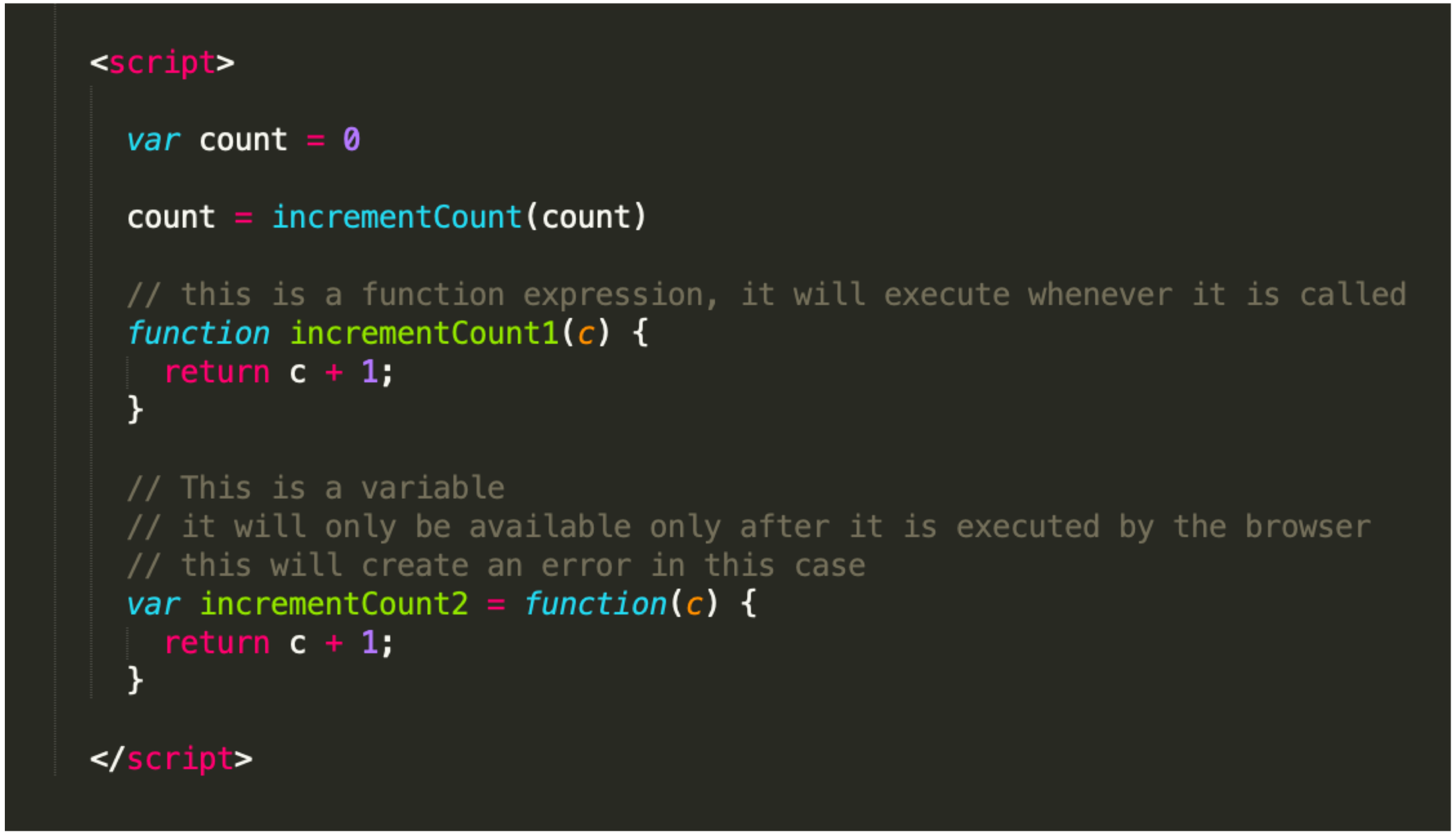
```
<html>
<head>
  <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bo
   <script src="https://code.jquery.com/jquery-3.3.1.min.js" crosso
</head>



<body>
  <button id="counter" class="btn btn-primary">Counter (0)</button>


  <script>

    var count = 0

    function incrementCount(c) {
      return c + 1;
    }

    console.log("first count: "+count)
    count = incrementCount(count)

    console.log("second count: "+count)

  </script>

</body>

</html>
```





```
first count: 0
second count: 1
>
```

Two ways of declaring functions

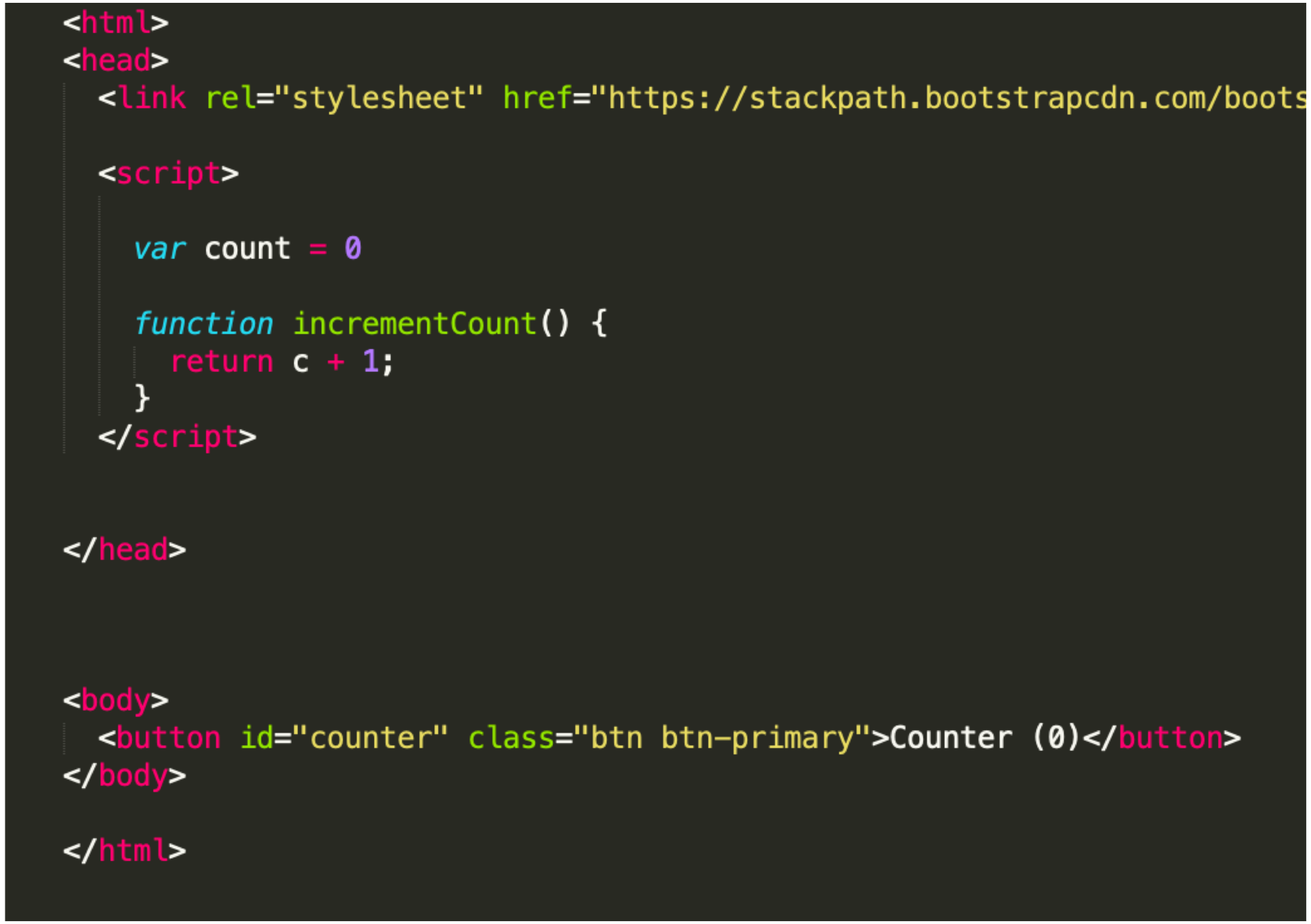


```
<script>

  var count = 0

  count = incrementCount(count)

  // this is a function expression, it will execute whenever it is called
  function incrementCount1(c) {
    return c + 1;
  }

  // This is a variable
  // it will only be available only after it is executed by the browser
  // this will create an error in this case
  var incrementCount2 = function(c) {
    return c + 1;
  }

</script>
```

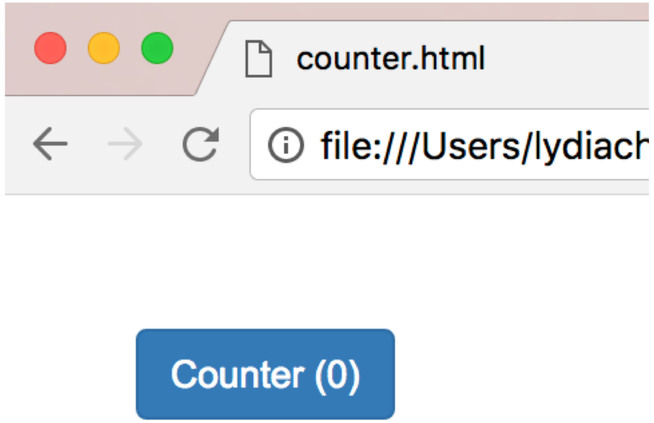
This way will create fewer errors for you

Adding events

When you click this button, what will it do?

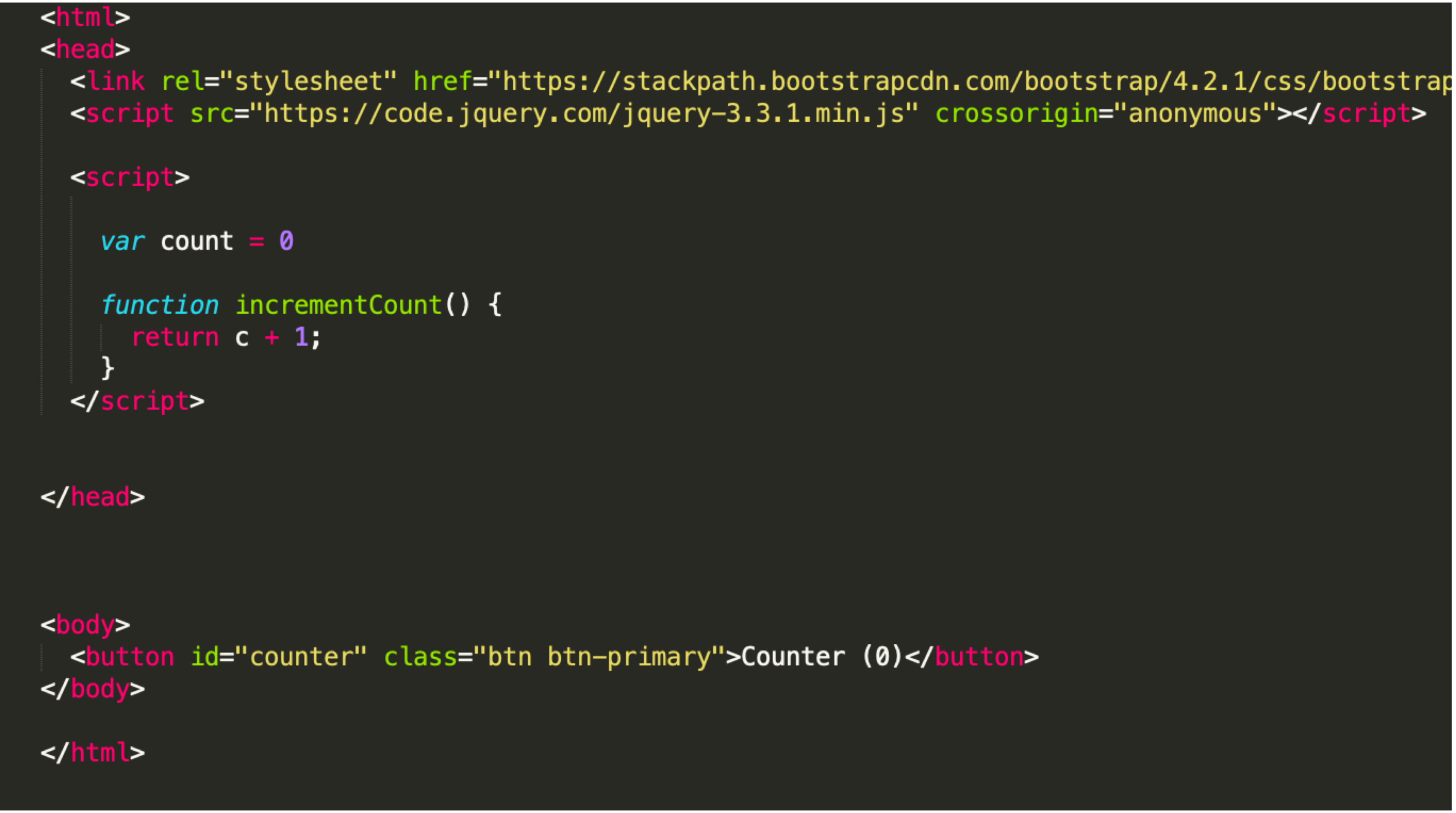


```
<html>
<head>
  <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/boots

  <script>

    var count = 0

    function incrementCount() {
      return c + 1;
    }
  </script>


</head>



<body>
  <button id="counter" class="btn btn-primary">Counter (0)</button>
</body>

</html>
```

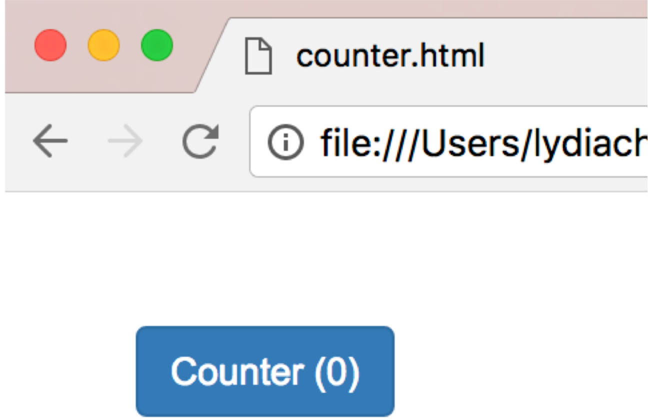


Nothing

After we include JQuery, what will it do?

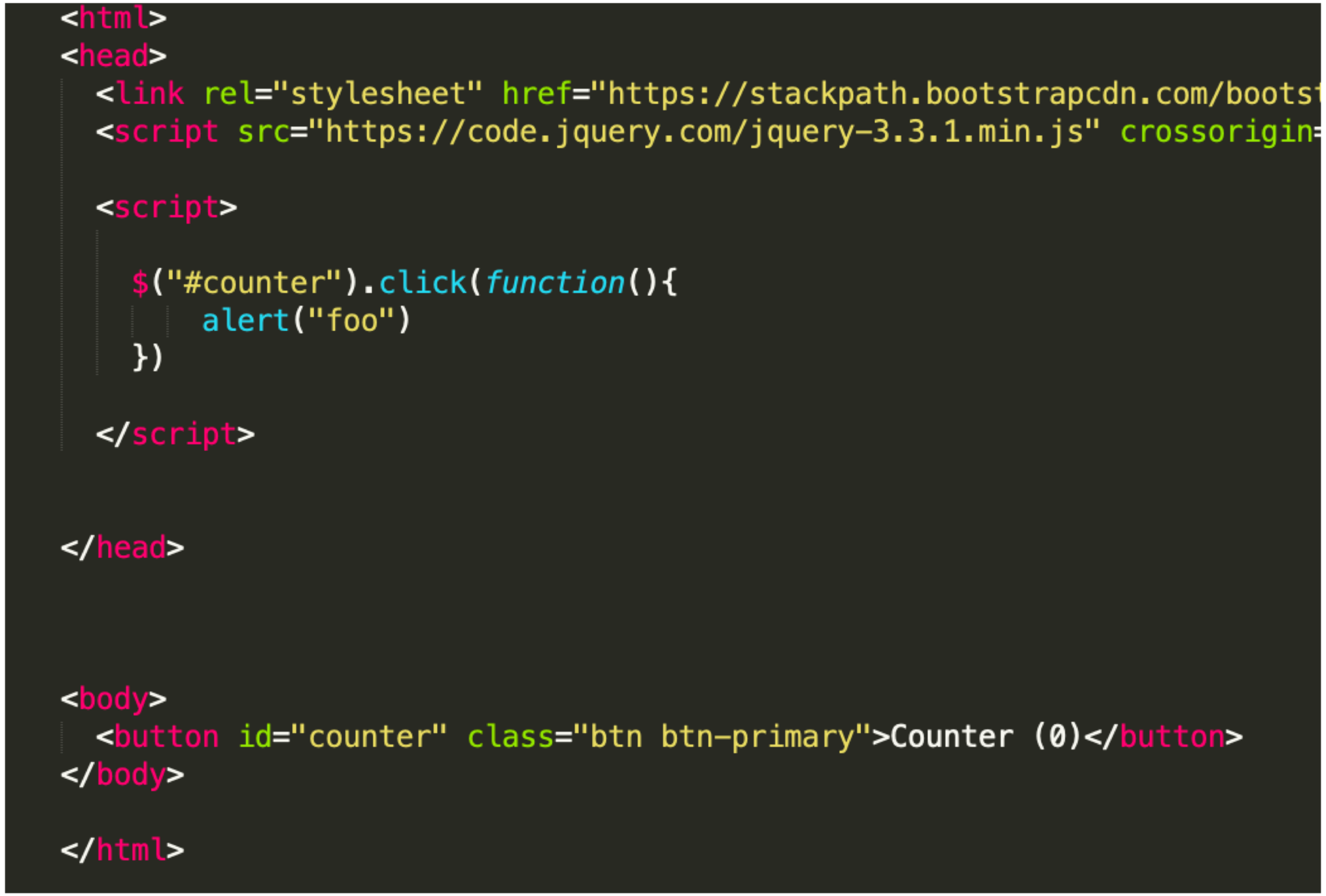


```
<html>
<head>
  <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.2.1/css/bootstrap
  <script src="https://code.jquery.com/jquery-3.3.1.min.js" crossorigin="anonymous"></script>

  <script>

    var count = 0

    function incrementCount() {
      return c + 1;
    }
  </script>


</head>



<body>
  <button id="counter" class="btn btn-primary">Counter (0)</button>
</body>

</html>
```

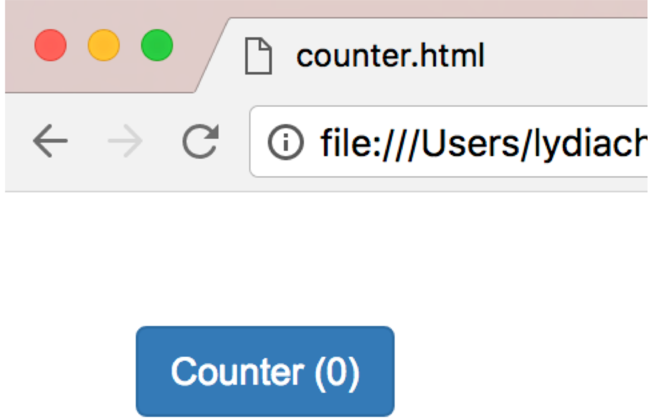


Nothing

If we add an event, what will it do?

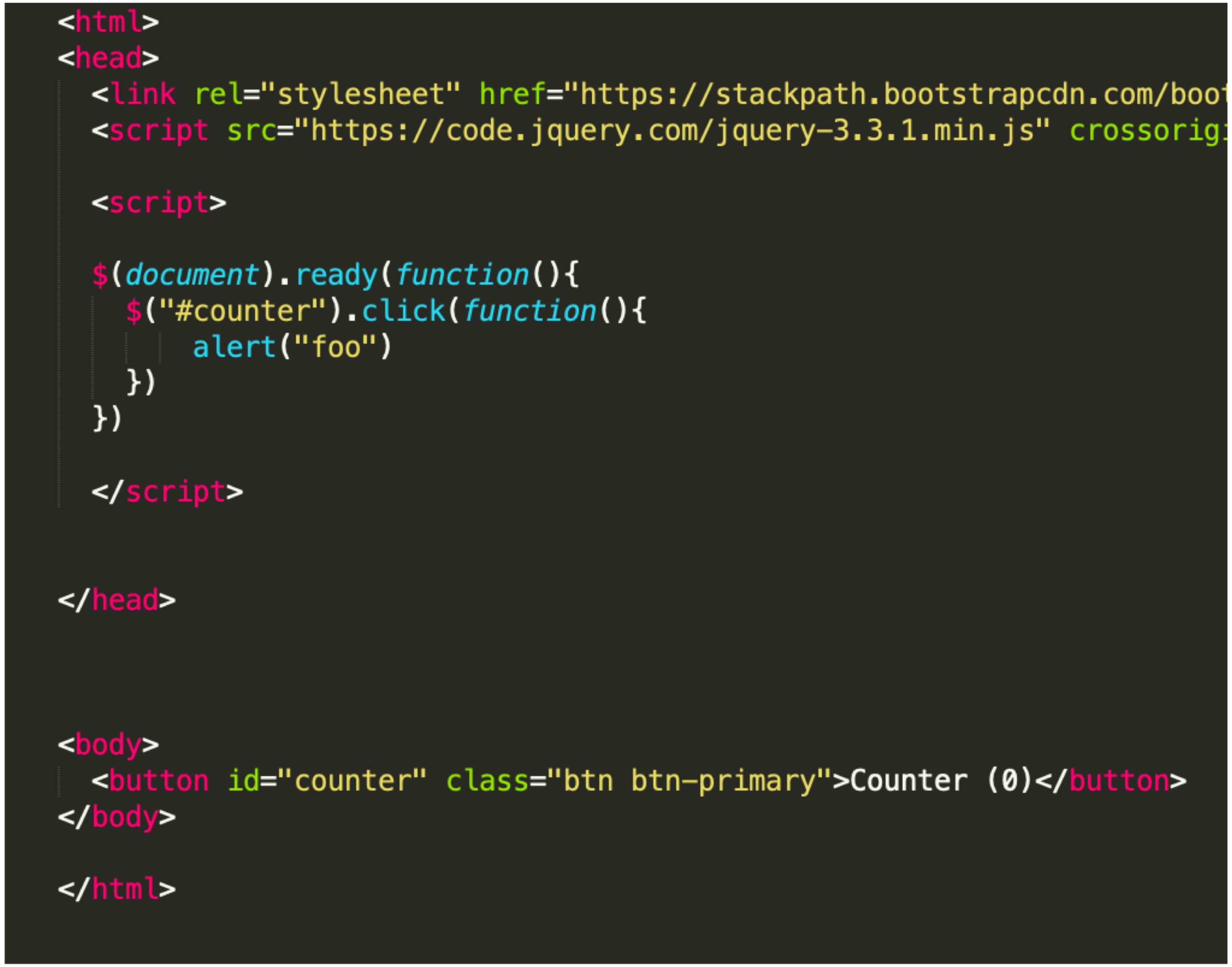


```
<html>
<head>
    <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/boots
    <script src="https://code.jquery.com/jquery-3.3.1.min.js" crossorigin=

    <script>

        $("#counter").click(function(){
            alert("foo")
        })

    </script>


</head>



<body>
    <button id="counter" class="btn btn-primary">Counter (0)</button>
</body>

</html>
```

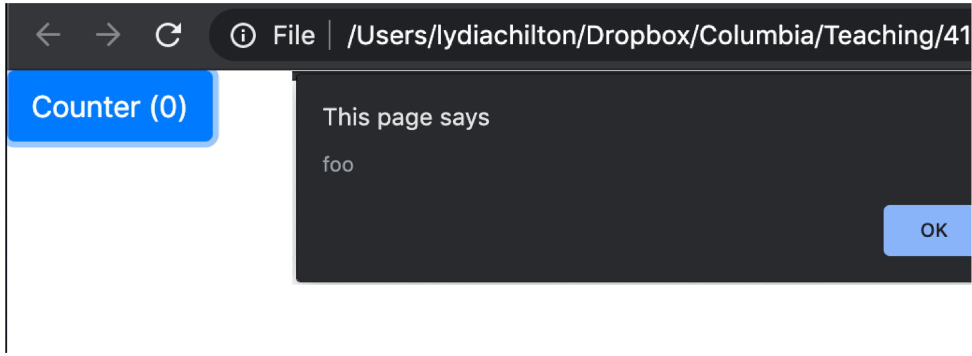


Nothing

If we add an event after the document is loaded, will it finally work??



```
<html>
<head>
  <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/boot
  <script src="https://code.jquery.com/jquery-3.3.1.min.js" crossorig

  <script>

  $(document).ready(function(){
    $("#counter").click(function(){
        alert("foo")
    })
  })

  </script>


</head>



<body>
  <button id="counter" class="btn btn-primary">Counter (0)</button>
</body>

</html>
```



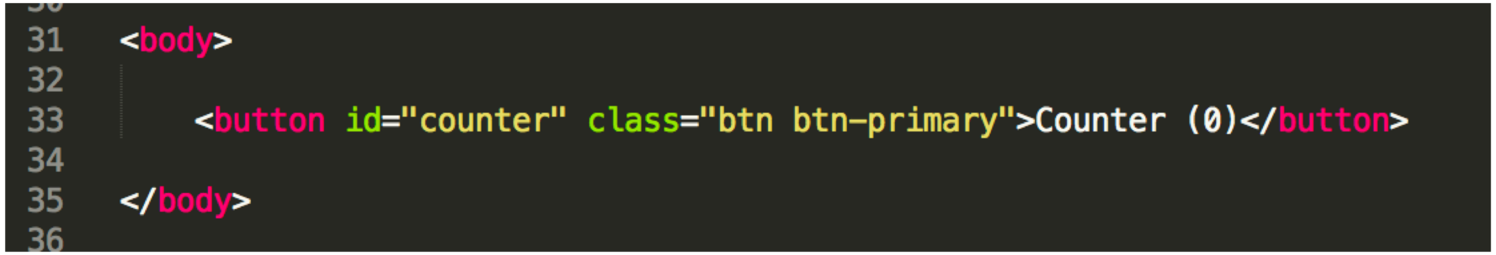
This page says

foo

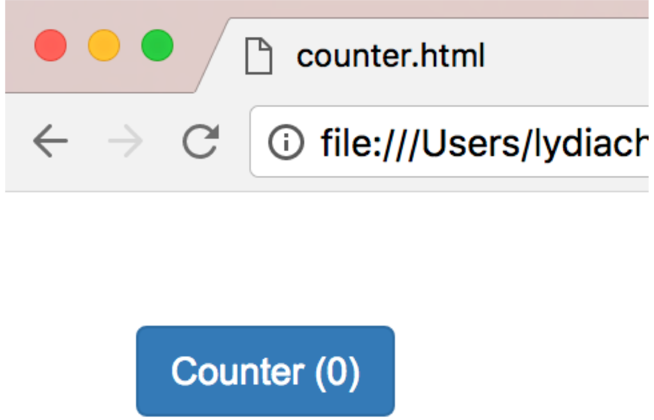
YES!!!!

How do we increment the counter?

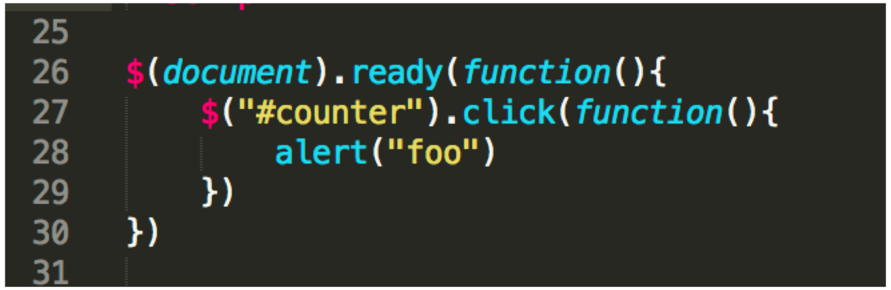
HTML



```
<body>

    <button id="counter" class="btn btn-primary">Counter (0)</button>

</body>
```

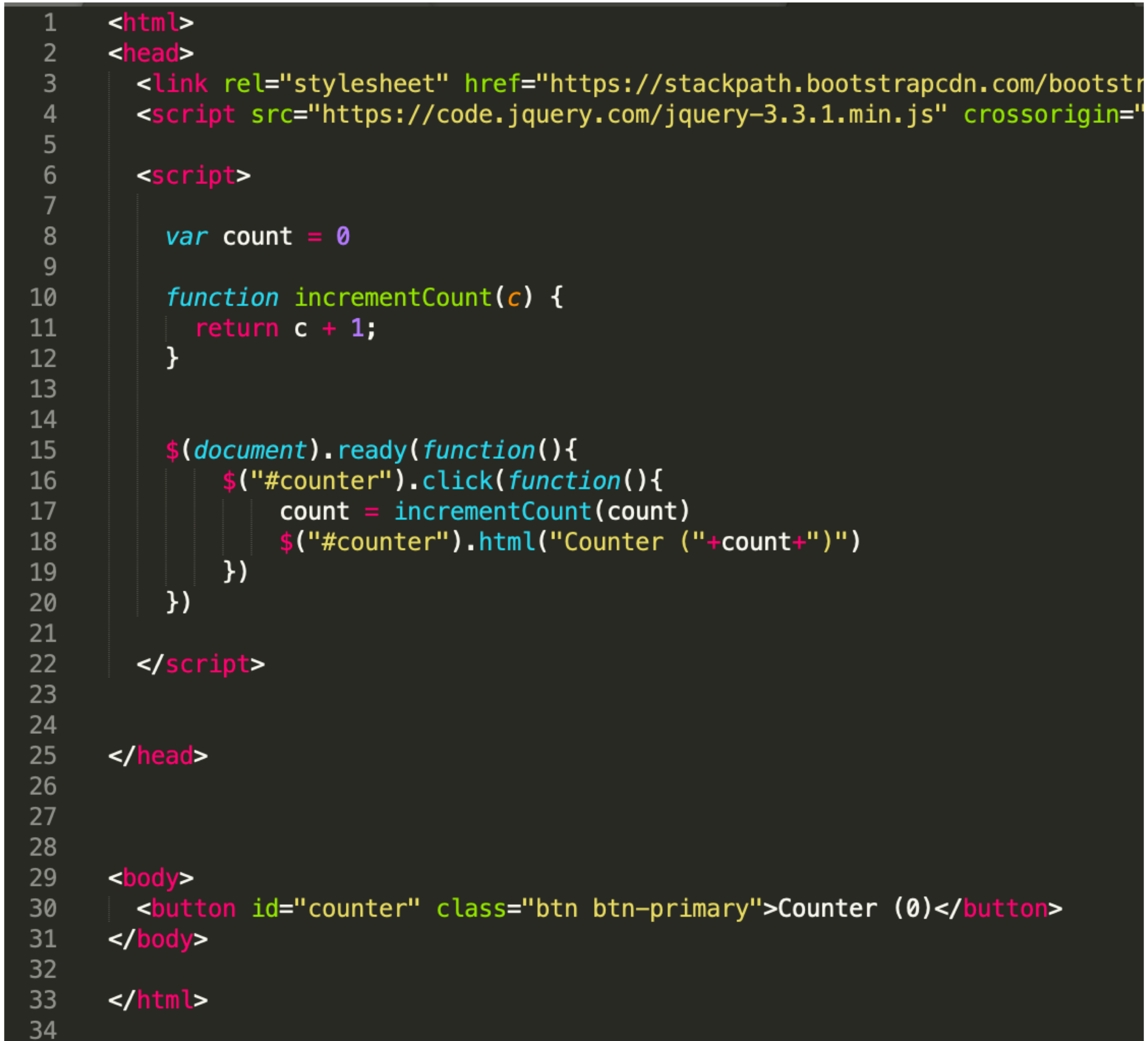


JavaScript

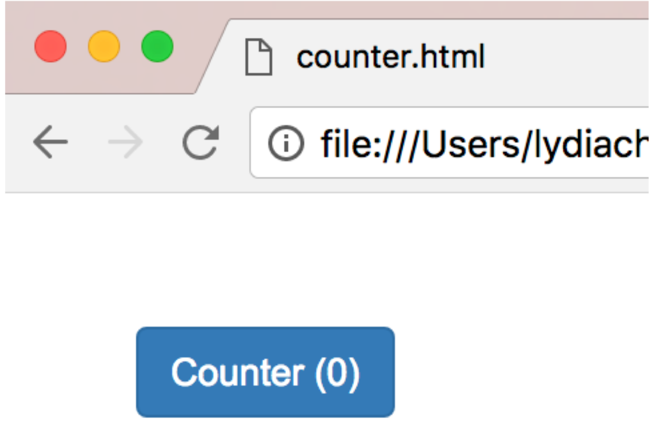


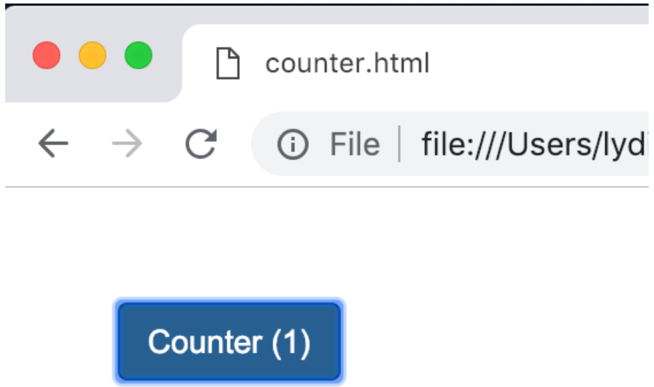
```

$(document).ready(function(){
    $("#counter").click(function(){
        alert("foo")
    })
})

```

How do we increment the count?

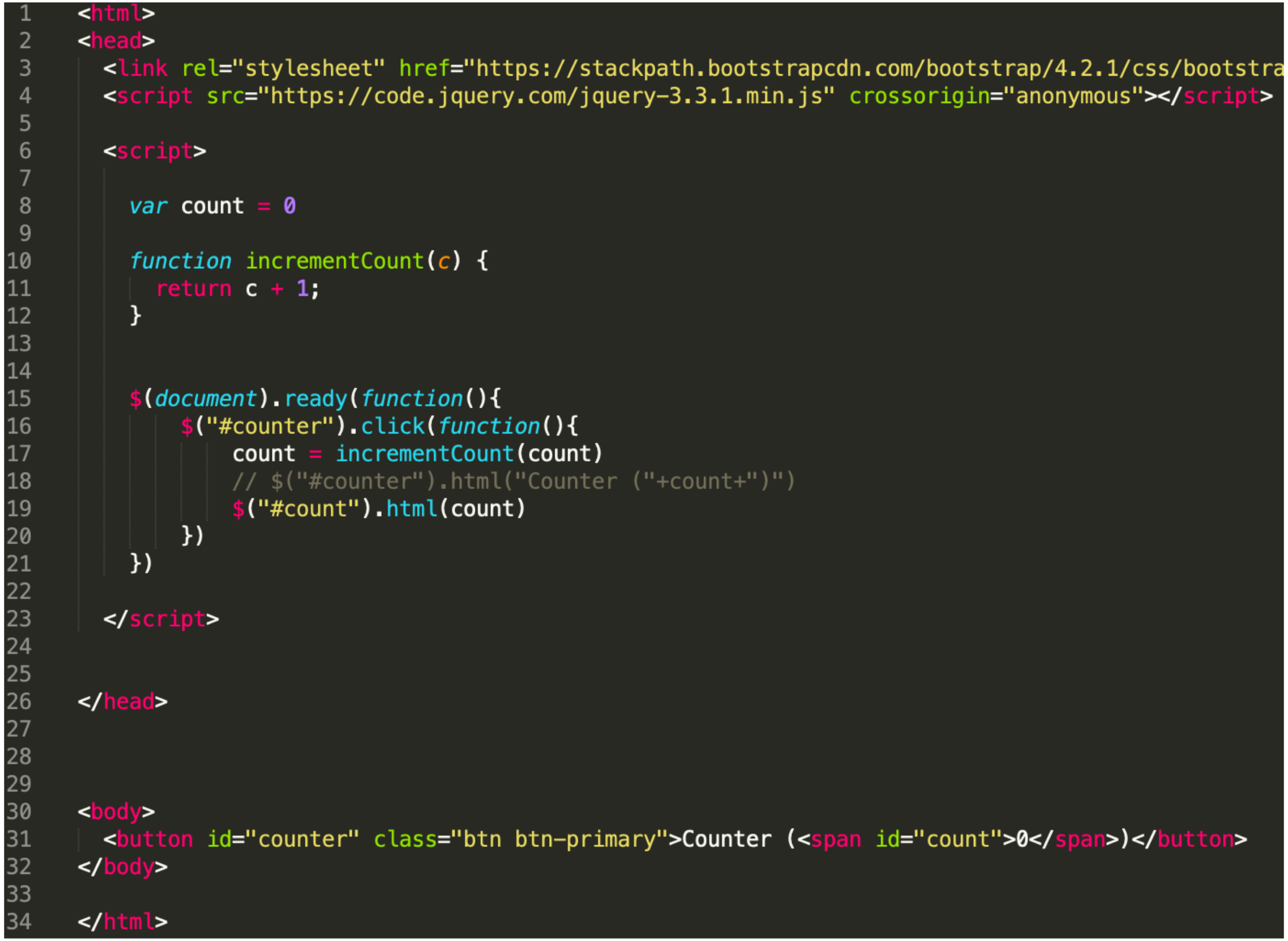


```
<html>
<head>
  <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstr
  <script src="https://code.jquery.com/jquery-3.3.1.min.js" crossorigin="

  <script>

    var count = 0

    function incrementCount(c) {
      return c + 1;
    }


    $(document).ready(function(){
        $("#counter").click(function(){
            count = incrementCount(count)
            $("#counter").html("Counter ("+count+")")
        })
    })

  </script>


</head>



<body>
  <button id="counter" class="btn btn-primary">Counter (0)</button>
</body>

</html>

```





Incrementing the count differently.



```
<html>
<head>
  <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.2.1/css/bootstra
  <script src="https://code.jquery.com/jquery-3.3.1.min.js" crossorigin="anonymous"></script>

  <script>

    var count = 0

    function incrementCount(c) {
      return c + 1;
    }


    $(document).ready(function(){
        $("#counter").click(function(){
            count = incrementCount(count)
            // $("#counter").html("Counter ("+count+")")
            $("#count").html(count)
        })
    })

  </script>


</head>



<body>
  <button id="counter" class="btn btn-primary">Counter (<span id="count">0</span>)</button>
</body>

</html>
```

Jquery vs. Pure JavaScript

JQuery is a JavaScript Library that make JavaScript easier (and standard across browsers)

JavaScript

```
document.getElementById("counter").addEventListener("click", function(){
  document.getElementById("counter").innerHTML = "Counter (0)";
});
```

JQuery

```
$("#counter").click(function(){
  $("#counter").html("Counter (0)");
});
```

What’s the JS equivalent to `$(“#counter”)` ?

JavaScript

```
document.getElementById("counter").addEventListener("click", function(){
  document.getElementById("counter").innerHTML = "Counter (0)";
});
```

JQuery

```
$("#counter").click(function(){
  $("#counter").html("Counter (0)");
});
```

document.getElementById("counter”)

JavaScript

```
document.getElementById("counter").addEventListener("click", function(){
  document.getElementById("counter").innerHTML = "Counter (0)";
});
```

JQuery

```
$("#counter").click(function(){
  $("#counter").html("Counter (0)");
});
```

What’s the JavaScript equivalent of $(element).click(…)

JavaScript

```
document.getElementById("counter").addEventListener("click", function(){
  document.getElementById("counter").innerHTML = "Counter (0)";
});
```

JQuery

```
$("#counter").click(function(){
  $("#counter").html("Counter (0)");
});
```

We used $(“#counter”) again…
Is that normal?

JavaScript

```
document.getElementById("counter").addEventListener("click", function(){
  document.getElementById("counter").innerHTML = "Counter (0)";
});
```

JQuery

```
$("#counter").click(function(){
  $("#counter").html("Counter (0)");
});
```

What’s the JavaScript equivalent of setting html?

JavaScript

```
document.getElementById("counter").addEventListener("click", function(){
  document.getElementById("counter").innerHTML = "Counter (0)";
});
```

JQuery

```
$("#counter").click(function(){
  $("#counter").html("Counter (0)");
});
```

Will this work?

JavaScript JQuery

```
document.getElementById("counter").click(function(){
  document.getElementById("counter").innerHTML = "Counter (0)";
});
```

No.

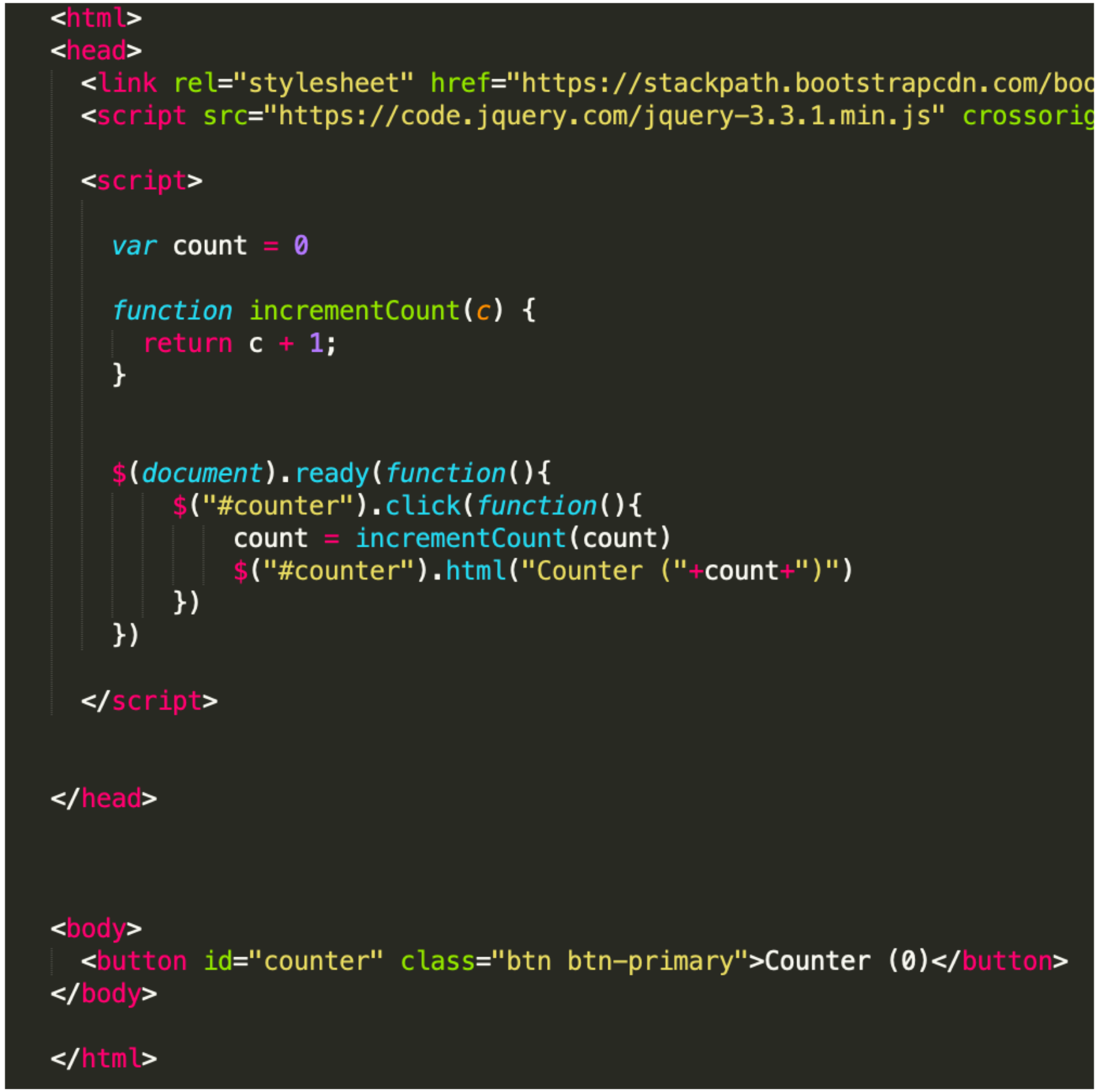
Don’t mix pure JavaScript with JQuery in the same line.

For your own sanity. Only use JQuery

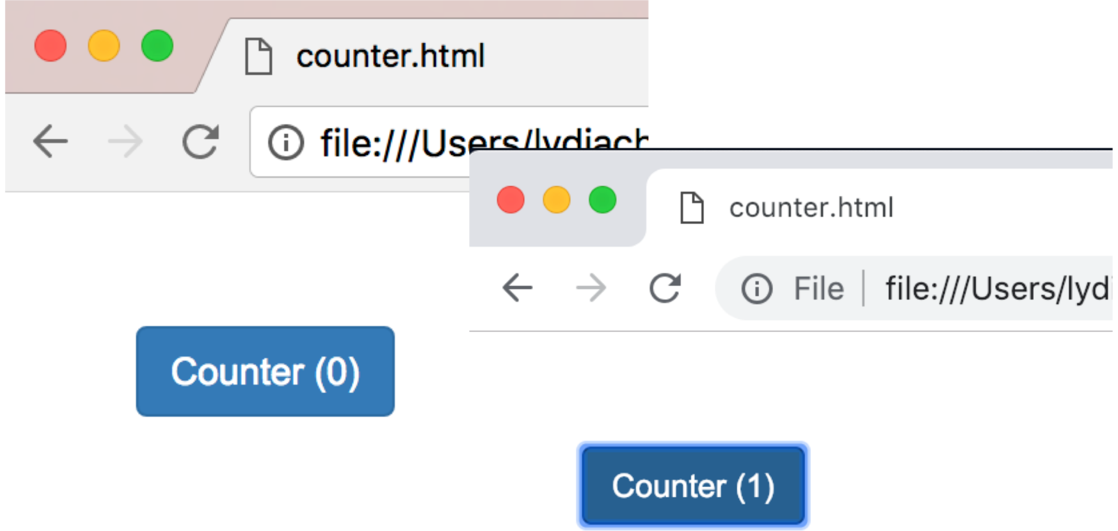
Don’t do this (even though it will work)

```
<button onclick="myFunction()">Click me</button>


<button onclick=“incrementCount(1)">Counter (1)</button>
```

Good style of attaching events in JQuery



```
<html>
<head>
 <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/boo
 <script src="https://code.jquery.com/jquery-3.3.1.min.js" crossorig

 <script>

  var count = 0

  function incrementCount(c) {
   return c + 1;
  }


  $(document).ready(function(){
    $("#counter").click(function(){
      count = incrementCount(count)
      $("#counter").html("Counter ("+count+")")
    })
  })

 </script>


</head>



<body>
 <button id="counter" class="btn btn-primary">Counter (0)</button>
</body>

</html>
```



1. Uses Jquery (not pure JavaScript)

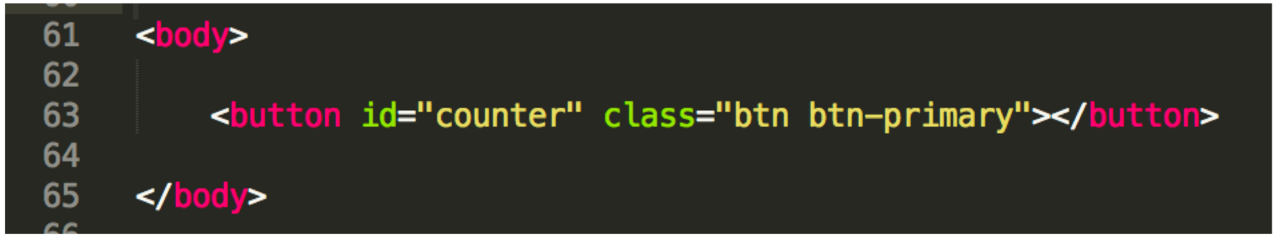
2. Attaches click handler as in the <script>
$(element).click(…)
(doesn’t attach in HTML)

2. Uses `$(document).ready(…)`

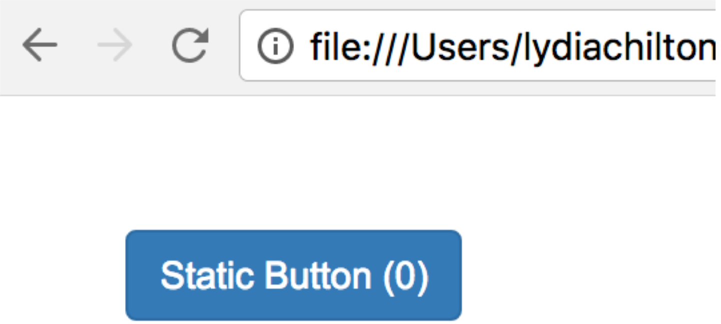
Creating Widgets Dynamically

Statically created widget: created on page load.

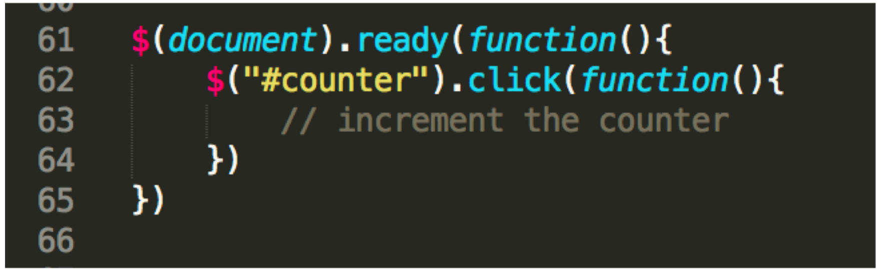
HTML



```
<body>

    <button id="counter" class="btn btn-primary"></button>

</body>
```



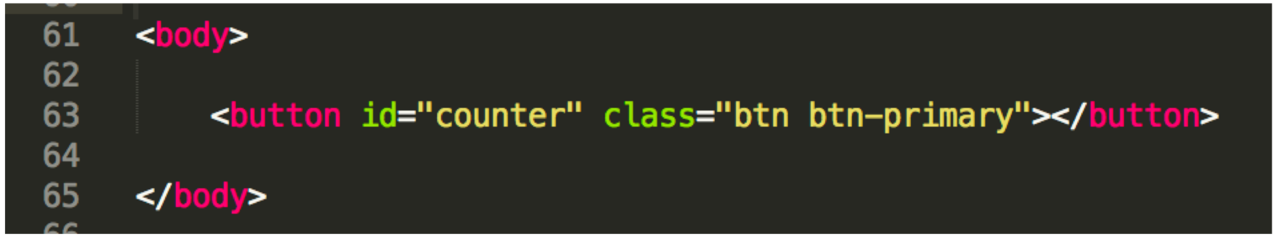
JavaScript



```
$(document).ready(function(){
    $("#counter").click(function(){
        // increment the counter
    })
})
```

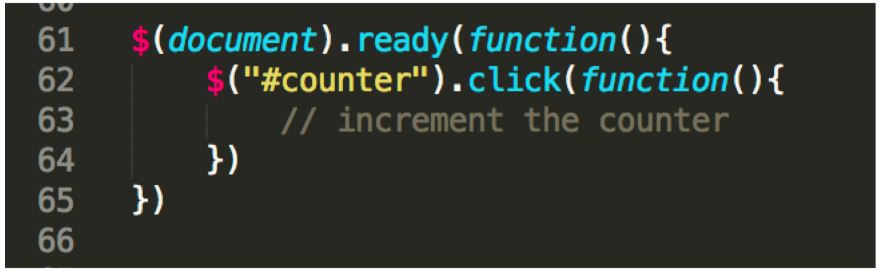
Dynamically created widget:
created on demand based on user interaction.

HTML

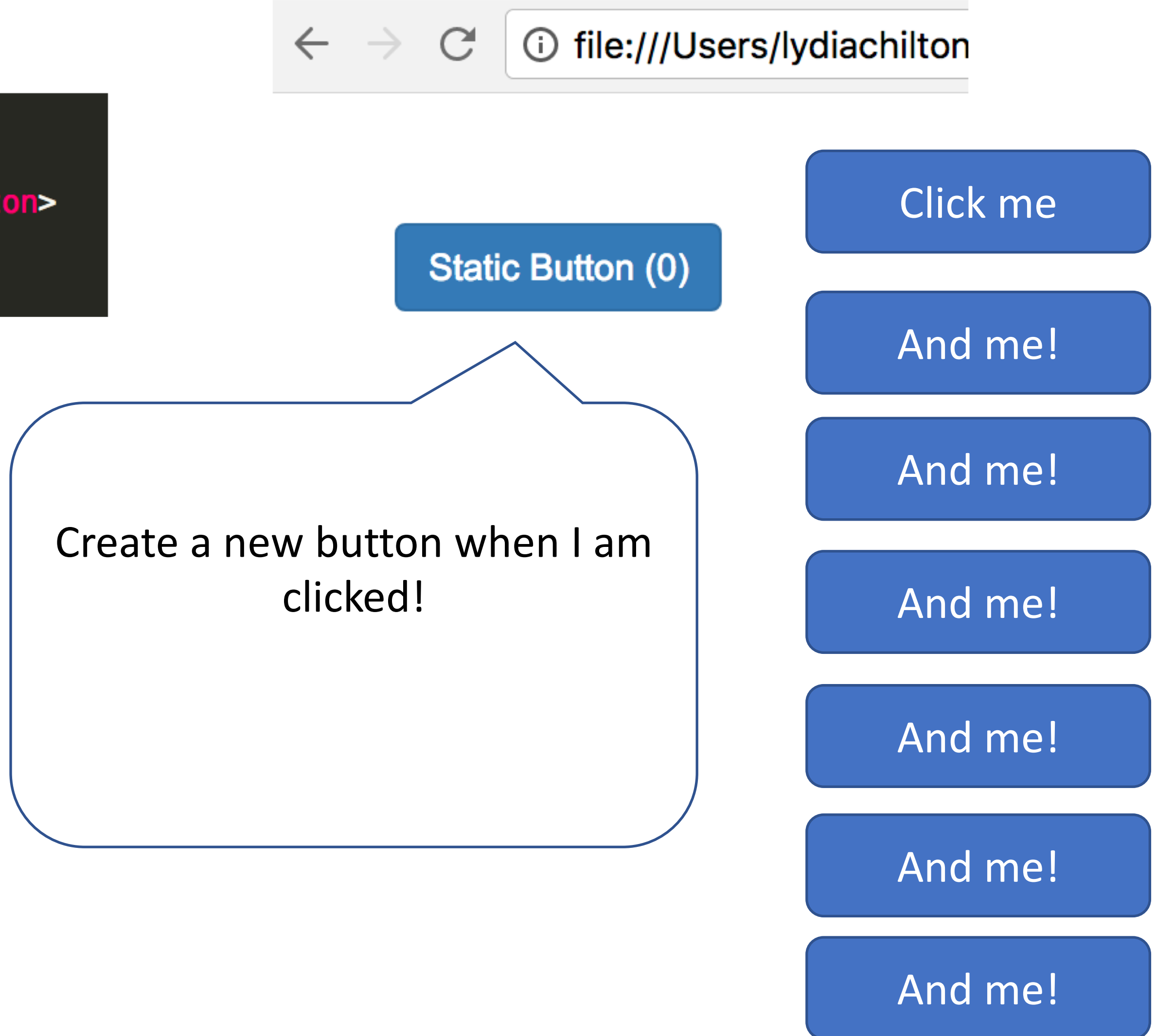


```
<body>

    <button id="counter" class="btn btn-primary"></button>

</body>
```

JavaScript



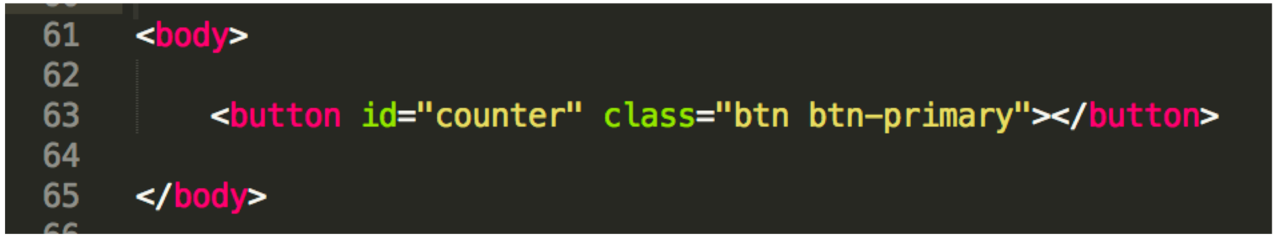
```
$(document).ready(function(){
    $("#counter").click(function(){
        // increment the counter
    })
})
```



Create a new button when I am clicked!

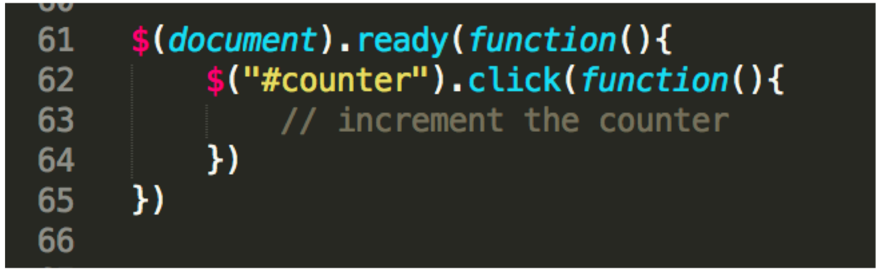
Where in the code should we add the dynamic behavior?

HTML

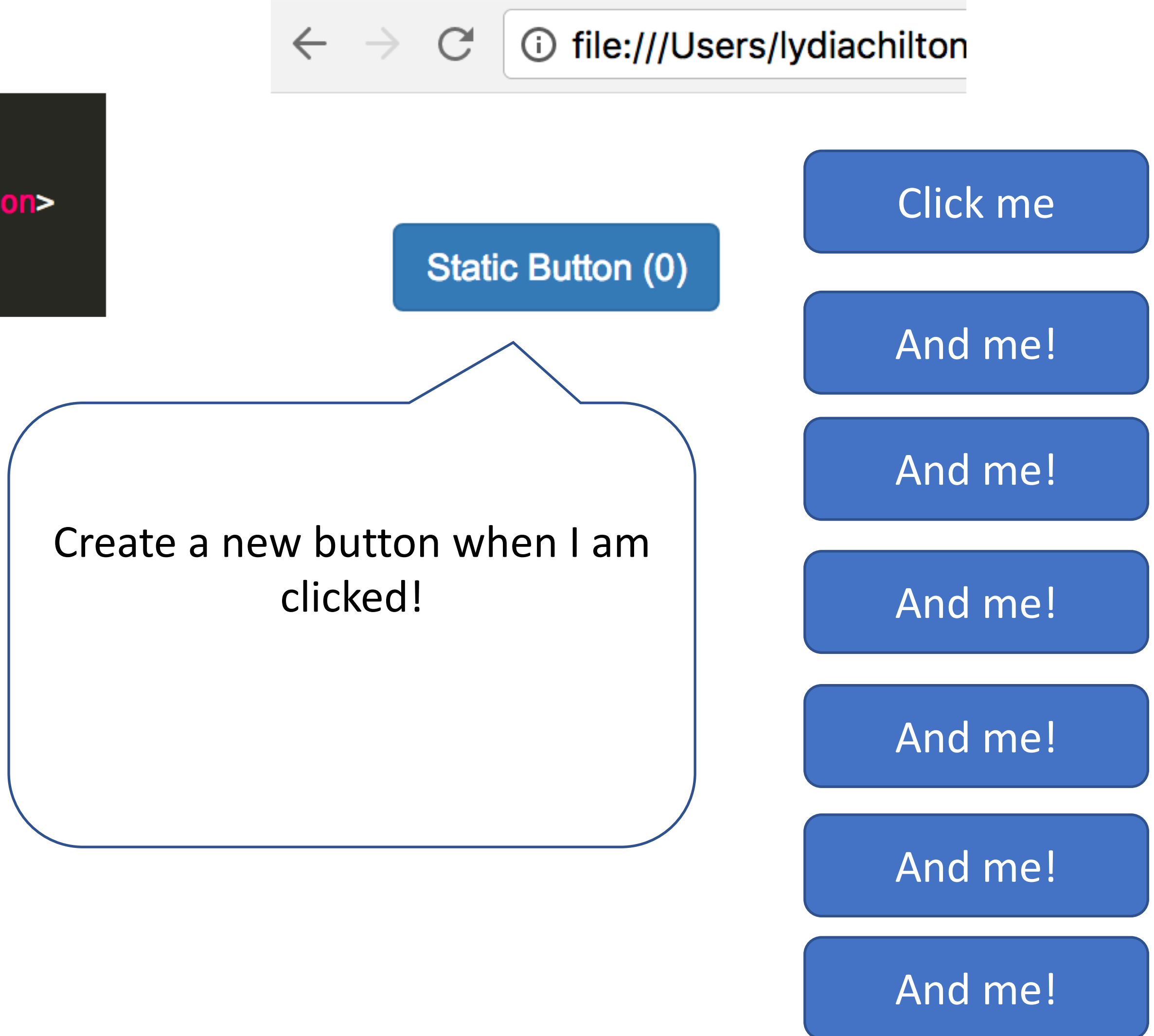


```html
<body>

    <button id="counter" class="btn btn-primary"></button>

</body>
```

JavaScript



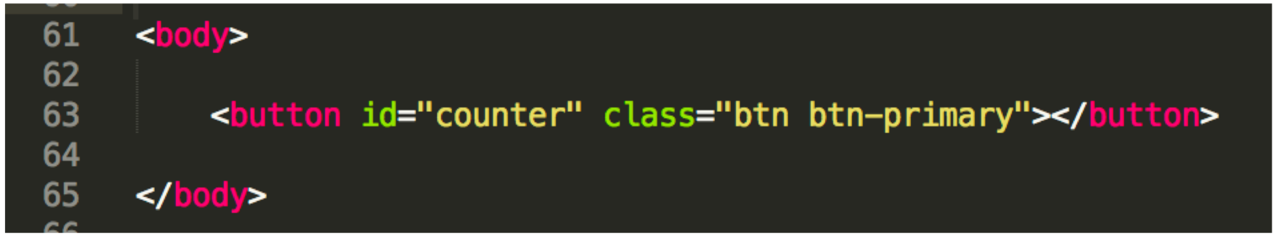
```javascript
$(document).ready(function(){
    $("#counter").click(function(){
        // increment the counter
    })
})
```



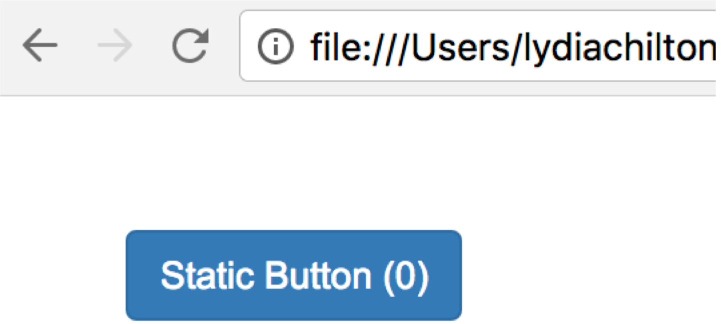
Create a new button when I am clicked!

How did we create the button in JavaScript?

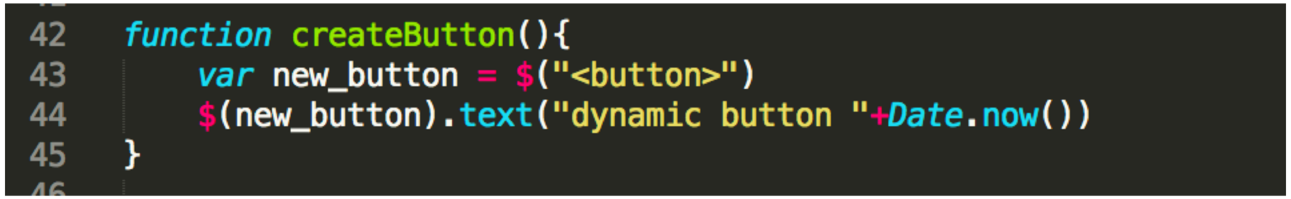
HTML



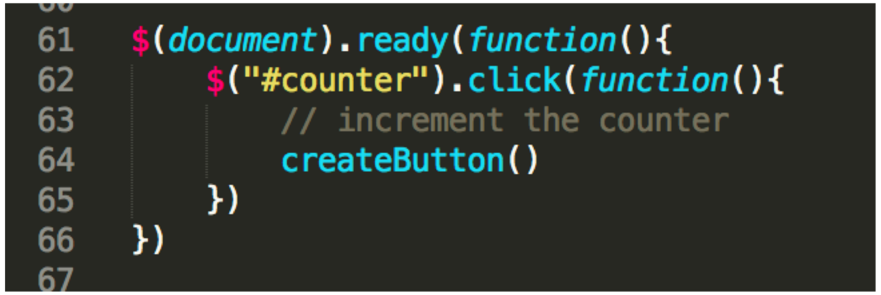
```
<body>

    <button id="counter" class="btn btn-primary"></button>

</body>
```



JavaScript



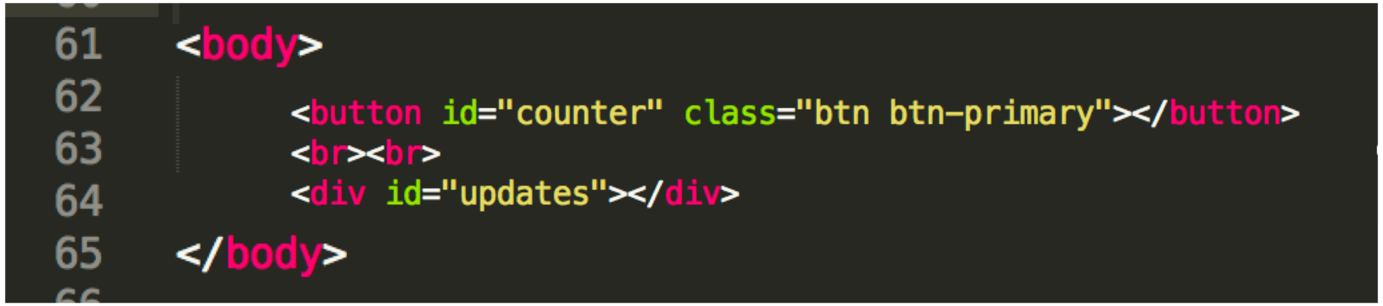
```
function createButton(){
    var new_button = $("<button>")
    $(new_button).text("dynamic button "+Date.now())
}
```



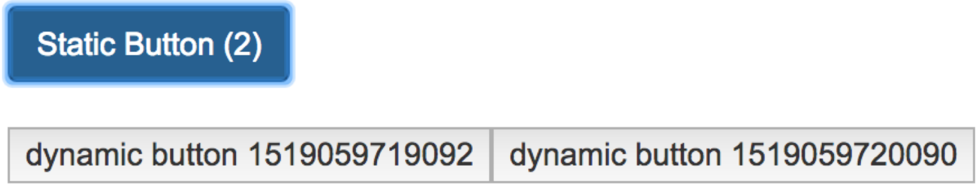
```
$(document).ready(function(){
    $("#counter").click(function(){
        // increment the counter
        createButton()
    })
})
```

Add widget to UI dynamically

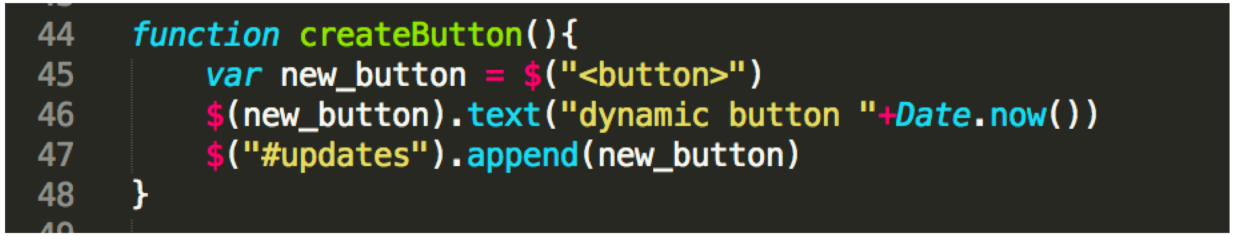
HTML



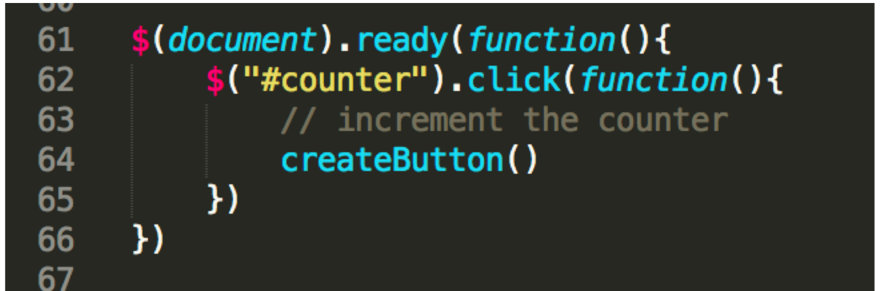
```html
<body>
        <button id="counter" class="btn btn-primary"></button>
        <br><br>
        <div id="updates"></div>
</body>
```



JavaScript



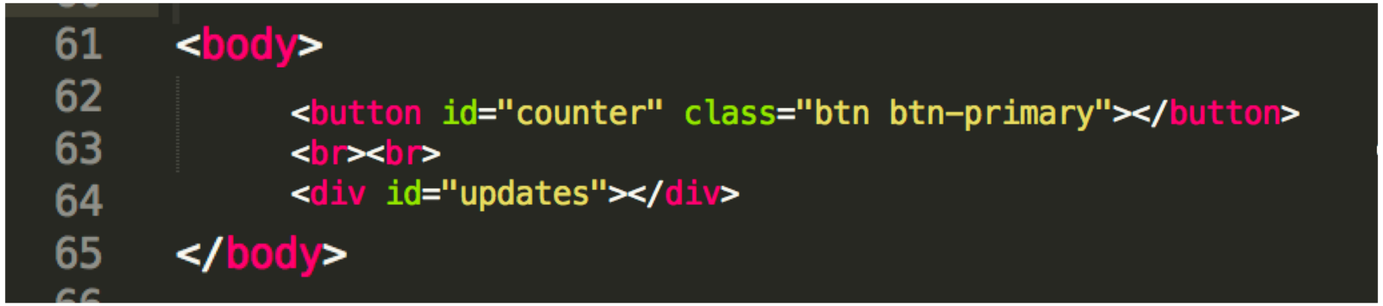
```javascript
function createButton(){
    var new_button = $("<button>")
    $(new_button).text("dynamic button "+Date.now())
    $("#updates").append(new_button)
}
```



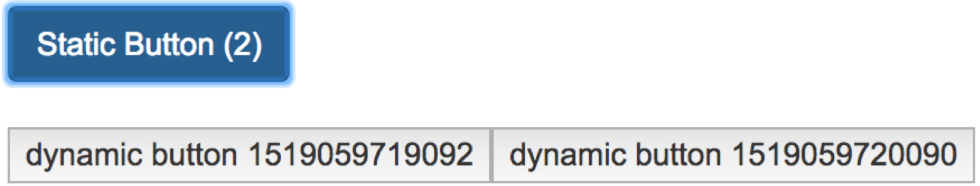
```javascript
$(document).ready(function(){
    $("#counter").click(function(){
        // increment the counter
        createButton()
    })
})
```

Where do we create a line break *dynamically*?

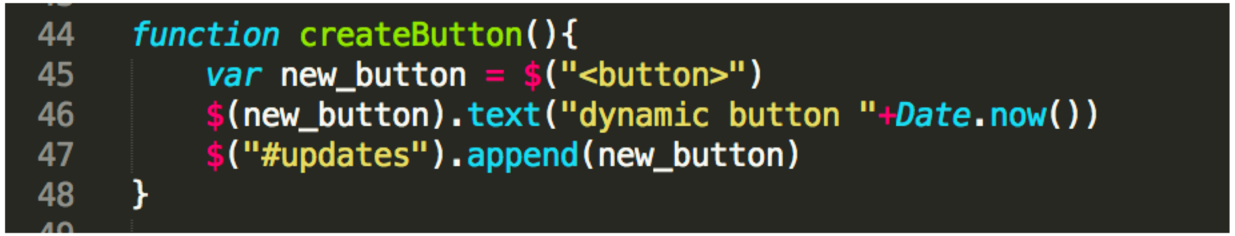
HTML



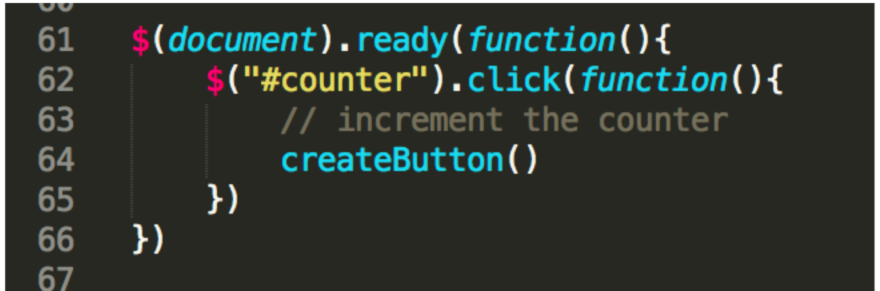
```html
<body>
        <button id="counter" class="btn btn-primary"></button>
        <br><br>
        <div id="updates"></div>
</body>
```



JavaScript



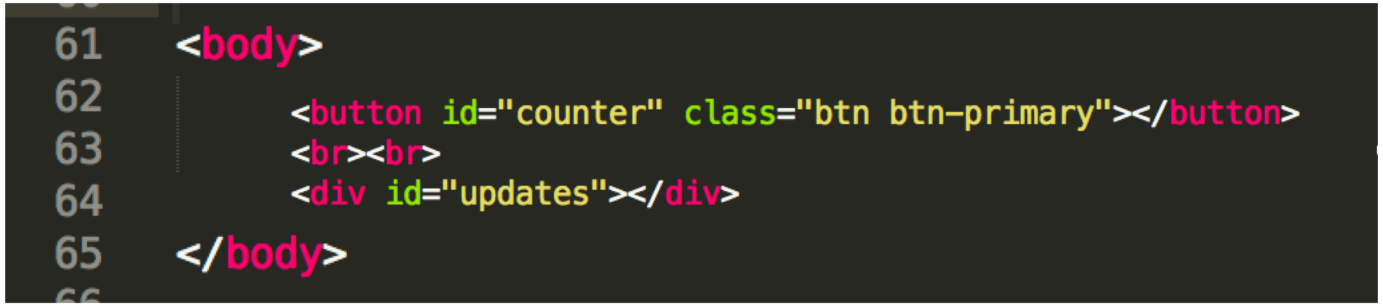
```javascript
function createButton(){
    var new_button = $("<button>")
    $(new_button).text("dynamic button "+Date.now())
    $("#updates").append(new_button)
}
```



```javascript
$(document).ready(function(){
    $("#counter").click(function(){
        // increment the counter
        createButton()
    })
})
```

How do we create a **line break** *dynamically*?

HTML



```
<body>
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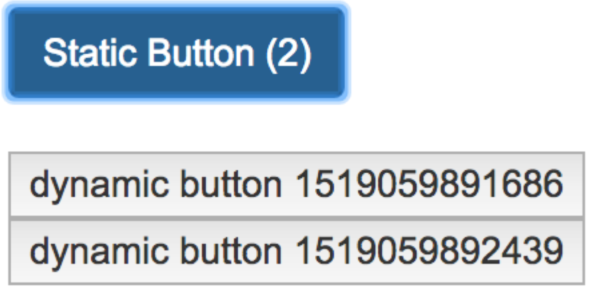
        <br><br>
        <div id="updates"></div>
</body>
```

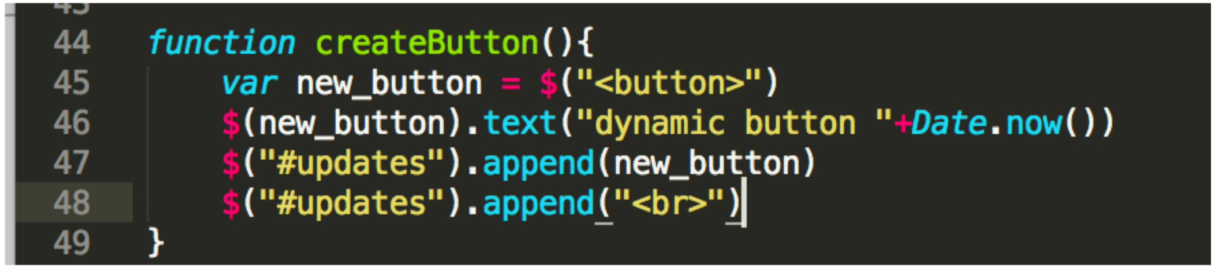


Static Button (2)

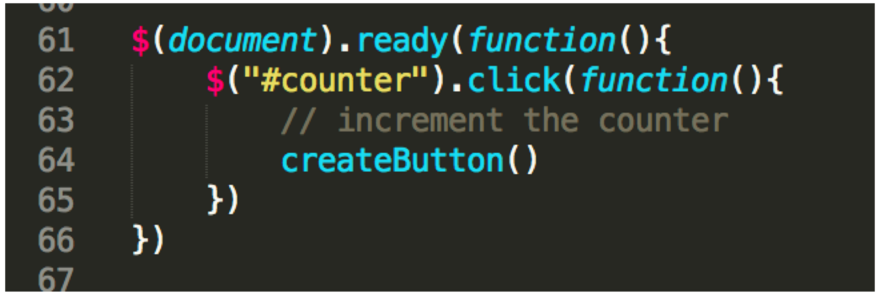
dynamic button 1519059891686

dynamic button 1519059892439

JavaScript



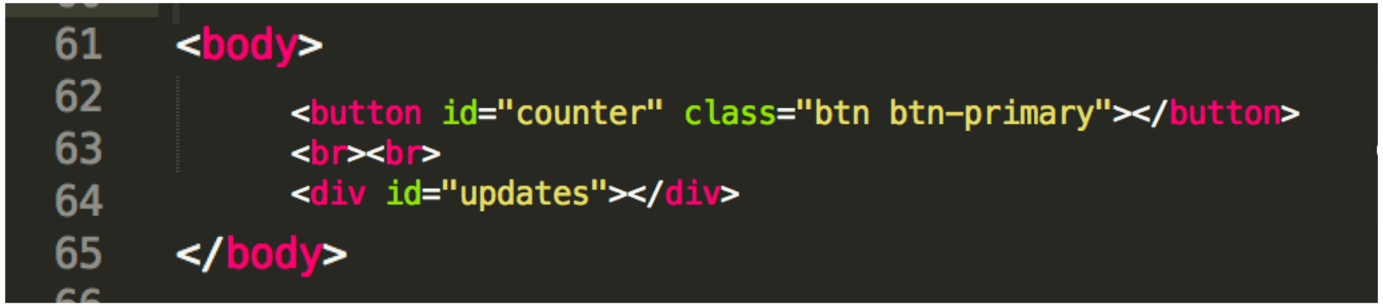
```
function createButton(){
    var new_button = $("<button>")
    $(new_button).text("dynamic button "+Date.now())
    $("#updates").append(new_button)
    $("#updates").append("<br>")
}
```



```
$(document).ready(function(){
    $("#counter").click(function(){
        // increment the counter
        createButton()
    })
})
```

Where do we create a **bootstrap** button dynamically?

HTML



```
<body>
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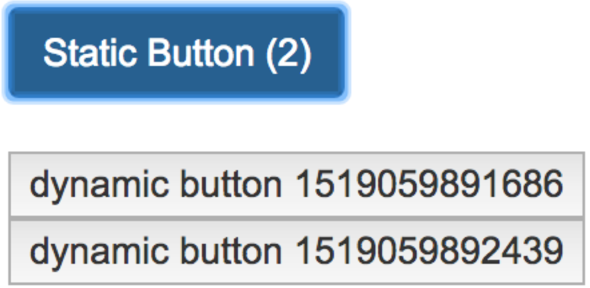
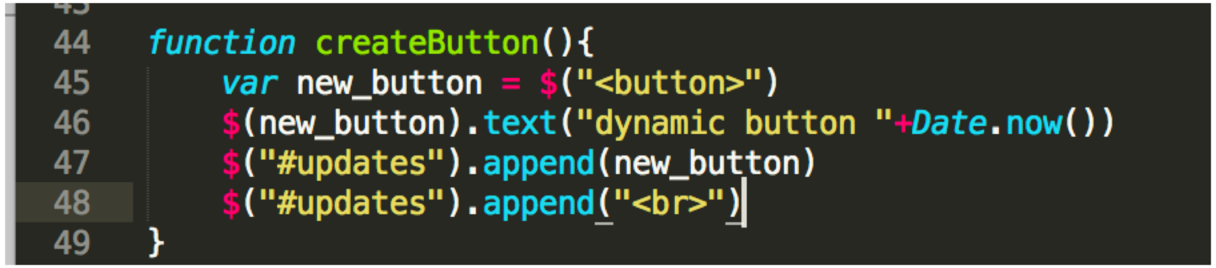
        <br><br>
        <div id="updates"></div>
</body>
```



JavaScript



```
function createButton(){
    var new_button = $("<button>")
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}
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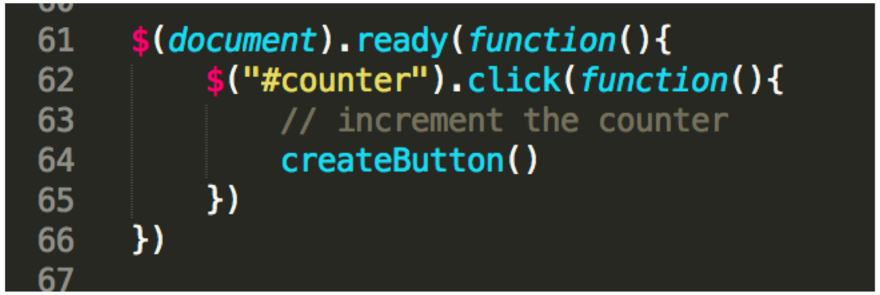

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        createButton()
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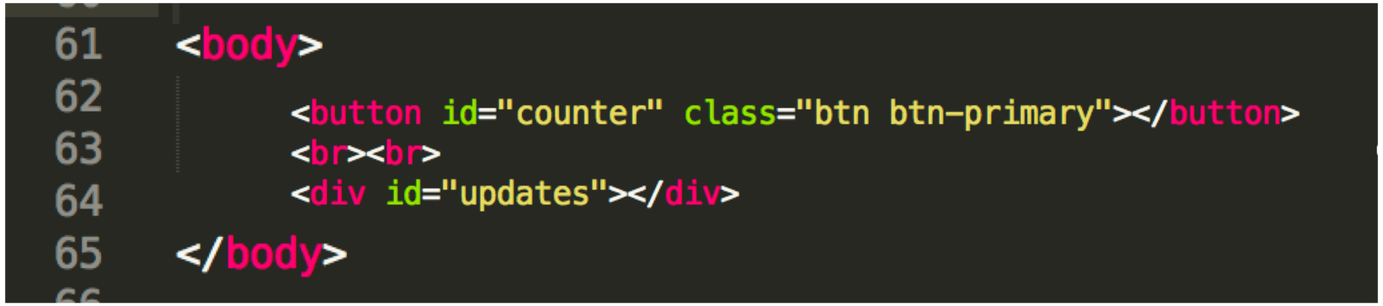
How do we create a **bootstrap** button dynamically?

HTML



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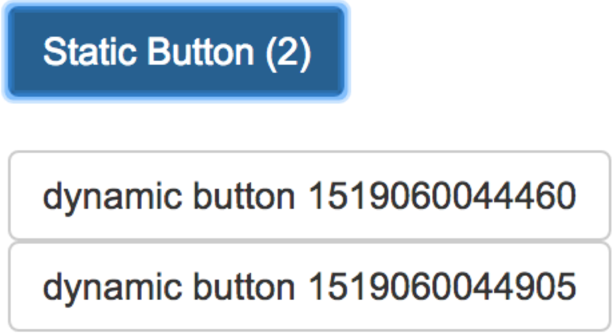
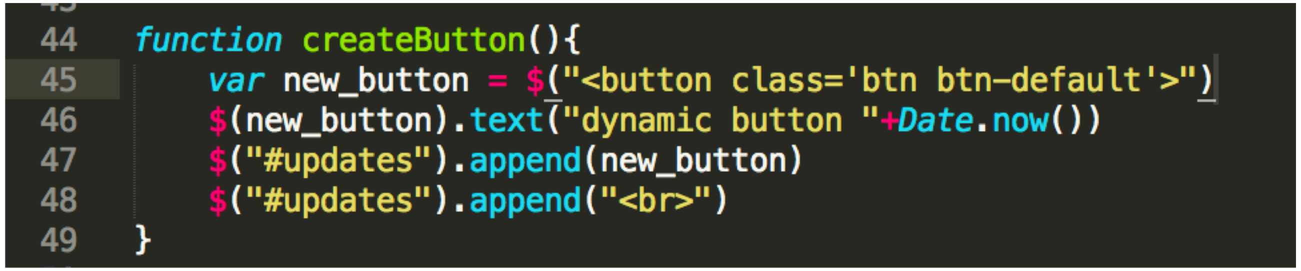
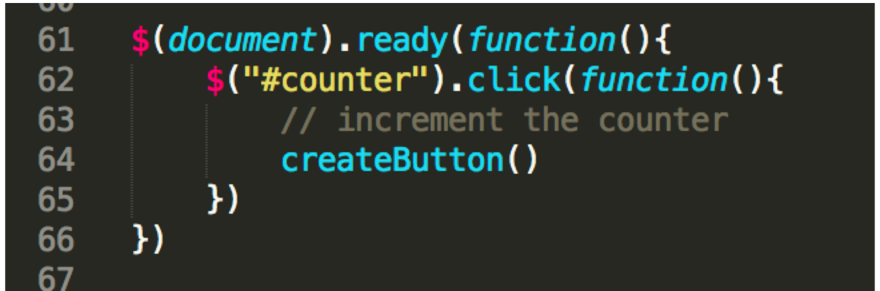


JavaScript



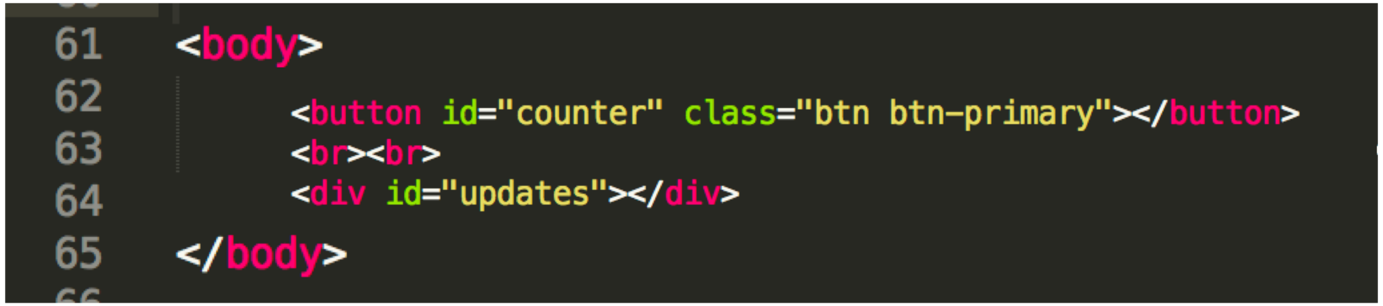
```
function createButton(){
    var new_button = $("<button class='btn btn-default'>")
    $(new_button).text("dynamic button "+Date.now())
    $("#updates").append(new_button)
    $("#updates").append("<br>")
}
```



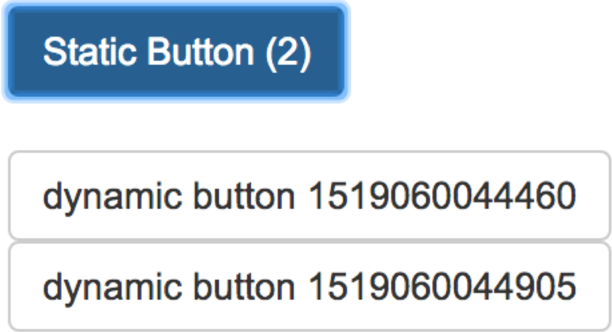
```
$(document).ready(function(){
    $("#counter").click(function(){
        // increment the counter
        createButton()
    })
})
```

Where do we create a click event *dynamically*?

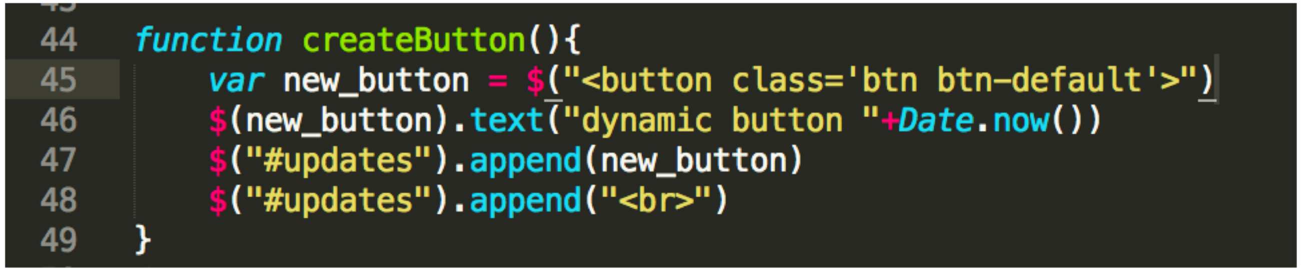
HTML



```html
<body>
        <button id="counter" class="btn btn-primary"></button>
        <br><br>
        <div id="updates"></div>
</body>
```



JavaScript



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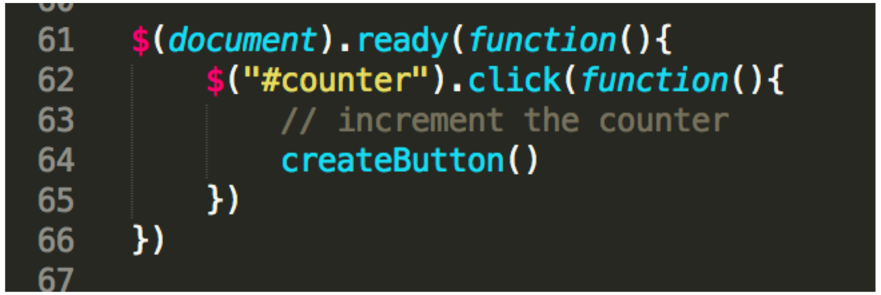

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$(document).ready(function(){
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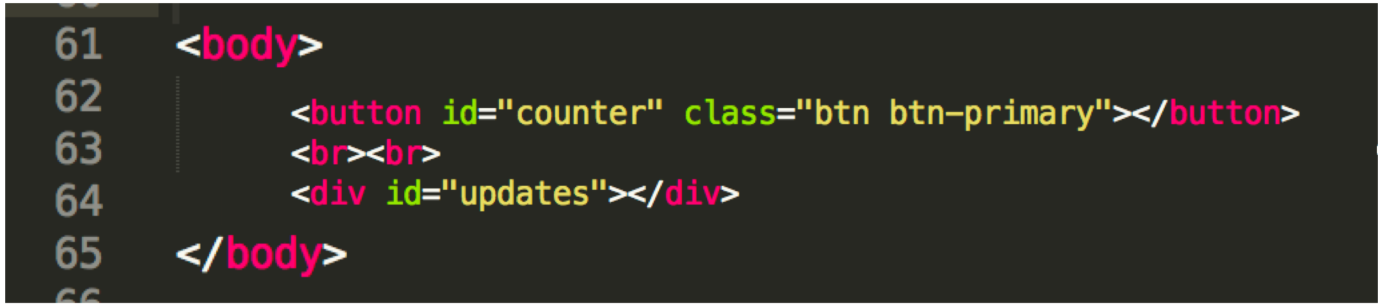
        // increment the counter
        createButton()
    })
})
```

How do we create a **click event** *dynamically*?

HTML



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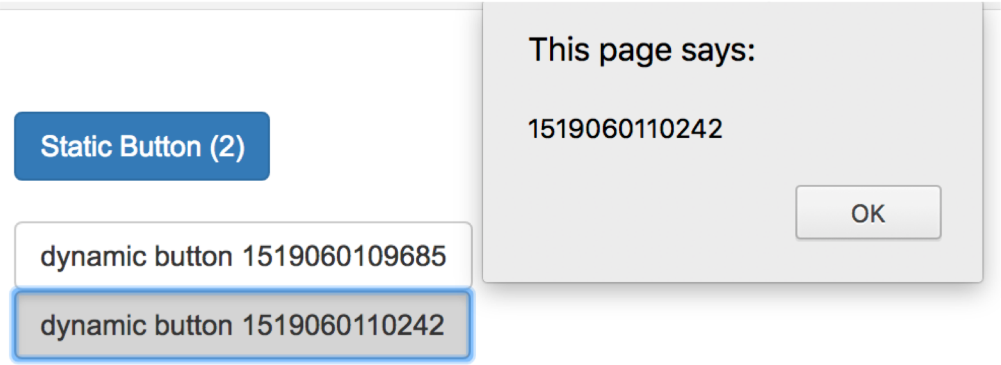
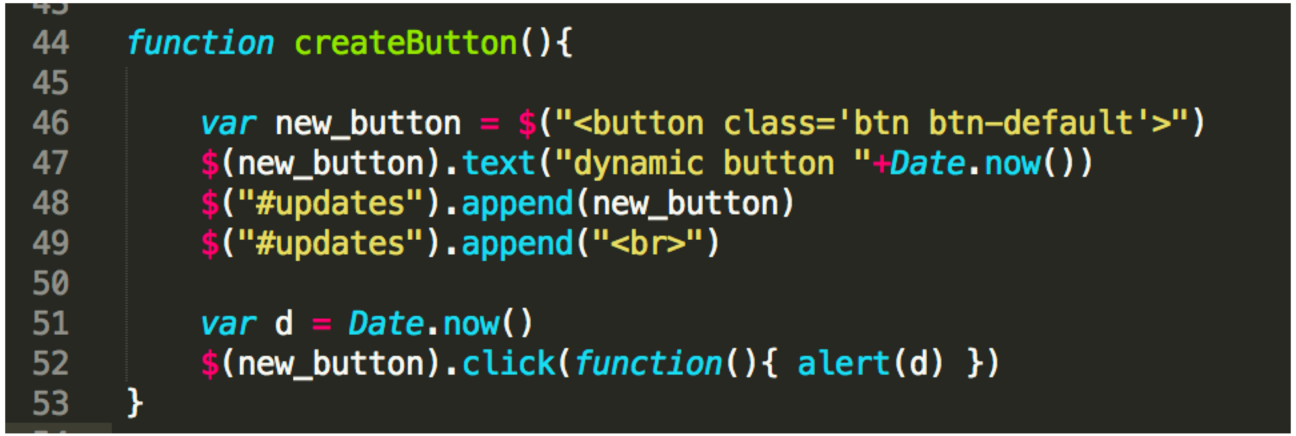


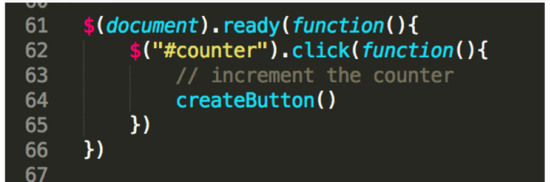
This page says:

1519060110242

JavaScript



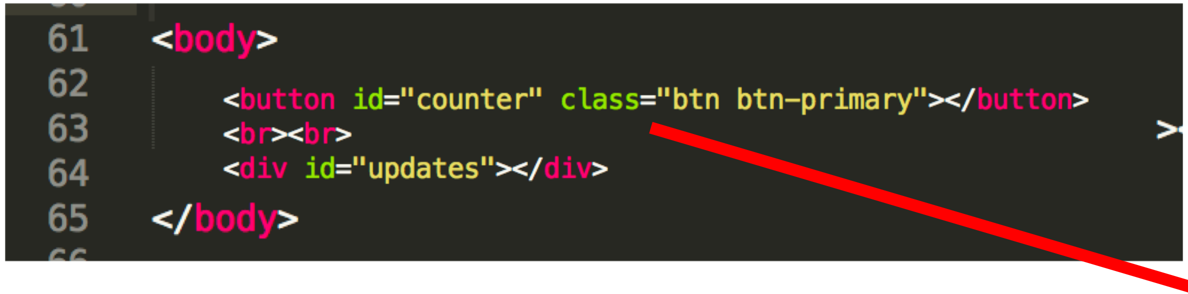
```javascript
function createButton(){

    var new_button = $("<button class='btn btn-default'>")
    $(new_button).text("dynamic button "+Date.now())
    $("#updates").append(new_button)
    $("#updates").append("<br>")

    var d = Date.now()
    $(new_button).click(function(){ alert(d) })
}
```



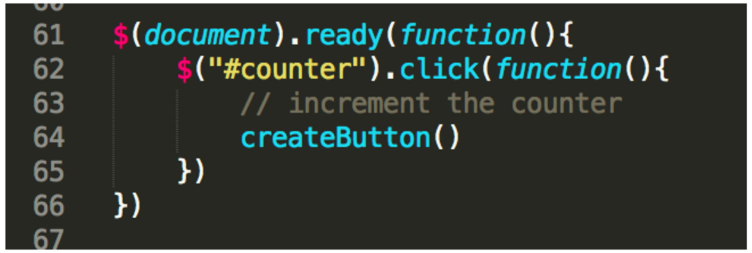
```javascript
$(document).ready(function(){
    $("#counter").click(function(){
        // increment the counter
        createButton()
    })
})
```

You can create elements **statically** in HTML Or **dynamically** in JavaScript (JQuery)

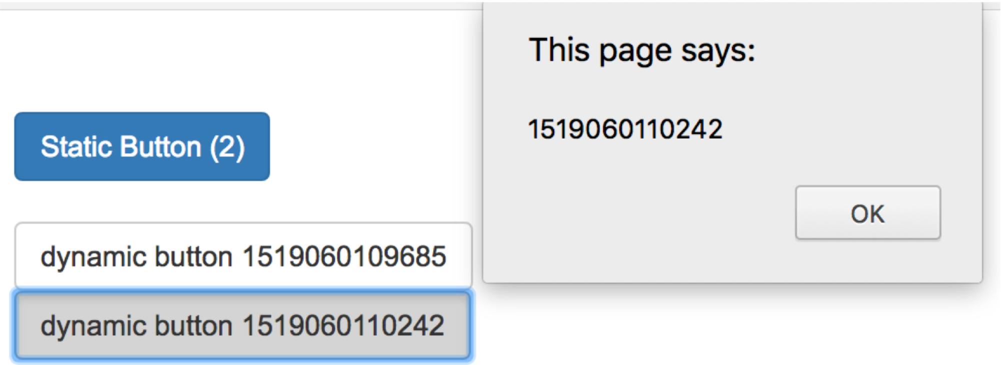
Static: HTML, JavaScript onReady



```
<body>
    <button id="counter" class="btn btn-primary"></button>
    <br><br>
    <div id="updates"></div>
</body>
```



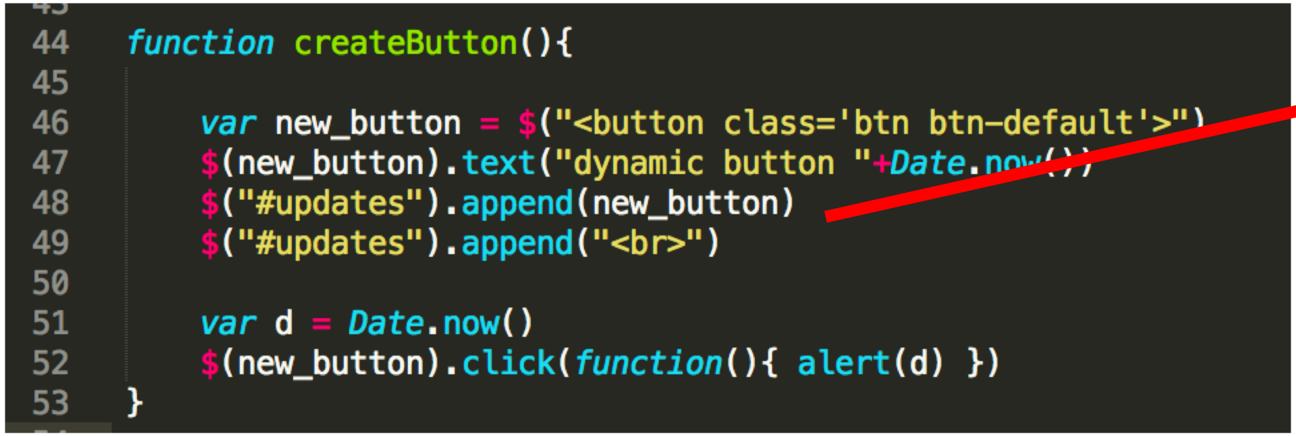
```
$(document).ready(function(){
    $("#counter").click(function(){
        // increment the counter
        createButton()
    })
})
```



This page says:

1519060110242

Dynamic: All JavaScript

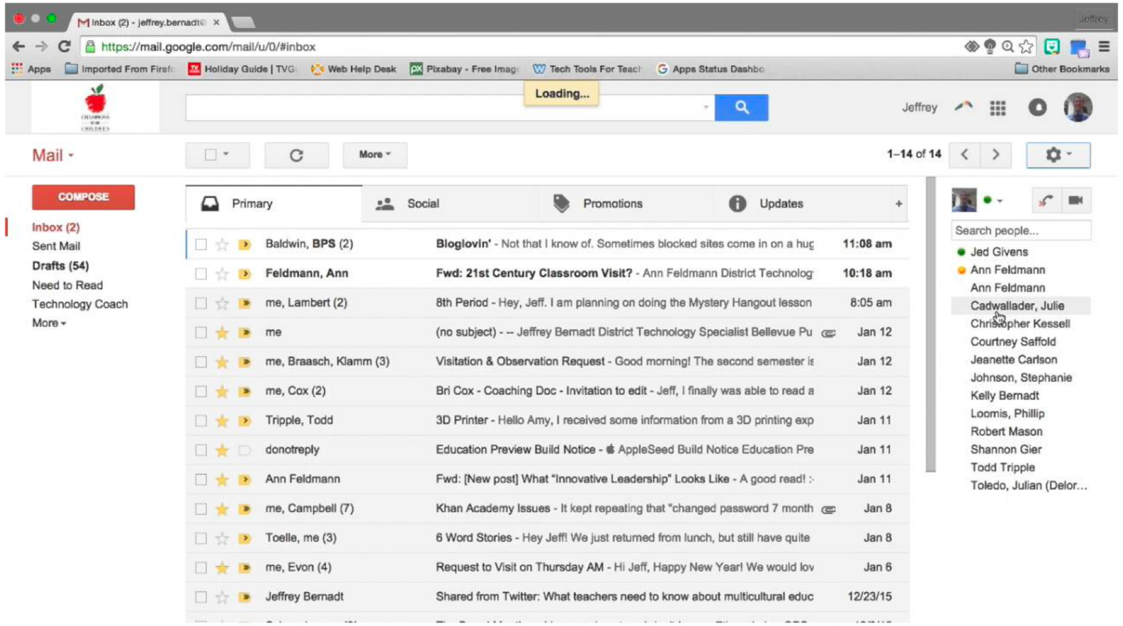


```
function createButton(){

    var new_button = $("<button class='btn btn-default'>")
    $(new_button).text("dynamic button "+Date.now())
    $("#updates").append(new_button)
    $("#updates").append("<br>")

    var d = Date.now()
    $(new_button).click(function(){ alert(d) })
}
```

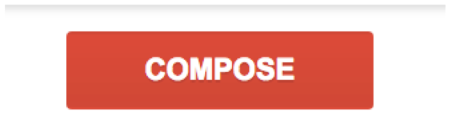
Widgets and Events

Basic elements for users to interact with your UI

Button Widget interaction: What event fires?

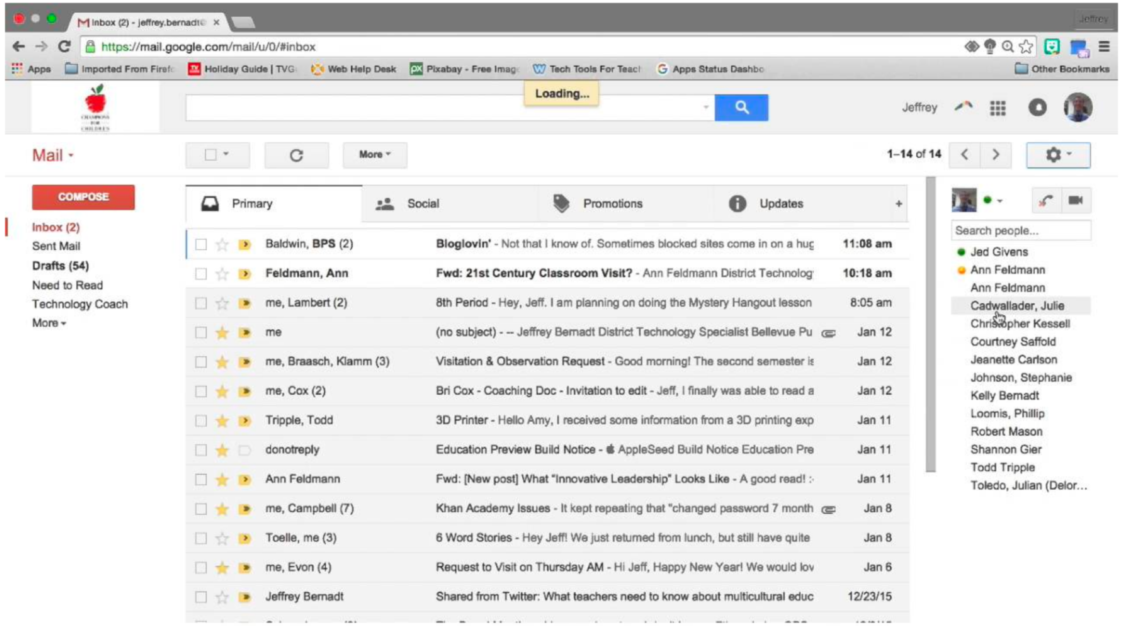


Baldwin, BPS (2)	**Bloglovin'** - Not that I know of. Sometimes blocked sites come in on a hug	**11:08 am**
Feldmann, Ann	**Fwd: 21st Century Classroom Visit?** - Ann Feldmann District Technolog	**10:18 am**
me, Lambert (2)	8th Period - Hey, Jeff. I am planning on doing the Mystery Hangout lesson	8:05 am
me	(no subject) - -- Jeffrey Bernadt District Technology Specialist Bellevue Pu	Jan 12
me, Braasch, Klamm (3)	Visitation & Observation Request - Good morning! The second semester is	Jan 12
me, Cox (2)	Bri Cox - Coaching Doc - Invitation to edit - Jeff, I finally was able to read a	Jan 12
Tripple, Todd	3D Printer - Hello Amy, I received some information from a 3D printing exp	Jan 11
donotreply	Education Preview Build Notice - AppleSeed Build Notice Education Pre	Jan 11
Ann Feldmann	Fwd: [New post] What "Innovative Leadership" Looks Like - A good read! :-	Jan 11
me, Campbell (7)	Khan Academy Issues - It kept repeating that "changed password 7 month	Jan 8
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



“Click event”

Text Input interaction: What event fires?



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me, Campbell (7)	Khan Academy Issues - It kept repeating that "changed password 7 month	Jan 8
Toelle, me (3)	6 Word Stories - Hey Jeff! We just returned from lunch, but still have quite	Jan 8
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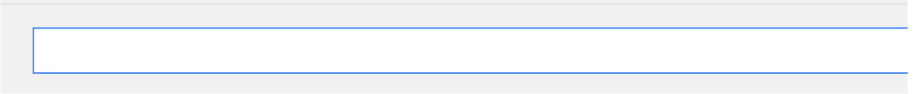
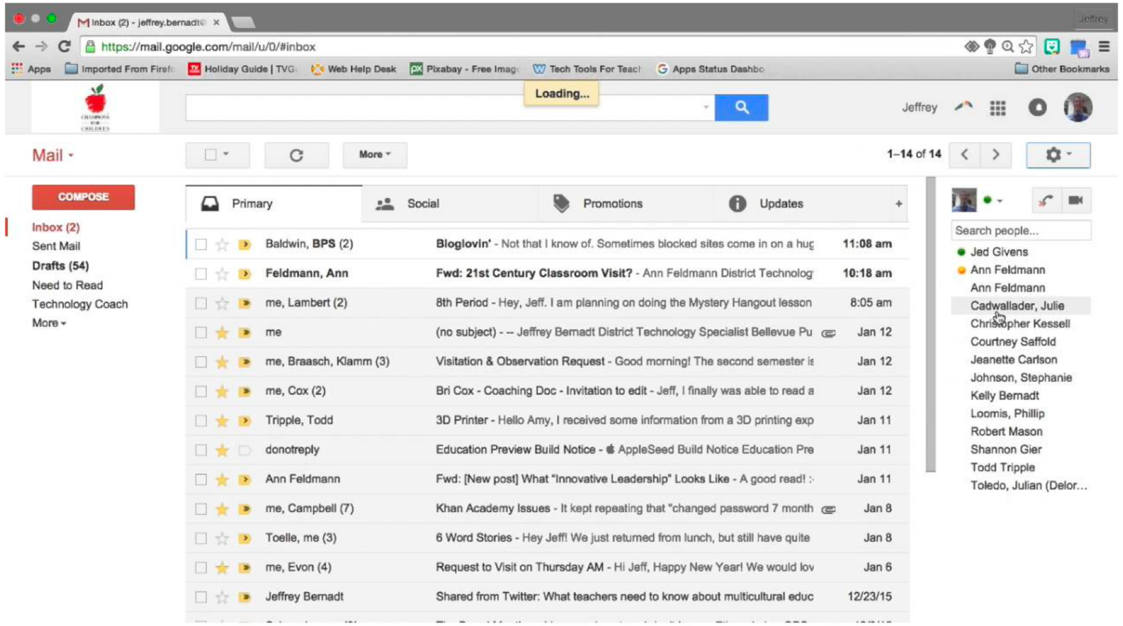


“Keypress” event

Radio Input interaction: What event fires?



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□ ☆	Toelle, me (3)	6 Word Stories - Hey Jeff! We just returned from lunch, but still have quite	Jan 8
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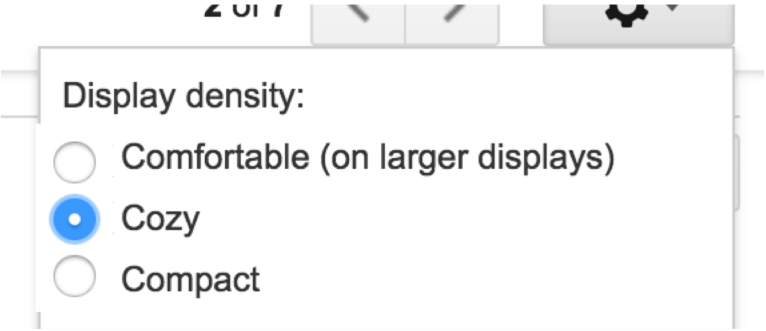
□ ☆	Jeffrey Bernadt	Shared from Twitter: What teachers need to know about multicultural educ	12/23/15



Display density:

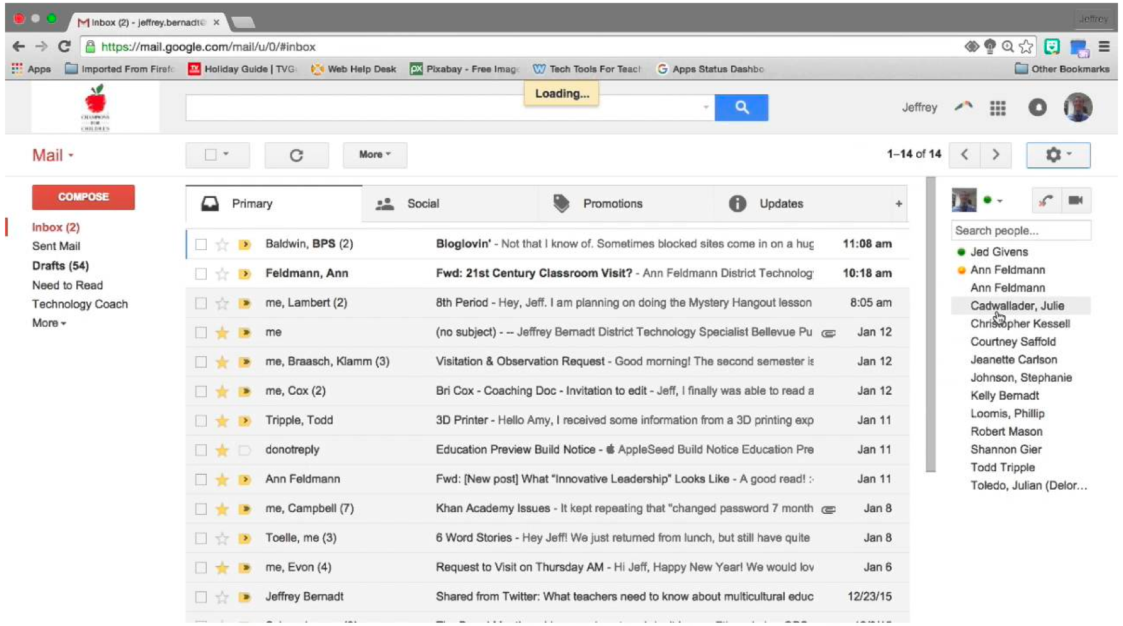
○ Comfortable (on larger displays)

● Cozy

○ Compact

“Change” event

<select> interaction: What event fires?



Baldwin, BPS (2)	**Bloglovin'** - Not that I know of. Sometimes blocked sites come in on a hug	11:08 am
Feldmann, Ann	**Fwd: 21st Century Classroom Visit?** - Ann Feldmann District Technolog	10:18 am
me, Lambert (2)	8th Period - Hey, Jeff. I am planning on doing the Mystery Hangout lesson	8:05 am
me	(no subject) - -- Jeffrey Bernadt District Technology Specialist Bellevue Pu	Jan 12
me, Braasch, Klamm (3)	Visitation & Observation Request - Good morning! The second semester is	Jan 12
me, Cox (2)	Bri Cox - Coaching Doc - Invitation to edit - Jeff, I finally was able to read a	Jan 12
Tripple, Todd	3D Printer - Hello Amy, I received some information from a 3D printing exp	Jan 11
donotreply	Education Preview Build Notice - AppleSeed Build Notice Education Pre	Jan 11
Ann Feldmann	Fwd: [New post] What "Innovative Leadership" Looks Like - A good read! :-	Jan 11
me, Campbell (7)	Khan Academy Issues - It kept repeating that "changed password 7 month	Jan 8
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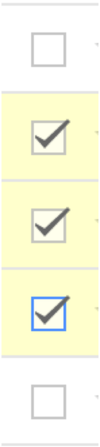
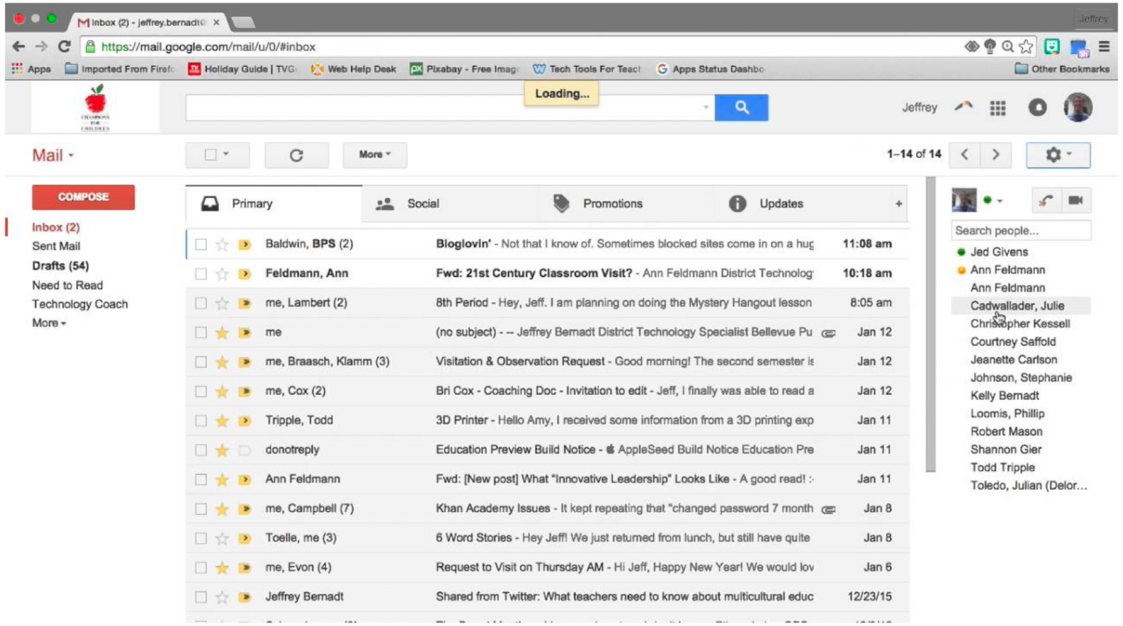
Jed Givens
Ann Feldmann
Ann Feldmann
Cadwallader, Julie
Christopher Kessell
Courtney Saffold
Jeanette Carlson
Johnson, Stephanie
Kelly Bernadt
Loomis, Phillip
Robert Mason
Shannon Gier
Todd Tripple
Toledo, Julian (Delor...



"Change" event

Dropdown interaction: What event fires?



Baldwin, **BPS** (2)	**Bloglovin'** - Not that I know of. Sometimes blocked sites come in on a hug	**11:08 am**
Feldmann, Ann	**Fwd: 21st Century Classroom Visit?** - Ann Feldmann District Technolog	**10:18 am**
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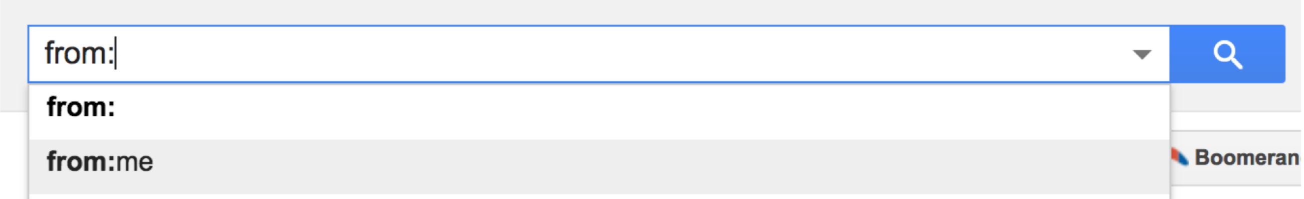


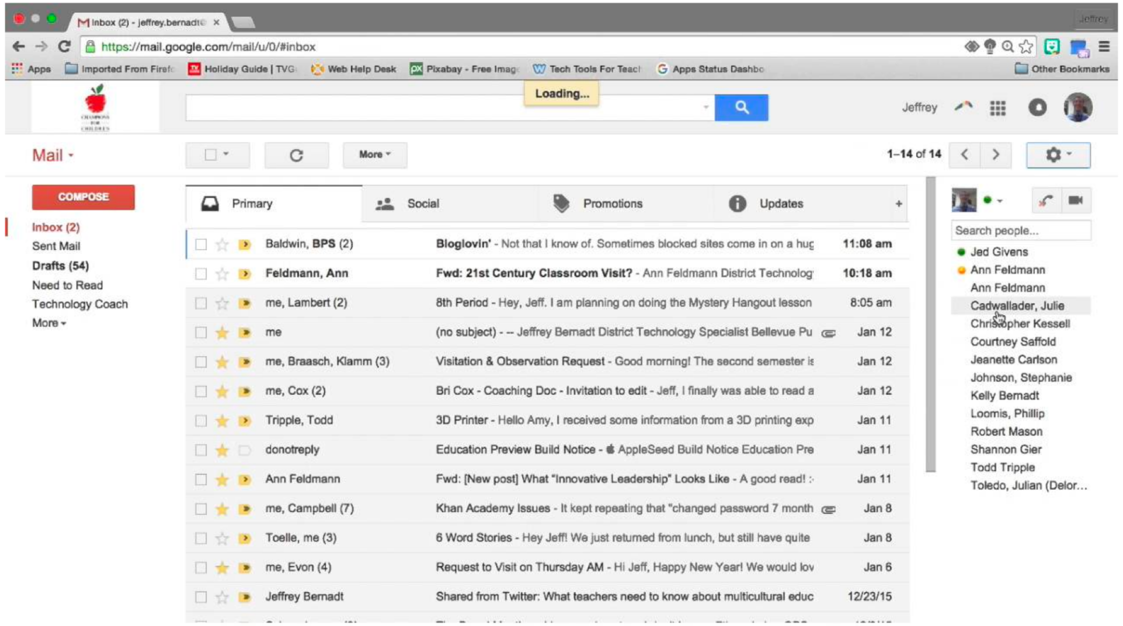
from:

from:

from:me

“Select” event

Drag and Drop interaction: What events fire?



https://mail.google.com/mail/u/0/#inbox

Mail

COMPOSE

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

Loading...

1–14 of 14

Primary | Social | Promotions | Updates

□ ☆	Baldwin, **BPS** (2)	**Bloglovin'** - Not that I know of. Sometimes blocked sites come in on a hug	**11:08 am**
□ ☆	**Feldmann, Ann**	**Fwd: 21st Century Classroom Visit?** - Ann Feldmann District Technolog	**10:18 am**
□ ☆	me, Lambert (2)	8th Period - Hey, Jeff. I am planning on doing the Mystery Hangout lesson	8:05 am
□ ★	me	(no subject) - -- Jeffrey Bernadt District Technology Specialist Bellevue Pu	Jan 12
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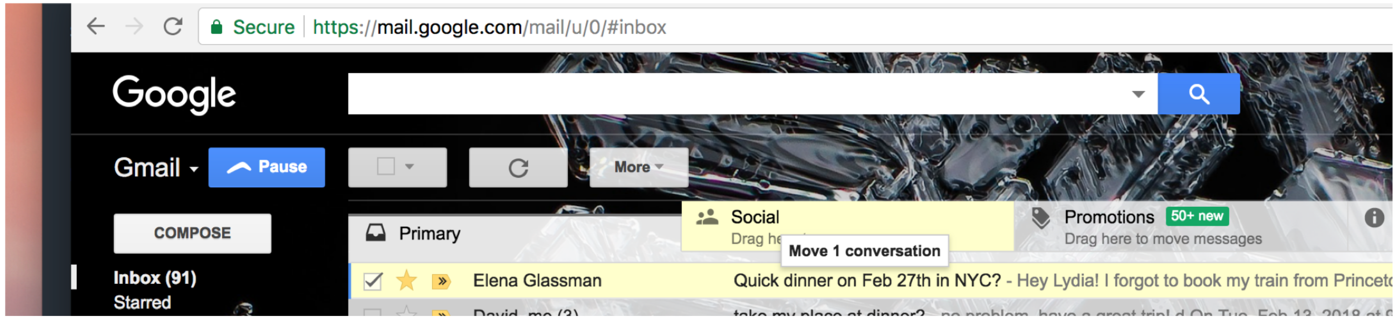
Search people...

● Jed Givens
● Ann Feldmann
Ann Feldmann
Cadwallader, Julie
Christopher Kessell
Courtney Saffold
Jeanette Carlson
Johnson, Stephanie
Kelly Bernadt
Loomis, Phillip
Robert Mason
Shannon Gier
Todd Tripple
Toledo, Julian (Delor...



Secure | https://mail.google.com/mail/u/0/#inbox

Primary | Social — Drag he[re] | Promotions 50+ new — Drag here to move messages

Move 1 conversation

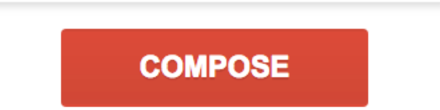
☑ ★	Elena Glassman	Quick dinner on Feb 27th in NYC? - Hey Lydia! I forgot to book my train from Princeto

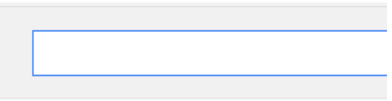
- “Drag” event
- “Drop” event

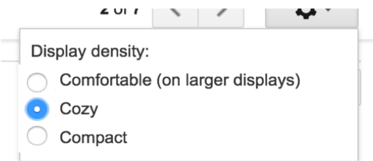
Widgets are standardized low-level interaction interfaces that trigger events

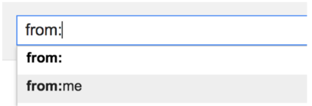
When you create a widget…

The **appearance** is standardized,






Display density:
○ Comfortable (on larger displays)
● Cozy
○ Compact


from:

The **types of events** it responds to are standardized

“Click”

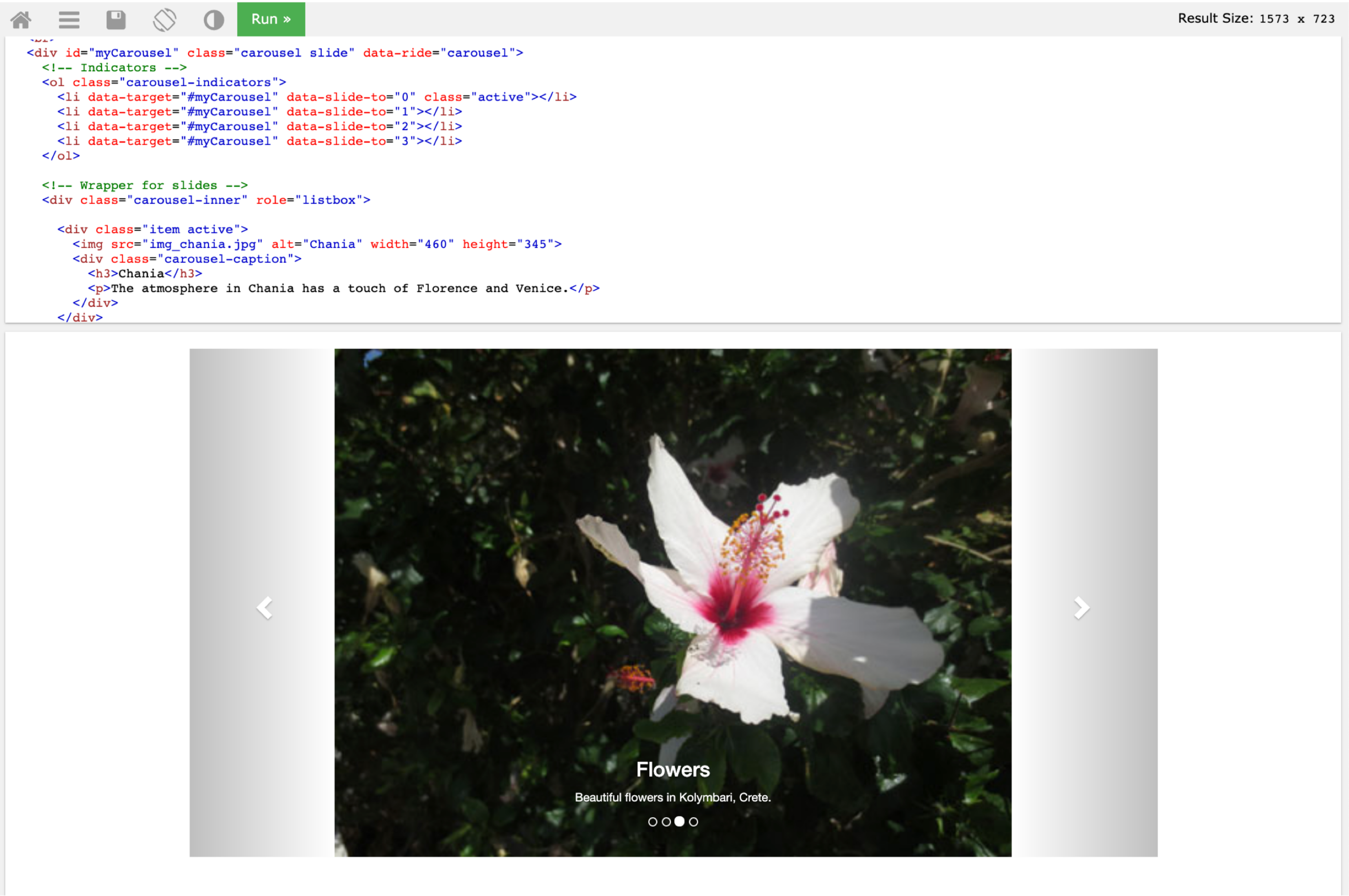
“Keypress”

“Change”

“Search”

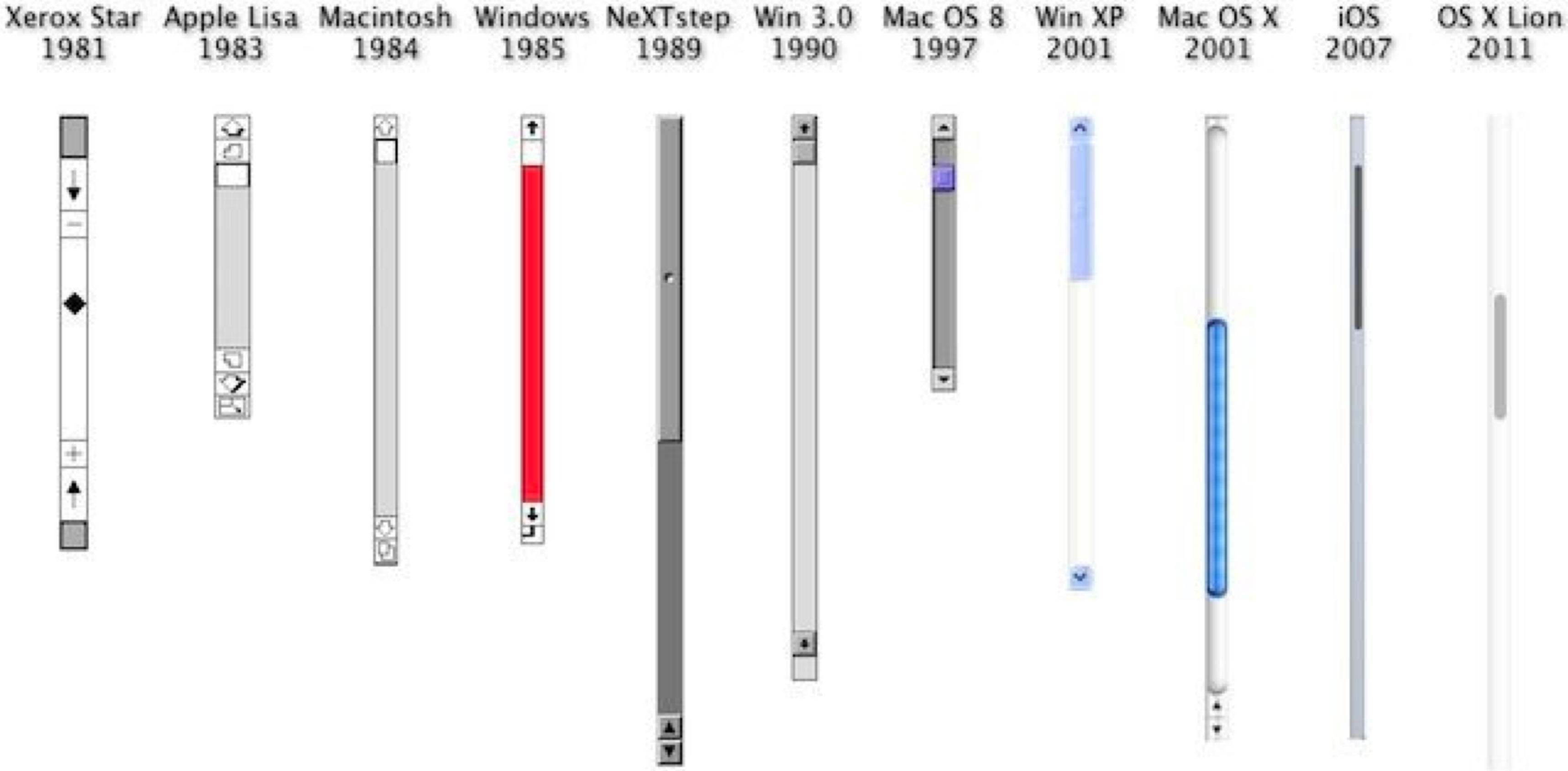
But the actions taken after an event is fired, are not standardized

Widgets can also be big



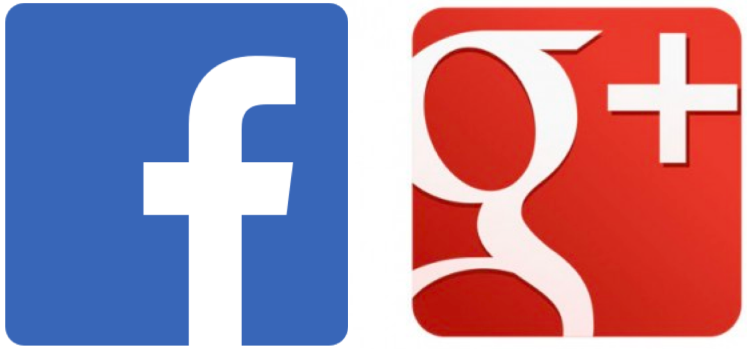
```
<div id="myCarousel" class="carousel slide" data-ride="carousel">
  <!-- Indicators -->
  <ol class="carousel-indicators">
    <li data-target="#myCarousel" data-slide-to="0" class="active"></li>
    <li data-target="#myCarousel" data-slide-to="1"></li>
    <li data-target="#myCarousel" data-slide-to="2"></li>
    <li data-target="#myCarousel" data-slide-to="3"></li>
  </ol>

  <!-- Wrapper for slides -->
  <div class="carousel-inner" role="listbox">

    <div class="item active">
      <img src="img_chania.jpg" alt="Chania" width="460" height="345">
      <div class="carousel-caption">
        <h3>Chania</h3>
        <p>The atmosphere in Chania has a touch of Florence and Venice.</p>
      </div>
    </div>
```

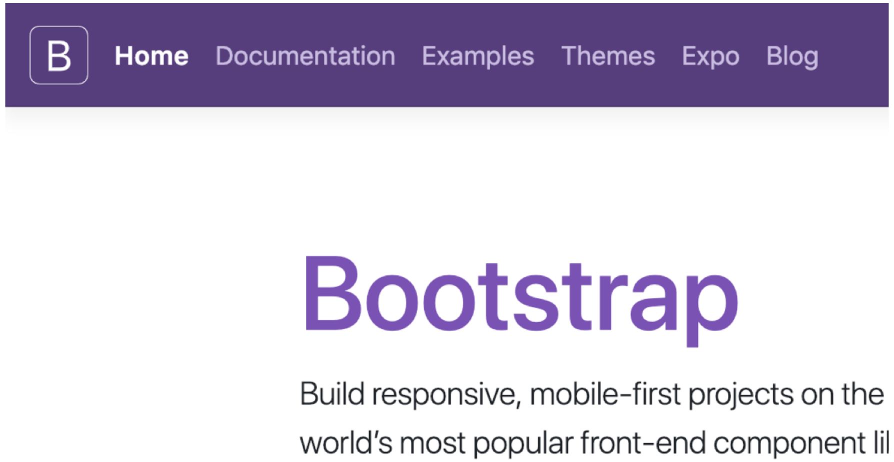
Because you did not program them yourself, widgets may appear and act differently on different devices



Pros and Cons of Standardization

Things that have become standardized

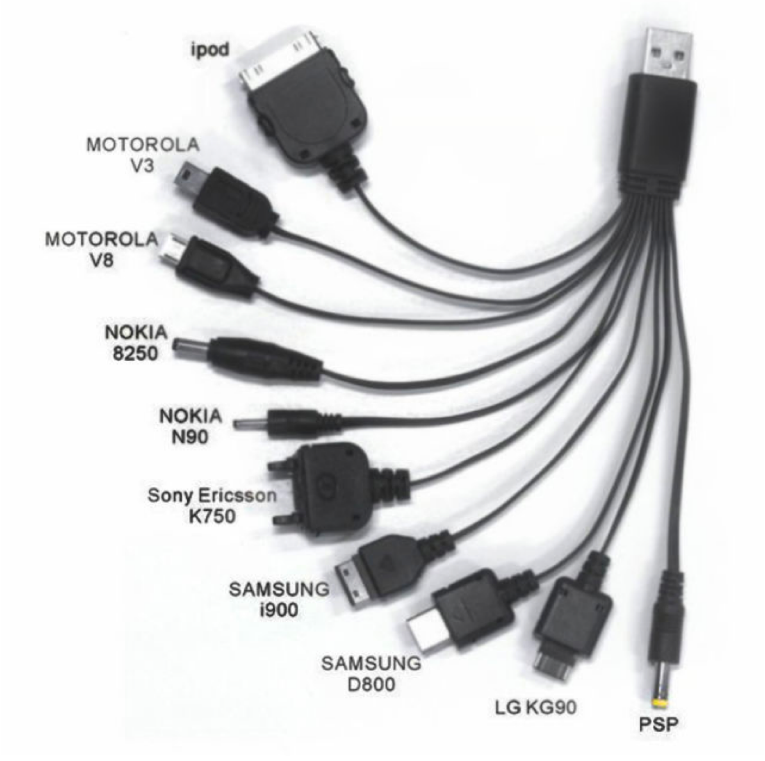




Bootstrap

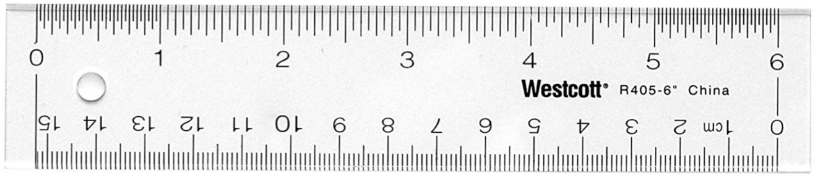
Build responsive, mobile-first projects on the world's most popular front-end component lil

Things that have not become standardized



“colour”, “honour”,
“cheque”, “connexion”

Old things that got standardized



What’s good about standardization?

Standardized

Non-Standardized

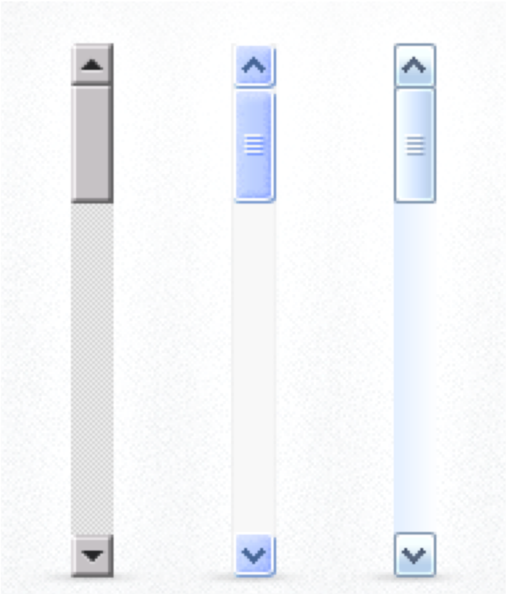
What’s bad about standardization?

Standardized

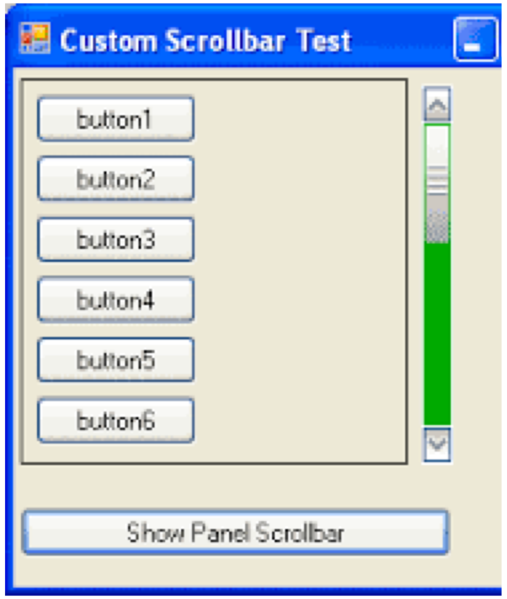
Non-Standardized

Widgets allow customization

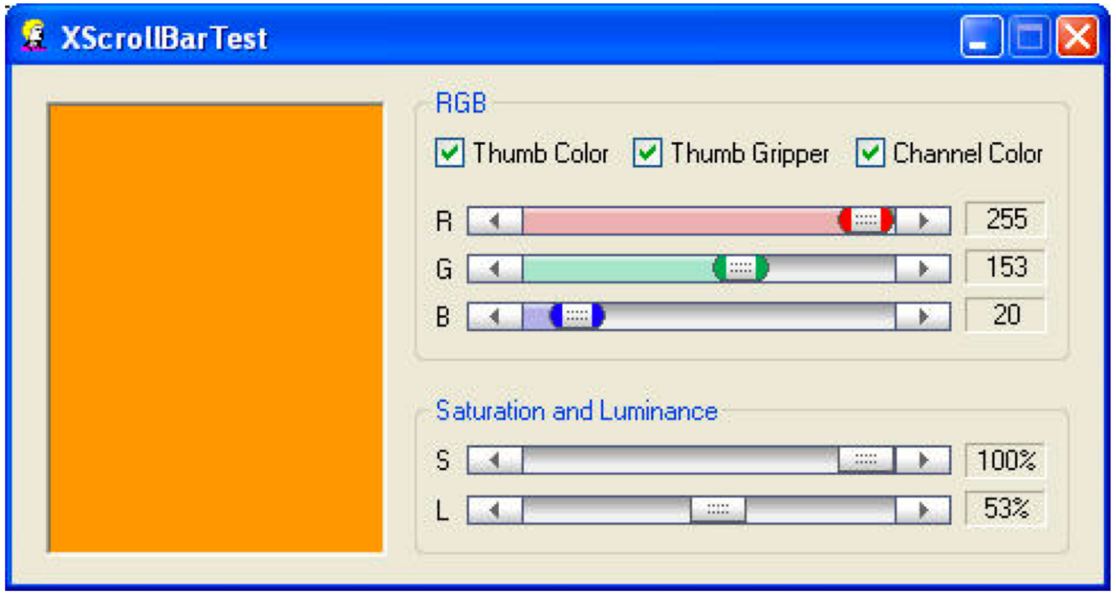
Customizable scroll bars



Bad use of customization.



Good use of customization.



☑ Thumb Color ☑ Thumb Gripper ☑ Channel Color

R 255

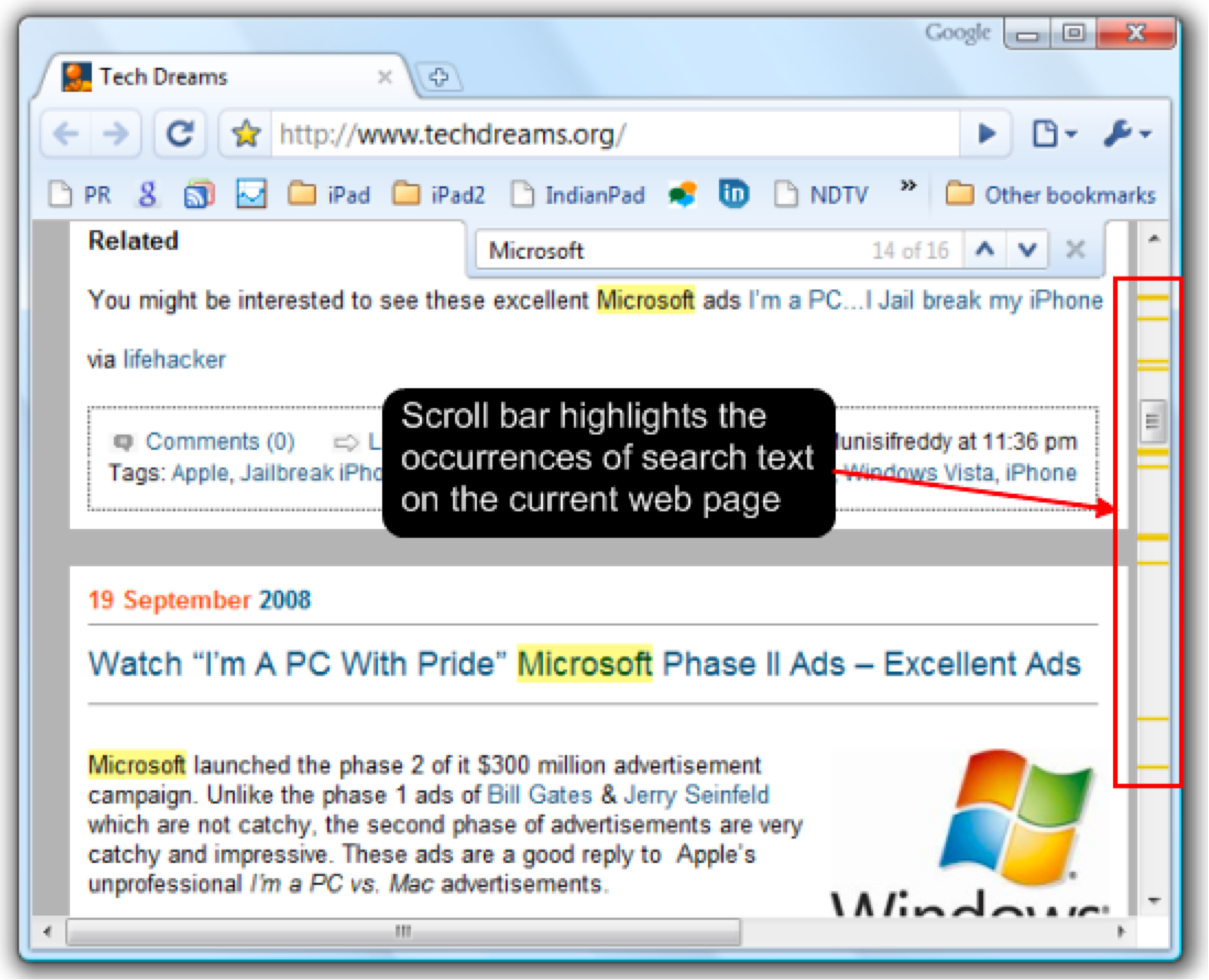
G 153

B 20

S 100%

L 53%

Widgets allow customization



Related

You might be interested to see these excellent Microsoft ads I'm a PC...I Jail break my iPhone

via lifehacker

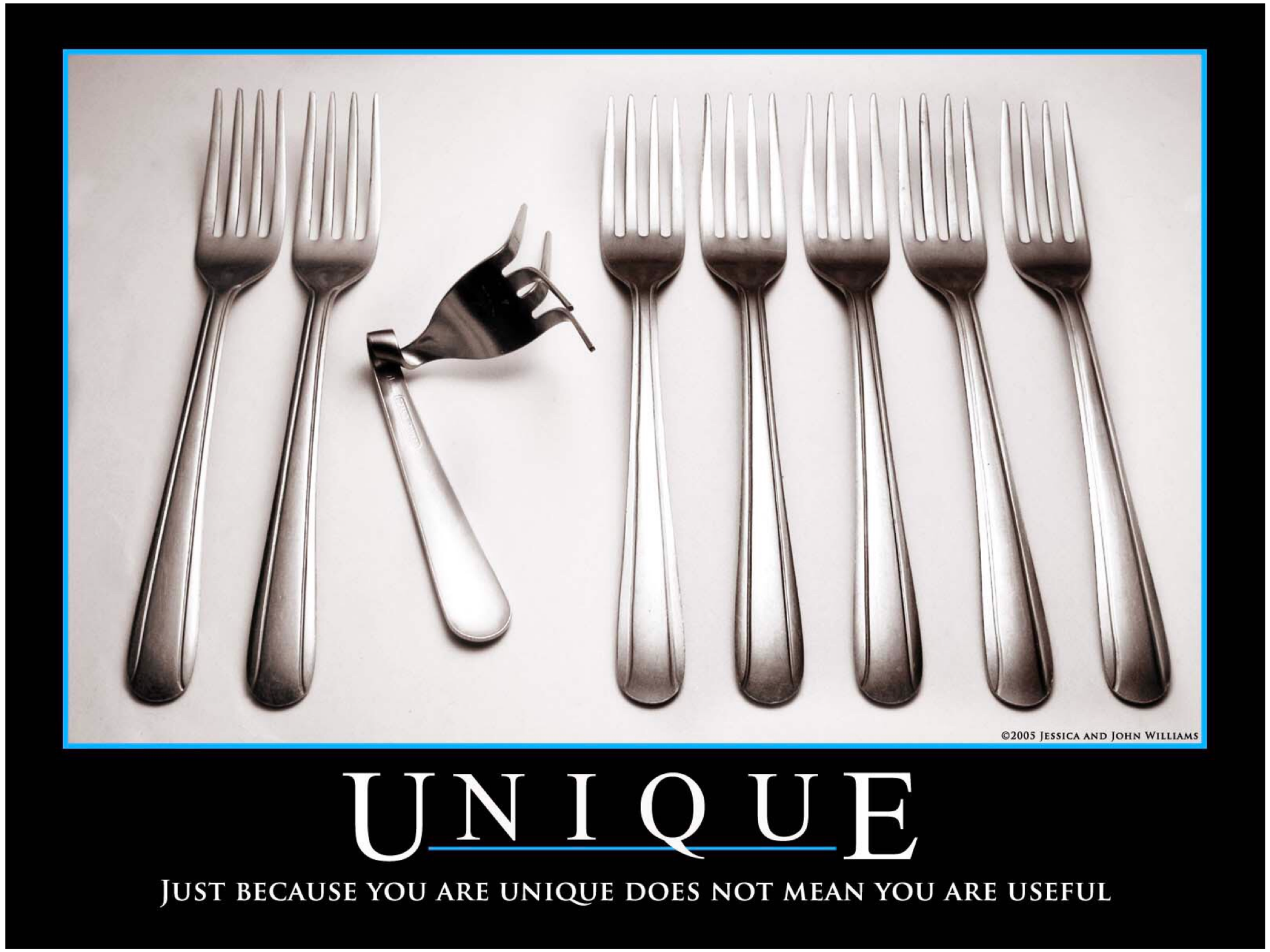
Scroll bar highlights the occurrences of search text on the current web page

19 September 2008

Watch "I'm A PC With Pride" Microsoft Phase II Ads – Excellent Ads

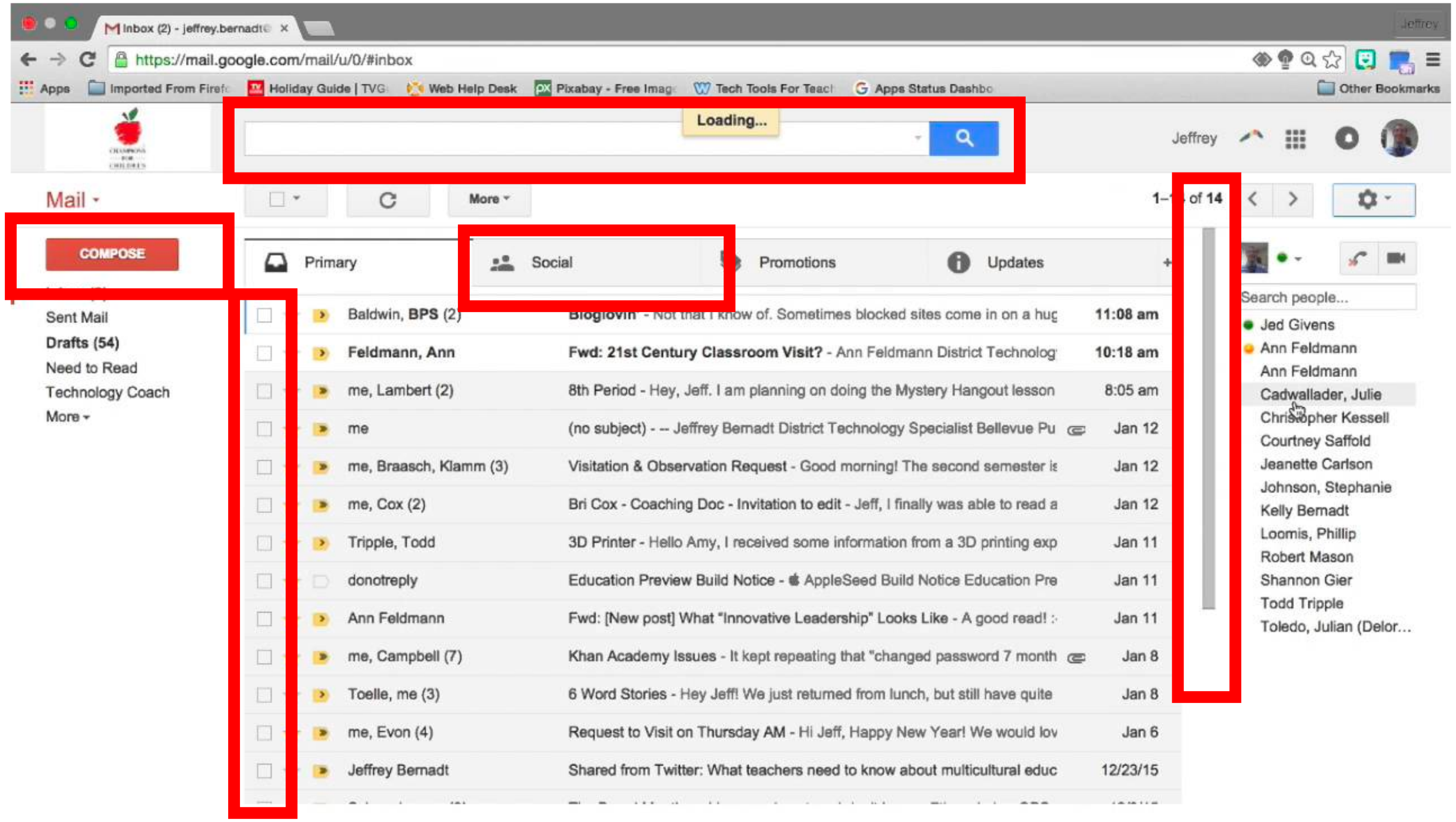
Microsoft launched the phase 2 of it $300 million advertisement campaign. Unlike the phase 1 ads of Bill Gates & Jerry Seinfeld which are not catchy, the second phase of advertisements are very catchy and impressive. These ads are a good reply to Apple's unprofessional *I'm a PC vs. Mac* advertisements.

Use your powers of customization wisely.


©2005 Jessica and John Williams
UNIQUE
Just because you are unique does not mean you are useful

Summary

We interact with webpages through **widgets**: Elements with standardized appearance and events



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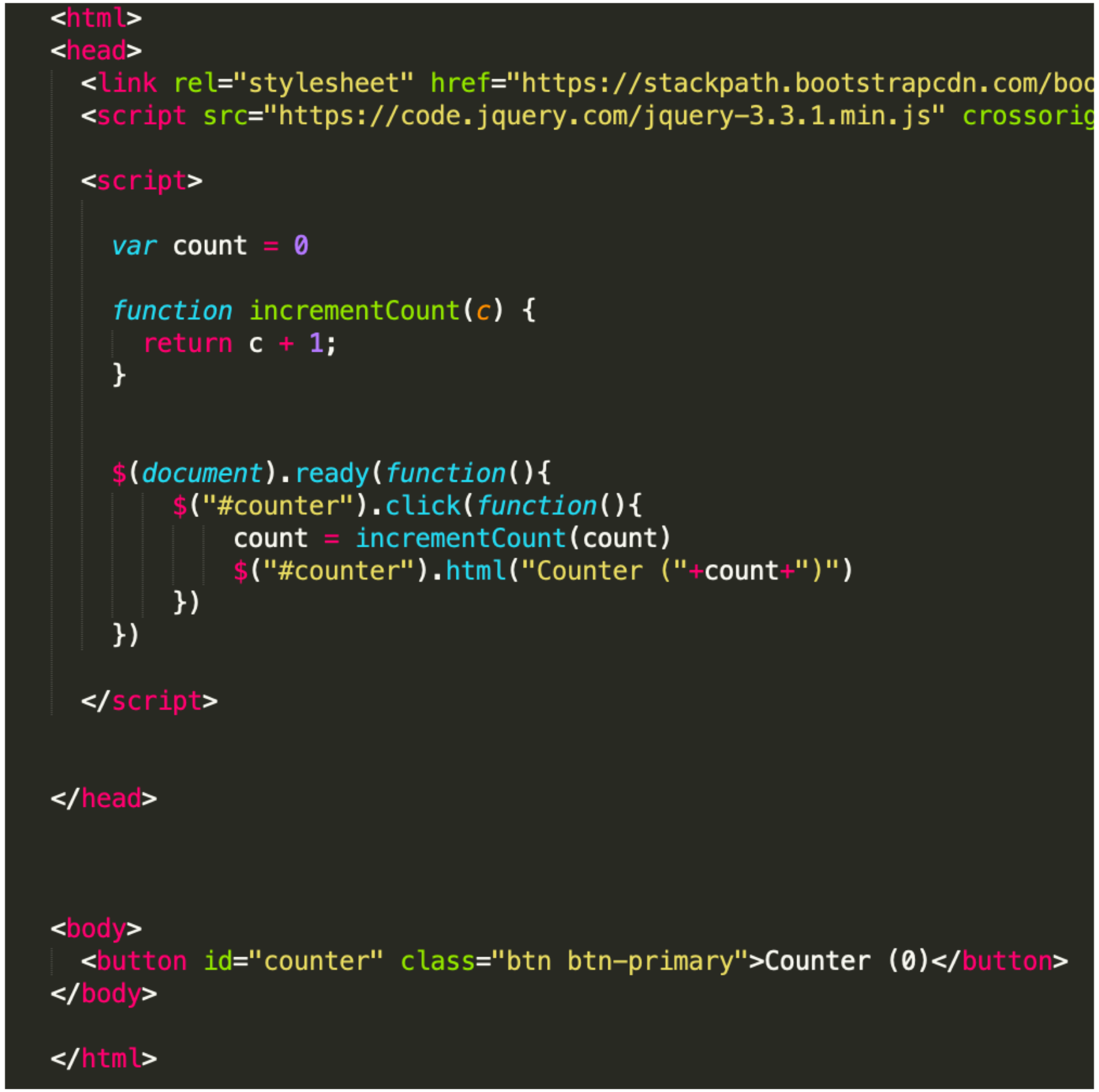
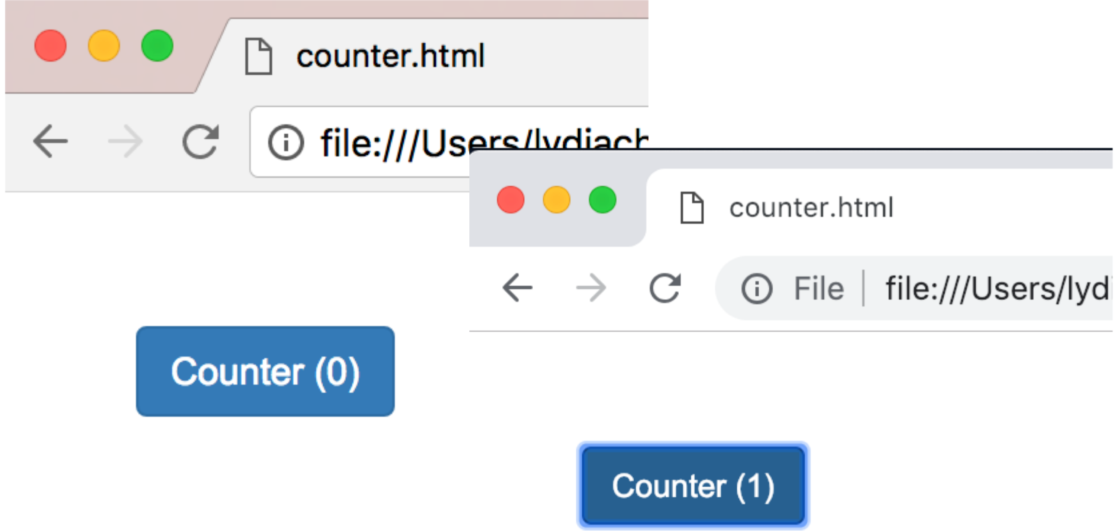
Good style of attaching events in JQuery



```
<html>
<head>
  <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/boo
  <script src="https://code.jquery.com/jquery-3.3.1.min.js" crossorig

  <script>

    var count = 0

    function incrementCount(c) {
      return c + 1;
    }


    $(document).ready(function(){
        $("#counter").click(function(){
            count = incrementCount(count)
            $("#counter").html("Counter ("+count+")")
        })
    })

  </script>


</head>



<body>
  <button id="counter" class="btn btn-primary">Counter (0)</button>
</body>

</html>
```



1. Uses Jquery (not pure JavaScript)

2. Attaches click handler as in the <script>
$(element).click(…)
(doesn’t attach in HTML)

2. Uses $(document).ready(…)

JQuery is a JavaScript Library that make JavaScript easier (and standard across browsers)

JavaScript

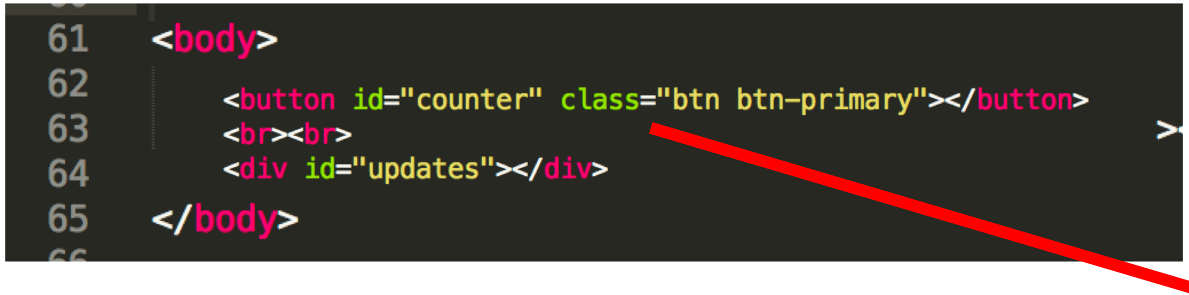
```
document.getElementById("counter").addEventListener("click", function(){
  document.getElementById("counter").innerHTML = "Counter (0)";
});
```

JQuery

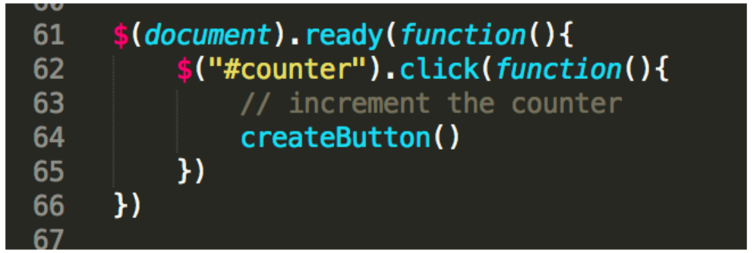
```
$("#counter").click(function(){
  $("#counter").html("Counter (0)");
});
```

You can create elements **statically** in HTML
Or **dynamically** in JavaScript (JQuery)

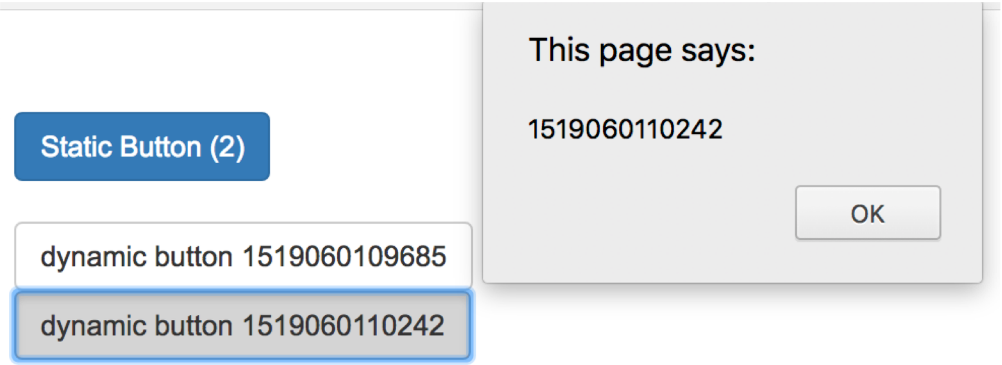
Static: HTML, JavaScript onReady



```
<body>
    <button id="counter" class="btn btn-primary"></button>
    <br><br>
    <div id="updates"></div>
</body>
```



```
$(document).ready(function(){
    $("#counter").click(function(){
        // increment the counter
        createButton()
    })
})
```



Static Button (2)

dynamic button 1519060109685

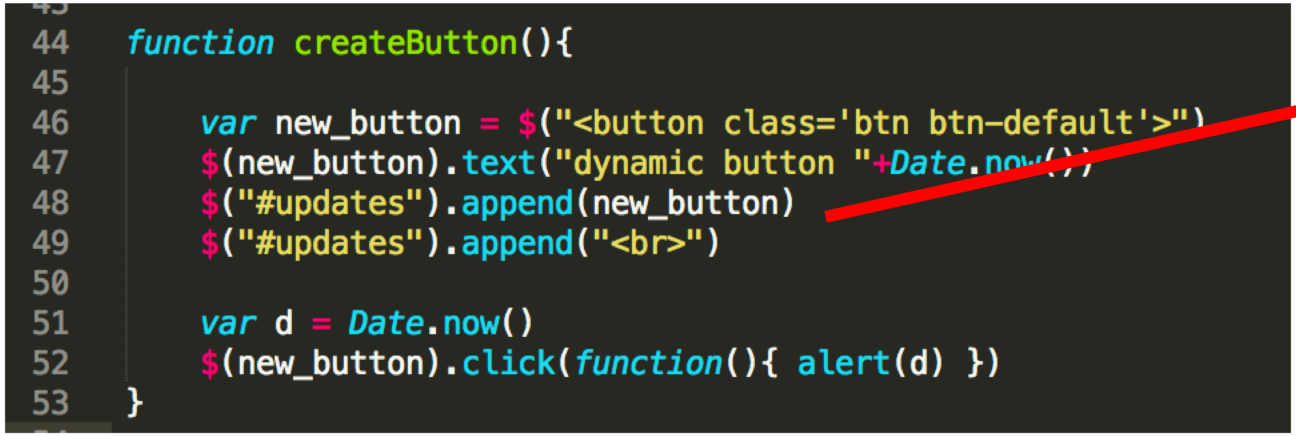
dynamic button 1519060110242

This page says:

1519060110242

OK

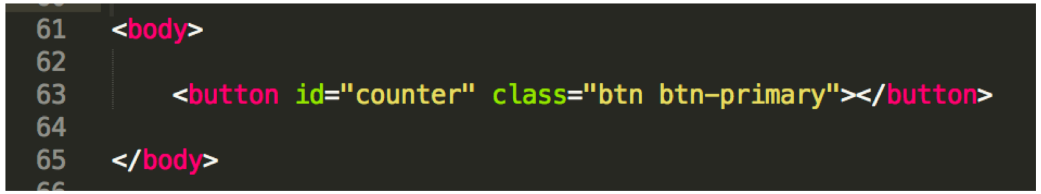
Dynamic: All JavaScript



```
function createButton(){

    var new_button = $("<button class='btn btn-default'>")
    $(new_button).text("dynamic button "+Date.now())
    $("#updates").append(new_button)
    $("#updates").append("<br>")

    var d = Date.now()
    $(new_button).click(function(){ alert(d) })
}
```

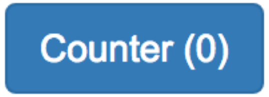
Widgets are standardized low-level interaction interfaces that trigger events

When you create a widget…

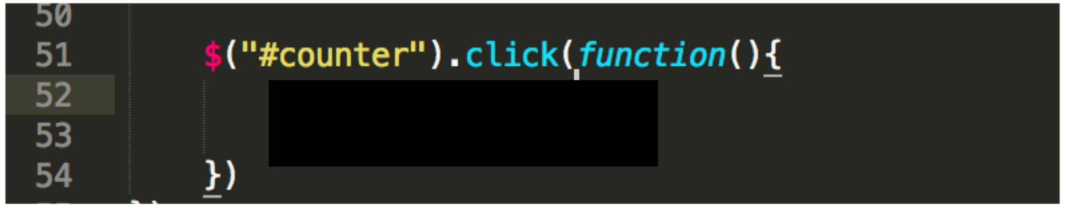


```
<body>

    <button id="counter" class="btn btn-primary"></button>

</body>
```

The **appearance** is standardized,

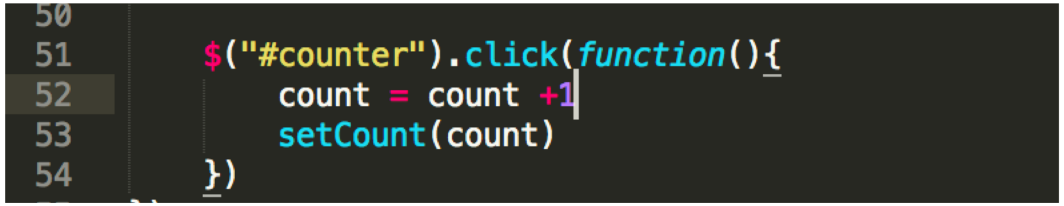


The **types of events** it responds to are standardized



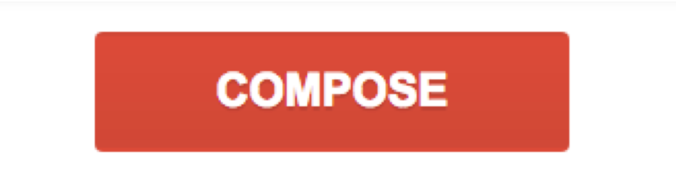
```
    $("#counter").click(function(){
        [redacted]
    })
```

But the actions taken after an event is fired, are not standardized

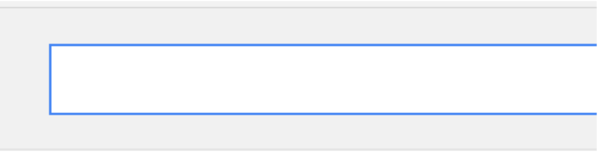


```
    $("#counter").click(function(){
        count = count +1
        setCount(count)
    })
```

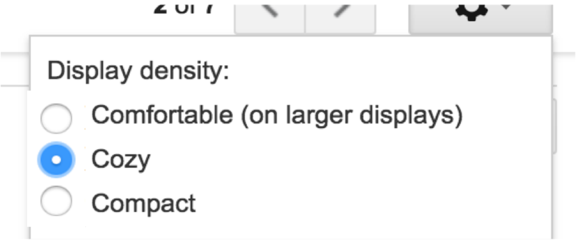
There are many types of widgets and events



Click



Keypress



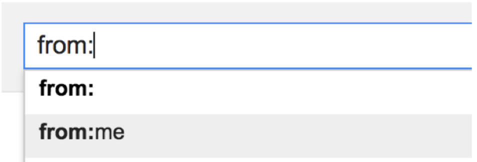
Display density:

○ Comfortable (on larger displays)

● Cozy

○ Compact

Change



from:

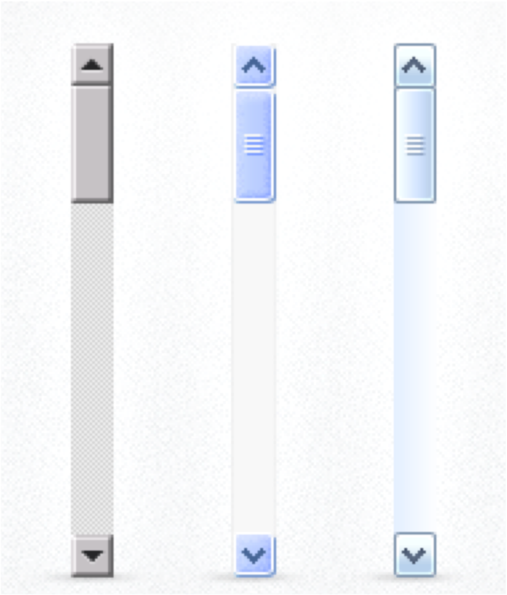
from:

from:me

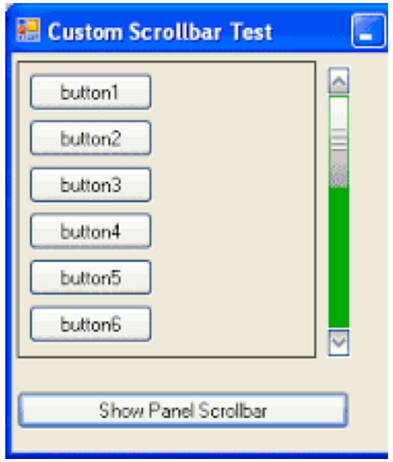
Select

Widgets allow customization. Use it wisely.

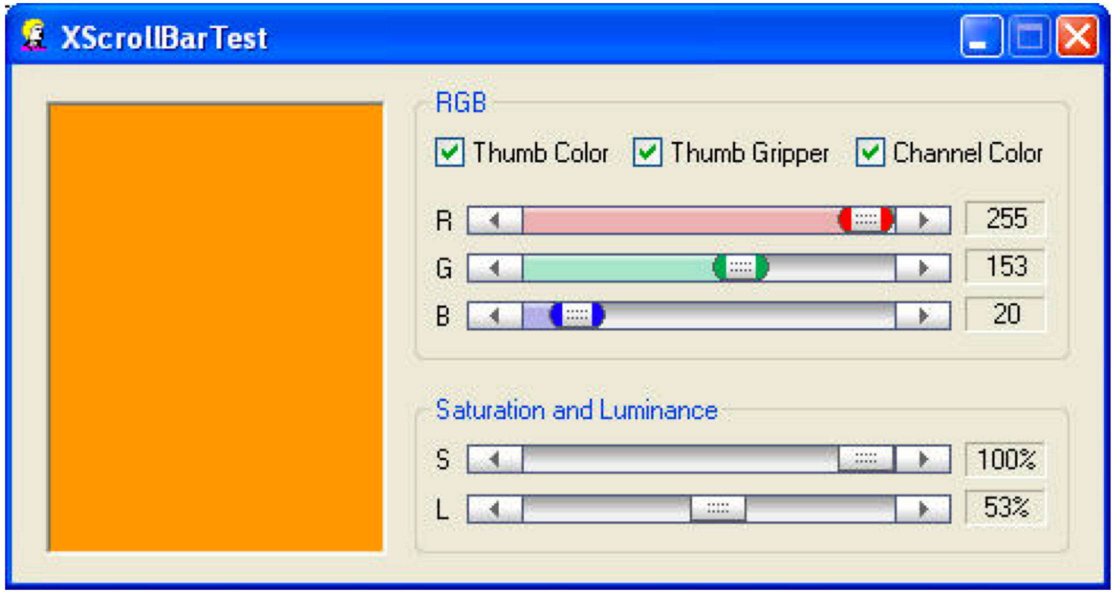
Customizable scroll bars



Bad use of customization.



Good use of customization.



RGB

☑ Thumb Color ☑ Thumb Gripper ☑ Channel Color

R 255

G 153

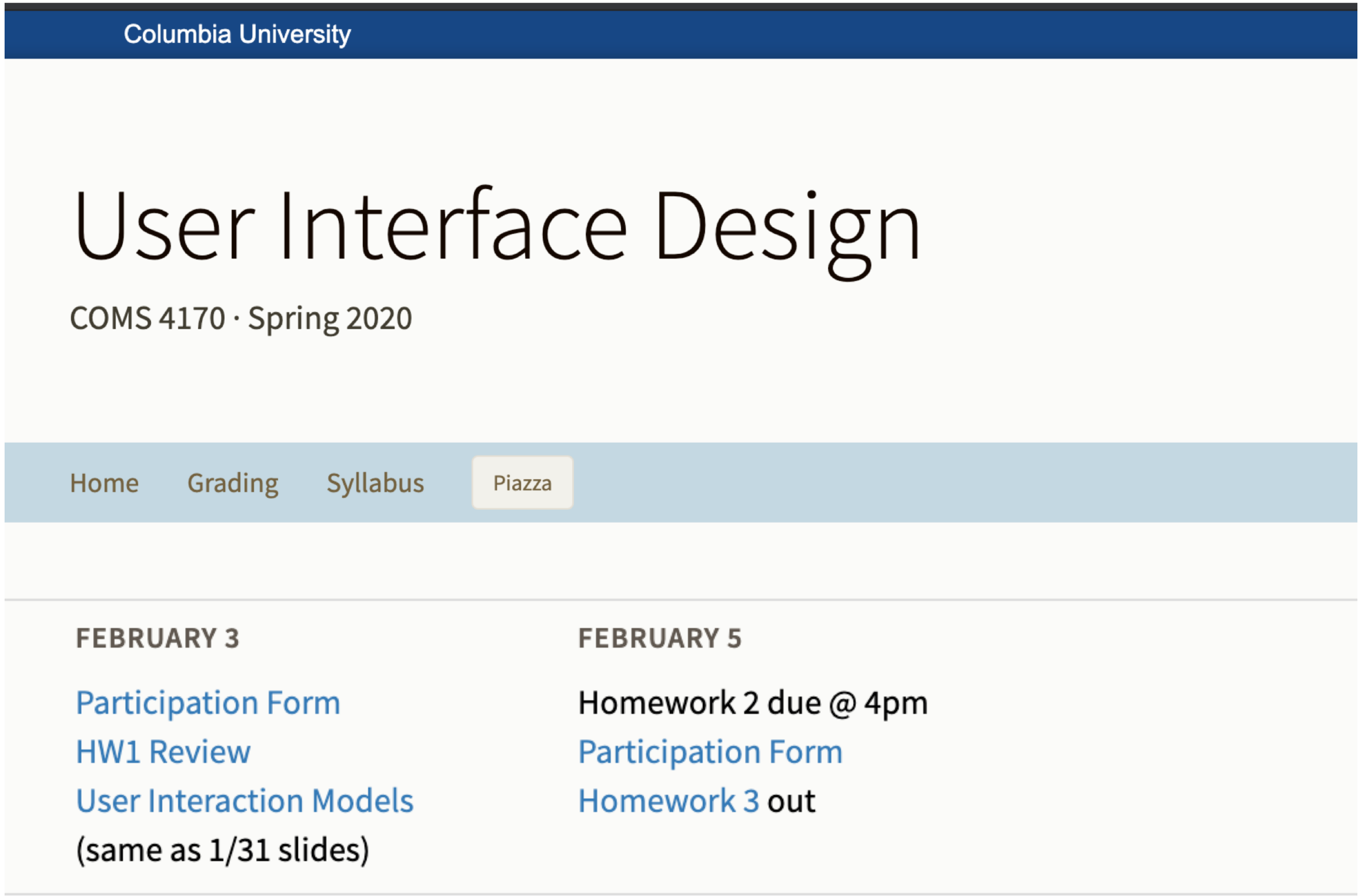
B 20

Saturation and Luminance

S 100%

L 53%

Fill out participation now!
HW 3 is out.



Columbia University

User Interface Design

COMS 4170 · Spring 2020

FEBRUARY 3

Participation Form
HW1 Review
User Interaction Models
(same as 1/31 slides)

FEBRUARY 5

Homework 2 due @ 4pm
Participation Form
Homework 3 out