jQuery makes it easy to:

🔍	**find**	elements in an HTML document
✏️	**change**	HTML content
🎧	**listen**	to what a user does and react accordingly
🎞️	**animate**	content on the page
💬	**talk**	over the network to fetch new content

Document Object Model

A tree-like structure created by browsers so we can
quickly find HTML Elements using JavaScript.

What does that DOM structure look like?

HTML document

```
<!DOCTYPE html>
<html>
<head>
  <title>jQuery Adventures</title>
</head>
<body>
  <h1>Where do you want to go?</h1>
  <p>Plan your next adventure.</p>
</body>
</html>
```

Inside the DOM, HTML elements become "nodes" which have relationships with one another.

The DOM

```
DOCUMENT
 └ html
    └ head
       └ title
          └ jQuery Adven...
    └ body
       └ h1
          └ Where do...
       └ p
          └ Plan your...
```

node types: element   text

```
jQuery(document).ready(function(){
    $("h1").text("Where to?");
});
```

---

1 download jQuery

2 load it in your HTML document

```
<script src="jquery.min.js"></script>
```

3 start using it

```
<script src="application.js"></script>
```

CSS

```
p { ... }

#container { ... }

.articles { ... }
```

jQuery

```
$("p");

$("#container");

$(".articles");
```

↔

the space matters

```
$("#destinations li");
```

parent *descendant*

```
$("#destinations > li");
```

immediate childeren

```
$(".promo, #france");
```

```
$("#destinations li:first");
```

```
$("#destinations li:last");
```

```
$("#destinations li:odd");
```

```
$("#destinations li:even");
```

```
$("#destinations").find("li");
```
✔

selection traversal

🏠 🚶

It takes a bit more code, but it's faster.

```
$("li").first();
```

```
$("li").last();
```
✔

```
$("li").first().next();
```

```
$("li").first().next().prev();
```

```
$("li").first().parent();
```

```
$("#destinations").children("li");
```

children(), unlike find(), only selects direct children

```
var price = $('<p>From $399.99</p>');
```
✔

→ *Creates a node but doesn't add it to the DOM*

application.js

```javascript
$(document).ready(function() {
    var price = $('<p>From $399.99</p>');
});
```

ways to add this price node to the DOM

.append(<element>)   .prepend(<element>)

.after(<element>)   .before(<element>)

---

application.js

```javascript
$(document).ready(function() {
    var price = $('<p>From $399.99</p>');
    $('.vacation').before(price);
});
```

Puts the price node before .vacation

DOCUMENT

```
p
  L $399.99
    li    class="vacation"
      h2
        L Hawaiian Vac...
      button
        L Get Price
```

---

application.js

```javascript
$(document).ready(function() {
    var price = $('<p>From $399.99</p>');
    $('.vacation').after(price);
});
```
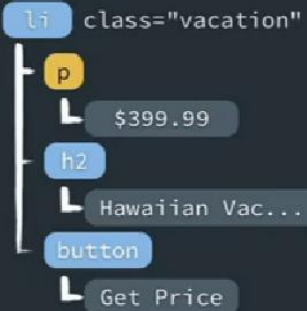
Puts the price node after .vacation

DOCUMENT

```
li    class="vacation"
  h2
    L Hawaiian Vac...
  button
    L Get Price
p
  L $399.99
```

application.js

```javascript
$(document).ready(function() {
  var price = $('<p>From $399.99</p>');
  $('.vacation').prepend(price);
});
```
❌

*Adds the node to the top of **.vacation***

DOCUMENT

```
li   class="vacation"
  p
    L  $399.99
  h2
    L  Hawaiian Vac...
  button
    L  Get Price
```

Prepend and Append

application.js

```javascript
$(document).ready(function() {
  var price = $('<p>From $399.99</p>');
  $('.vacation').append(price);
});
```
✔

*Puts the price node at the bottom of **.vacation***

DOCUMENT

```
li   class="vacation"
  h2
    L  Hawaiian Vac...
  button
    L  Get Price
  p
    L  $399.99
```

Removing from the DOM

application.js

```javascript
$(document).ready(function() {
  var price = $('<p>From $399.99</p>');
  $('.vacation').append(price);
  $('button').remove();
});
```
✔

*Removes the **<button>** from the DOM*

DOCUMENT

```
li   class="vacation"
  h2
    L  Hawaiian Vac...
  button
    L  Get Price
  p
    L  $399.99
```
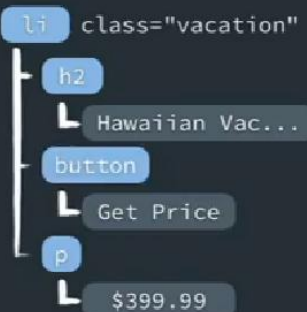
Appending to the DOM

application.js

```javascript
$(document).ready(function() {
    var price = $('<p>From $399.99</p>');
    $('.vacation').append(price);
    $('button').remove();
});                          Appends in the
```

```
.appendTo(<element>)        .prependTo(<element>)
```

```
.insertAfter(<element>)     .insertBefore(<element>)
```

```javascript
price.appendTo($('.vacation'));
```

DOCUMENT

```
li    class="vacation"

  h2
    L  Hawaiian Vac...
  button
    L  Get Price
```

Price node (not in the DOM yet)

```
p
  L  $399.99
```

Passing in a function

```javascript
$(document).ready(<event handler function>);
```

The ready method takes an event handler function as argument

```javascript
function() {
    // executing the function runs the code
    // between the braces
}
```

We create a function with the function keyword

```javascript
$(document).ready(function() {
    // this function runs when the DOM is ready
});
```

And we pass this function as an argument to the ready method.

Watching for Click

application.js

```javascript
$(document).ready(function() {
  // runs when the DOM is ready
});
```

Target all buttons

Watch for any clicks

```javascript
$('button').on('click', function() {
  // runs when any button is clicked
});
```

Run the code inside of this function

DOCUMENT

```
li    class="vacation"
  h2
    Hawaiian Vacation
  button
    Get Price
```

jQuery Object Methods

```
.on(<event>, <event handler>)
```

Removing from the DOM

application.js

runs when the DOM is ready

```javascript
$(document).ready(function() {
  $('button').on('click', function() {
    // run this function on click
  });
});
```

runs when a button is clicked

DOCUMENT

```
li    class="vacation"
  h2
    Hawaiian Vacation
  button
    Get Price
```

Removing from the DOM

application.js

```javascript
$(document).ready(function() {
  $('button').on('click', function() {
    var price = $('<p>From $399.99</p>');
    $('.vacation').append(price);
    $('button').remove();
  });
});
```

DOCUMENT

```
li    class="vacation"
  h2
    Hawaiian Vacation
  p
    $399.99
```

Working, but with Errors

application.js

```
$(document).ready(function() {
  $('button').on('click', function() {
    var price = $('<p>From $399.99</p>');
    $('.vacation').append(price);
    $('button').remove();
  });
});
```

Every button will be removed

The price will be appended to both .vacation elements

DOCUMENT

```
div  id="vacations"
 └ ul
     ├ li  class="vacation"
     │   ├ button
     │   └ p
     ├ li  class="vacation"
         ├ button
         └ p
```

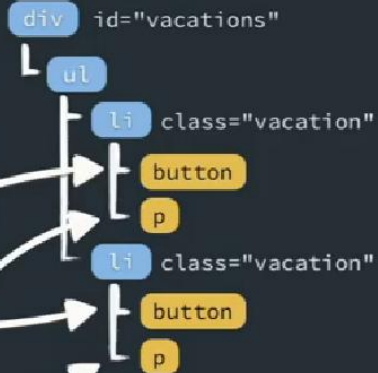# An Introduction to $(this)

application.js

```
$(document).ready(function() {
  $('button').on('click', function() {
    var price = $('<p>From $399.99</p>');
    $('.vacation').append(price);
    $('button').remove();
  });
});
```

if clicked, the button will be 'this'

```
this.remove();
```

Not a jQuery object, needs to be converted

```
$(this).remove();
```

DOCUMENT

```
div  id="vacations"
 └ ul
     ├ li  class="vacation"
     │   ├ button
     │   └ p
     ├ li  class="vacation"
         ├ button
         └ p
```

An Introduction to $(this)

application.js

```javascript
$(document).ready(function() {
  $('button').on('click', function() {
    var price = $('<p>From $399.99</p>');
    $('.vacation').append(price);
    $(this).remove();
  });
});
```
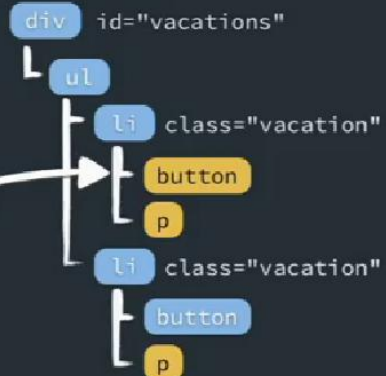
✔

Only removes whichever button was clicked

DOCUMENT

```
div  id="vacations"
  ul
    li  class="vacation"
      button
      p
    li  class="vacation"
      button
      p
```

Vacation Packages
jQuery Travels

Hawaiian Vacation

Comments on this deal:
"Amazing Deal!"
"Can't wait to take this trip!"

From $399.99

From $399.99

From $399.99

Orlando

Comments on this deal:
There aren't any comments on this deal yet.

From $399.99

From $399.99

From $399.99

Visit Japan

Comments on this deal:
"Never been, but can't wait!"

From $399.99

From $399.99

From $399.99

Call us at 555-2593 to make a reservation today!

Traversing from $(this)

application.js

```javascript
$(document).ready(function() {
  $('button').on('click', function() {
    var price = $('<p>From $399.99</p>');
    $(this).after(price);
    $(this).remove();
  });
});
```

✔

Add the price as a sibling after button

DOCUMENT

```
ul
  li  class="vacation"
    h2
      Hawaiian Vac...
    button
      Get Price
    p
      $399.99
```

Using .closest(<selector>)

application.js

```
$(this).after(price);                              ✕

$(this).parent().parent().append(price);          !

$(this).parents('.vacation').append(price);        !

$(this).closest('.vacation').append(price);        ✓
```

DOCUMENT

```
ul
  └ li   class="vacation"
       ├ h2
       │   └ Hawaiian Vac...
       ├ div
       │   └ button
       │        └ Get Price
       └ p
           └ $399.99
```

Our Finished Handler

application.js

```
$(document).ready(function() {
  $('button').on('click', function() {
    var price = $('<p>From $399.99</p>');
    $(this).closest('.vacation').append(price);
    $(this).remove();
  });
});
```
✓

Adds the <p> node at the bottom of .vacation

DOCUMENT

```
ul
  └ li   class="vacation"
       ├ h2
       │   └ Hawaiian Vac...
       ├ button
       │   └ Get Price
       └ p
           └ $399.99
```

```html
<li class="vacation onsale" data-price='399.99'>
  <h3>Hawaiian Vacation</h3>
  <button>Get Price</button>
  <ul class='comments'>
    <li>Amazing deal!</li>
    <li>Want to go!</li>
  </ul>
</li>
```

All data attributes begin with 'data-'

```javascript
$('.vacation').first().data('price');
"399.99"
```

jQuery Object Methods

`.data(<name>)`

`.data(<name>, <value>)`

```javascript
$(document).ready(function() {
  $('button').on('click', function() {
    var price = $('<p>From $399.99</p>');
    $(this).closest('.vacation').append(price);
    $(this).remove();
  });
});
```

Reads from the data-price attribute

```javascript
var amount = $(this).closest('.vacation').data('price');
var price = $('<p>From $'+amount+'</p>');
```

Joins two strings to create the price

\

```javascript
$(document).ready(function() {
  $('button').on('click', function() {

    var amount = $(this).closest('.vacation').data('price');
    var price = $('<p>From $'+amount+'</p>');

    $(this).closest('.vacation').append(price);
    $(this).remove();
  });
});
```

Each vacation can have its own price

```javascript
$(document).ready(function() {
  $('button').on('click', function() {

    var vacation = $(this).closest('.vacation');
    var amount = vacation.data('price');
    var price = $('<p>From $'+amount+'</p>');
    vacation.append(price);

    $(this).remove();
  });
});
```

```
$('.vacation button').on('click', function() {});    [!]

$('.vacation').on('click', 'button', function() {});    [✓]
```

```
$('.vacation.onsale')    [!]

$('.vacation').filter('.onsale')    [✓]
```

Class Manipulation

```
.addClass(<class>)    [✓]          .removeClass(<class>)
```

```
<li class="confirmation">
    ...                          Clicking this button...
    <button>FLIGHT DETAILS</button>
    <ul class="ticket">...</ul>
</li>                      ...will show the ticket
```

jQuery Air Atlantic - Vacation Confirmation

Confirmations

Hawaiian Vacation

Paid $399.99 on January 14, 2013.

FLIGHT DETAILS

Call us at 555-25937 to make a reservation today!

```
.ticket {
    display: none;
}
                Hide ticket on page load
```

🎧 watch for click

🔍 find the ticket

✏️ show the ticket

```
$('li').length;
    ⮡ 3
```

To query how many nodes are on a page.

```html
<li class="confirmation">
  ...
  <button>FLIGHT DETAILS</button>
  <ul class="ticket">...</ul>
</li>
```

.slideDown()

.slideUp()

.slideToggle()

application.js

```javascript
$('.confirmation').on('click', 'button', function() {
  $(this).closest('.confirmation').find('.ticket')
});
```

Searches up through ancestors   Searches down through children

```javascript
$(document).ready(function() {
  alert($('button').length);
  $('.confirmation').on('click', 'button', function() {
    $(this).closest('.confirmation').find('.ticket').slideDown();
  });
});
```

```javascript
$(document).ready(function() {
  $('.confirmation').on('click', 'button', function() {
    $(this).closest('.confirmation').find('.ticket').slideDown();
  });
  $('.confirmation').on('?', 'h3', function() {
    $(this).closest('.confirmation').find('.ticket').slideDown();
  });
});
```

What event should we watch for?

Mouse Events

click	focusin	mousedown	mousemove	mouseover	mouseenter ✔
dblclick	focusout	mouseup	mouseout	mouseleave	

```javascript
function showTicket () {
  $(this).closest('.confirmation').find('.ticket').slideDown();
}
$(document).ready(function() {
  $('.confirmation').on('click', 'button', showTicket);
  $('.confirmation').on('mouseenter', 'h3', showTicket);
});
```

Don't add () at the end - that would execute the function immediately

```javascript
$(document).ready(function() {
  $('.vacation').on('?', '.quantity', function() {
  });
});
```

Which event should we use?

Keyboard Events

| keypress |
| keydown |
| keyup ✔ |

Form Events

| blur | select | change |
| focus | submit |

http://api.jquery.com/category/events/keyboard-events/
http://api.jquery.com/category/events/form-events/

application.js

```javascript
$(document).ready(function() {
  $('.vacation').on('keyup', '.quantity', function() {
    // Get the price for this vacation
    // Get the quantity entered
    // Set the total to price * quantity
  });
});
```

DOCUMENT

li .vacation
  p
    input .quantity
  p
    span #total

```javascript
var price = $(this).closest('.vacation').data('price');
➡ '399.99'
```

Returns price as a string

```javascript
var price = +$(this).closest('.vacation').data('price');
➡ 399.99
```

Use + to convert the string to a number

```
.val(<new value>)
```

```
.val()
```

```
$(document).ready(function() {
  $('.vacation').on('keyup', '.quantity', function() {
    var price = +$(this).closest('.vacation').data('price');
    var quantity = +$(this).val();
    $('#total').text(price * quantity);
  });
});
```

Whenever the quantity is changed, the total will be updated

```
$(document).ready(function() {
  $('.vacation').on('click', '.expand', function() {
    $(this).closest('.vacation')
           .find('.comments')
    // Show the comments ul
  });
});
```

DOCUMENT

```
ul
  └ li   .vacation
         a   .expand
           └ Show Comments
         ul   .comments
           ├ li
           └ li
```

jQuery Object Methods

```
.fadeIn()    .fadeOut()    .fadeToggle()
```

These are similar to the slide methods

```
$(document).ready(function() {
  $('.vacation').on('click', '.expand', function() {
    $(this).closest('.vacation')
           .find('.comments')
           .fadeToggle();
  });
});
```

fadeIn() .comments on first click,
fadeOut() .comments on next click.

```
<a href='#' class='expand'>Show Comments</a>
```

DOCUMENT

ul
  li .vacation
    a .expand
      Show Comments
    ul .comments
      li
      li

Follows the link!
(goes to the top of the page)

The click event will "bubble up"
to each parent node
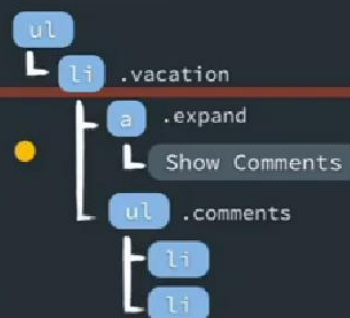
```
$(document).ready(function() {
  $('.vacation').on('click', '.expand',
    function(event) {
      event.stopPropagation();
      $(this).closest('.vacation')
             .find('.comments')
             .fadeToggle();
  });
});
```

DOCUMENT

ul
  li .vacation
    a .expand
      Show Comments
    ul .comments
      li
      li

The browser will still handle the click event but will prevent it
from "bubbling up" to each parent node.

application.js

```
$(document).ready(function() {
  $('.vacation').on('click', '.expand',
    function(event) {
      event.preventDefault();
      $(this).closest('.vacation')
             .find('.comments')
             .fadeToggle();
    }
  );
});
```

DOCUMENT

```
ul
 └ li  .vacation
     ├ a  .expand
     └    Show Comments
     ul  .comments
      ├ li
      └ li
```

The click event will "bubble up" but the browser won't handle it

```
.css(<attr>, <value>)
```

```
.css(<attr>)
```

```
.css(<object>)
```

```
$(document).ready(function() {
  $('#vacations').on('click', '.vacation', function() {
    $(this).css('background-color', '#252b30');
    $(this).css('border-color', '1px solid #967');
  });
});
```

```
$(this).css('background-color', '#252b30')
       .css('border-color', '1px solid #967');
```

```
$(this).css({'background-color': '#252b30',
             'border-color': '1px solid #967'});
```

```
.show()
```

```
.hide()
```

```
$(this).find('.price').css('display', 'block');
```

```
$(this).find('.price').show();
```

Same as CSS syntax, but easier to read and understand

```
.toggleClass()
```

```
.addClass(<class>)
```

```
.removeClass(<class>)
```

```
.animate(<object>)
```

Takes in a JavaScript object similar to the .css() method

```
$(this).css({'top': '-10px'});
```

The box will jump up 10 p

```
$(this).animate({'top': '-10px'});
```

```
.hasClass(<class>)
```

```
$(document).ready(function() {
  $('#vacations').on('click', '.vacation', function() {
    $(this).toggleClass('highlighted');
    if($(this).hasClass('highlighted')) {
      $(this).animate({'top': '-10px'});
    } else {
      $(this).animate({'top': '0px'});
    }
  });
});
```

Our vacation package will move up and down

```
$(this).animate({'top': '-10px'});
```

```
$(this).animate({'top': '-10px'}, 400);
```

```
$(this).animate({'top': '-10px'}, 'fast');
```

```
$(this).animate({'top': '-10px'}, 200);
```

```
$(this).animate({'top': '-10px'}, 'slow');
```

```
$(this).animate({'top': '-10px'}, 600);
```

*We can optionally pass in the speed as a second argument to **animate()***

*Effects methods like **animate()**, **slideToggle()** and **fadeToggle()** can also be given a specific speed as a String or in milliseconds*

application.js

```
$(document).ready(function() {
  $('#vacations').on('click', '.vacation', function() {
    $(this).toggleClass('highlighted');
  });
});
```

application.css

```
.vacation {
  -moz-transition: top 0.2s;
  -o-transition: top 0.2s;
  -webkit-transition: top 0.2s;
  transition: top 0.2s;
}
.highlighted {
  top: -10px;
}
```

Unlike jQuery, with CSS we have
to account for specific browsers