

Debugging JavaScript:

1. Reproducing Bug

```
var pet_info = {name:"Gooby", weight:"89", happiness:100, level:1};

function clickedTreatButton() {
    pet_info.happiness += 5; // Increase pet happiness
    pet_info.weight += 1; // Increase pet weight
    showPetMessage("Om nom nom nom");
    checkAndUpdatePetInfoInHtml();
    swapGengar("treat");
    gengarSounds.play.currentTime = 0;
    gengarSounds.treat.play();
}
```

Here, we make weight as a string value instead of a normal integer.

Zedric's Giga Pet



Name: **Gooby**
Weight: **891 pounds**
Happiness: **105 tail wags (per min)**
Level: **1**

Treat

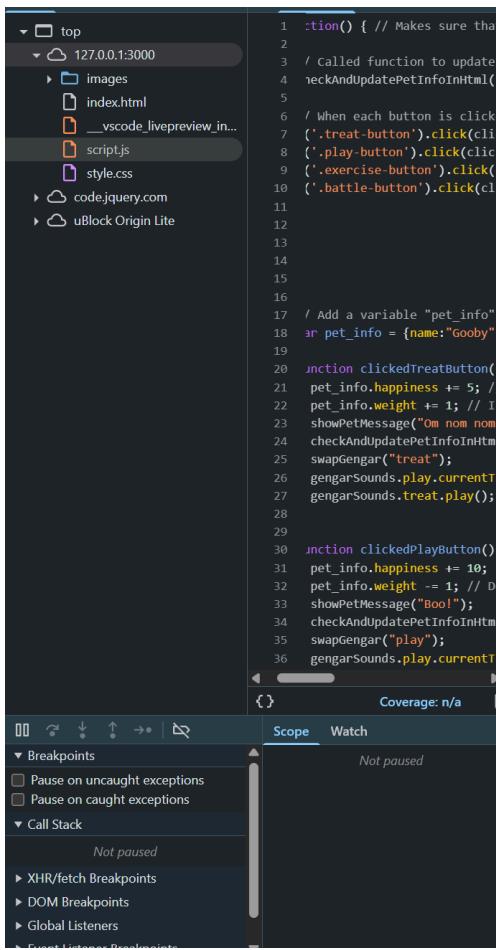
Play

Exercise

Battle

Doing so causes the weight to add 1 next to the initial 89 pounds to make it 891 pounds, when it was supposedly going to be 90 pounds after pressing the treat button.

2. Get familiar with the Sources panel UI



The screenshot shows the Chrome DevTools Sources panel. On the left, there's a tree view of the page resources, including 'top', '127.0.0.1:3000' (which contains 'images', 'index.html', '_vscode_livepreview_in...', 'script.js', and 'style.css'), 'code.jquery.com', and 'uBlock Origin Lite'. The 'script.js' file is selected and shown in the main code editor area. The code in 'script.js' is as follows:

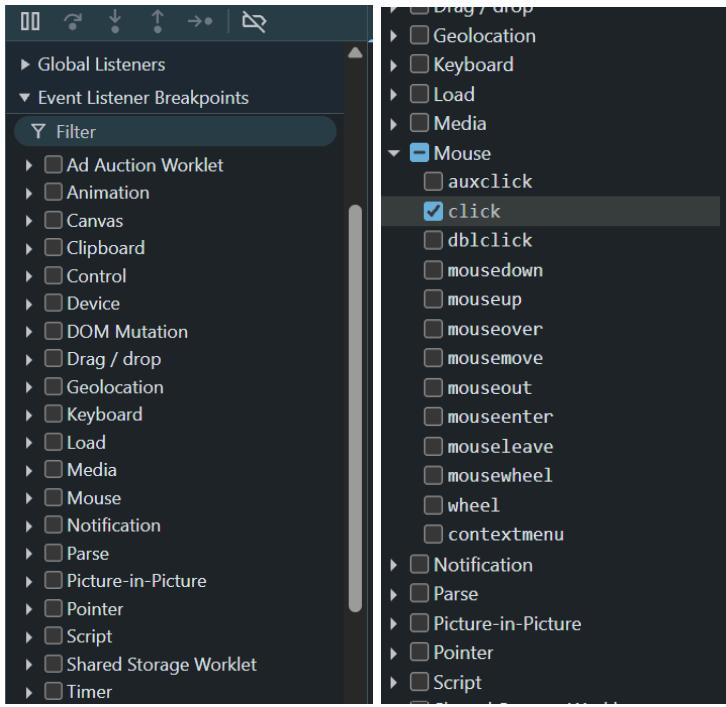
```
1  tion() { // Makes sure that
2
3  / called function to update
4  checkAndUpdatePetInfoInHtml()
5
6  / When each button is clicked
7  ('.treat-button').click(clickTreat)
8  ('.play-button').click(clickPlay)
9  ('.exercise-button').click(clickExercise)
10 ('.battle-button').click(clickBattle)
11
12
13
14
15
16
17 / Add a variable "pet_info"
18 let pet_info = {name:"Gooby"}
19
20 function clickedTreatButton()
21     pet_info.happiness += 5; // Increase happiness
22     pet_info.weight += 1; // Increase weight
23     showPetMessage("Om nom nom");
24     checkAndUpdatePetInfoInHtml();
25     swapGengar("treat");
26     gengarSounds.play.currentTime = 0;
27     gengarSounds.treat.play();
28
29
30 function clickedPlayButton()
31     pet_info.happiness += 10; // Increase happiness
32     pet_info.weight -= 1; // Decrease weight
33     showPetMessage("Boo!");
34     checkAndUpdatePetInfoInHtml();
35     swapGengar("play");
36     gengarSounds.play.currentTime = 0;
```

At the bottom of the code editor, it says 'Coverage: n/a'. Below the code editor is a toolbar with icons for file operations. To the right of the code editor is a 'Scope' tab and a 'Watch' tab, both of which are currently active. The 'Scope' tab shows 'Not paused'. At the bottom of the panel is a sidebar with sections for 'Breakpoints' (checkboxes for 'Pause on uncaught exceptions' and 'Pause on caught exceptions'), 'Call Stack' (labeled 'Not paused'), and 'XHR/fetch Breakpoints', 'DOM Breakpoints', 'Global Listeners', and 'Event Listener Breakpoints'.

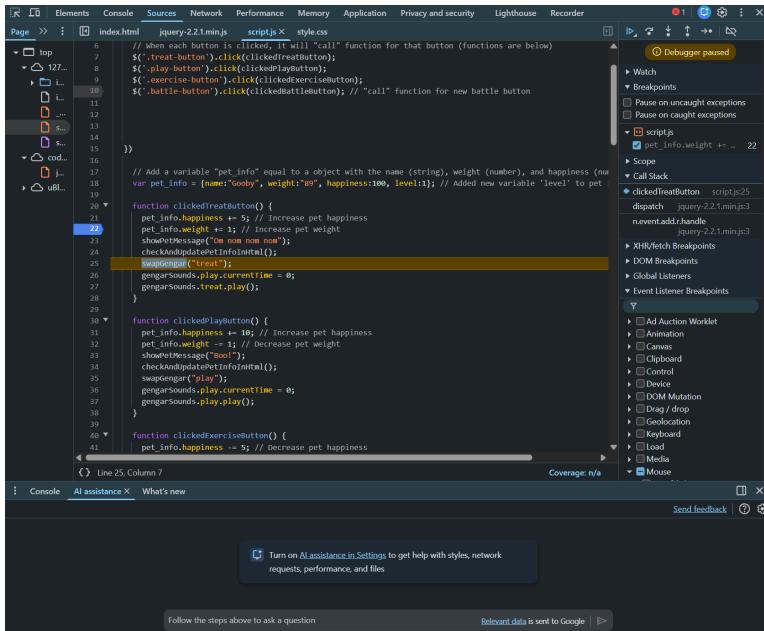
Here we have the three sections on the source panel from the DevTools

To the left we have the page, to the right we have the code editor, and on the bottom we have the debugger

3. Pause the code with a breakpoint



Now DevTools are set to pause when any click event listener executes



The line of code highlighted is where the error occurs

4. Step through the code

```

Paused in debugger ⏪ ⏴
Zedric's Giga Pet
Name: Gooby
Weight: 891 pounds
Happiness: 105 tall wags (per min)
Level: 1
Treat Play Exercise Battle

// When each button is clicked, it will "call" function for that button (functions are below)
$('.treat-button').click(clickedTreatButton);
$('.play-button').click(clickedPlayButton);
$('.exercise-button').click(clickedExerciseButton);
$('.battle-button').click(clickedBattleButton); // "call" function for new battle button

// Add a variable "pet_info" equal to a object with the name (string), weight (number), and happiness (number)
var pet_info = {name:"Gooby", weight:891, happiness:105, level:1}; // Added new variable 'level' to pet

function clickedTreatButton() {
    pet_info.happiness += 5; // Increase pet happiness
    pet_info.weight += 1; // Increase pet weight
    showPetMessage("Om nom nom nom");
    checkAndUpdatePetInfoHTML();
    swapGengar("treat");
    gengarSounds.play.currentTime = 0;
    gengarSounds.treat.play();
}

function clickedPlayButton() {
    pet_info.happiness += 10; // Increase pet happiness
    pet_info.weight -= 1; // Decrease pet weight
    showPetMessage("Boo!");
    checkAndUpdatePetInfoHTML();
    swapGengar("play");
    gengarSounds.play.currentTime = 0;
    gengarSounds.play.play();
}

function clickedExerciseButton() {
    pet_info.happiness -= 5; // Decrease pet happiness
}

```

It is at this point where the error occurs in the weight category after stepping through the code

5. Set a line-of-code breakpoint

```

Paused in debugger ⏪ ⏴
Zedric's Giga Pet
Name: Gooby
Weight: 891 pounds
Happiness: 105 tall wags (per min)
Level: 1
Treat Play Exercise Battle

// When each button is clicked, it will "call" function for that button (functions are below)
$('.treat-button').click(clickedTreatButton);
$('.play-button').click(clickedPlayButton);
$('.exercise-button').click(clickedExerciseButton);
$('.battle-button').click(clickedBattleButton); // "call" function for new battle button

// Add a variable "pet_info" equal to a object with the name (string), weight (number), and happiness (number)
var pet_info = {name:"Gooby", weight:891, happiness:105, level:1}; // Added new variable 'level' to pet

function clickedTreatButton() {
    pet_info.happiness += 5; // Increase pet happiness
    pet_info.weight += 1; // Increase pet weight
    showPetMessage("Om nom nom nom");
    checkAndUpdatePetInfoHTML();
    swapGengar("treat");
    gengarSounds.play.currentTime = 0;
    gengarSounds.treat.play();
}

function clickedPlayButton() {
    pet_info.happiness += 10; // Increase pet happiness
    pet_info.weight -= 1; // Decrease pet weight
    showPetMessage("Boo!");
    checkAndUpdatePetInfoHTML();
    swapGengar("play");
    gengarSounds.play.currentTime = 0;
    gengarSounds.play.play();
}

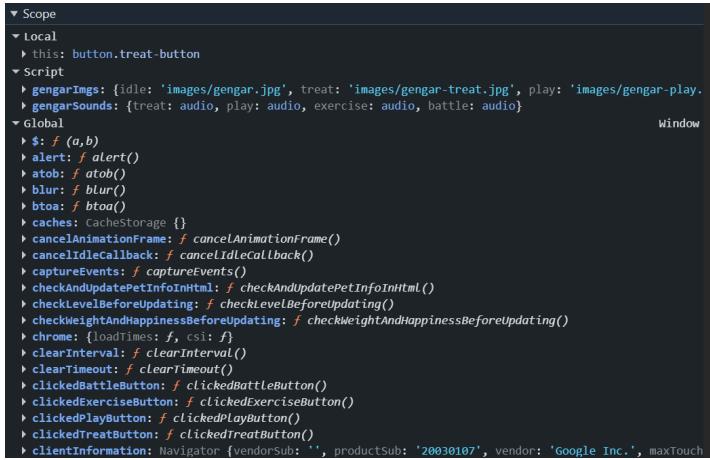
function clickedExerciseButton() {
    pet_info.happiness -= 5; // Decrease pet happiness
}

```

Here we set a line-of-code breakpoint

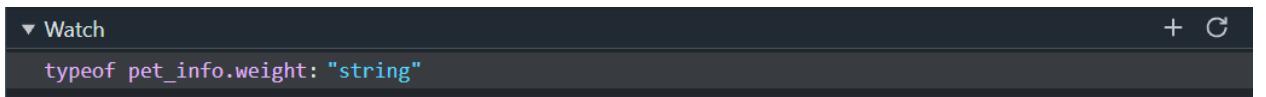
6. Check variable values

Method 1: Inspect the scope

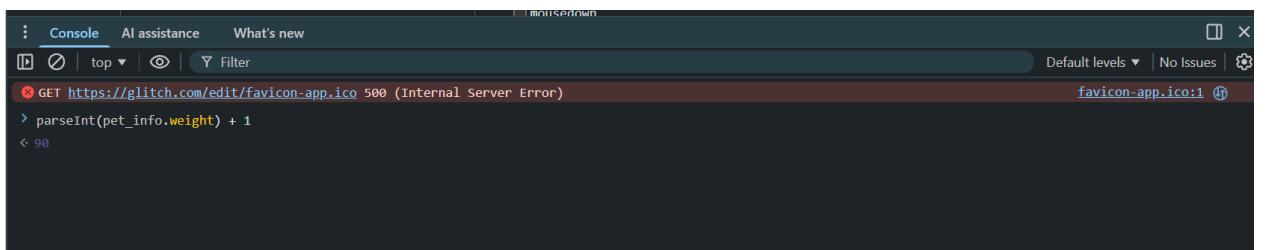


```
▼ Scope
  ▼ Local
    > this: button.treat-button
  ▼ Script
    > gengarImgs: {idle: 'images/gengar.jpg', treat: 'images/gengar-treat.jpg', play: 'images/gengar-play.jpg'}
    > gengarSounds: {treat: audio, play: audio, exercise: audio, battle: audio}
  ▼ Global
    > $: f (a,b)
    > alert: f alert()
    > atob: f atob()
    > blur: f blur()
    > btoa: f btoa()
    > caches: cacheStorage {}
    > cancelAnimationFrame: f cancelAnimationFrame()
    > cancelIdleCallback: f cancelIdleCallback()
    > captureEvents: f captureEvents()
    > checkAndUpdatePetInfoInHTML: f checkAndUpdatePetInfoInHTML()
    > checkLevelBeforeUpdating: f checkLevelBeforeUpdating()
    > checkWeightAndHappinessBeforeUpdating: f checkWeightAndHappinessBeforeUpdating()
    > chrome: {loadTimes: f, csi: f}
    > clearInterval: f clearInterval()
    > clearTimeout: f clearTimeout()
    > clickedBattleButton: f clickedBattleButton()
    > clickedExerciseButton: f clickedExerciseButton()
    > clickedPlayButton: f clickedPlayButton()
    > clickedTreatButton: f clickedTreatButton()
    > clientInformation: Navigator {vendorSub: '', productSub: '20030107', vendor: 'Google Inc.', maxTouchPoints: 1, ...
  Window
```

Method 2: Watch expressions



Method 3: The console



```
Console AI assistance What's new
Default levels ▾ | No Issues | ⚙️
GET https://glitch.com/edit/favicon-app.ico 500 (Internal Server Error)
> parseInt(pet_info.weight) + 1
< 90
```

7. Apply a fix

The screenshot shows a web application titled "Zedric's Giga Pet" featuring a Gengar-like creature named "Gooby". Below the creature, its stats are listed: Name: Gooby, Weight: 90 pounds, Happiness: 105 tall wags (per min), and Level: 1. At the bottom are four buttons: Treat, Play, Exercise, and Battle. The developer tools are open, showing the script.js file with the following code:

```
$(function() { // Makes sure that your function is called once all the DOM elements are loaded
    // called function to update the name, happiness, and weight of our pet
    checkAndUpdatePetInfoInHTML();
    // When each button is clicked, it will "call" the function for that button
    $('.treat-button').click(clickedTreatButton);
    $('.play-button').click(clickedPlayButton);
    $('.exercise-button').click(clickedExerciseButton);
    $('.battle-button').click(clickedBattleButton); // "call" function
})

// Add a variable "pet_info" equal to a object with the name (string), weight (number), happiness (number), and level (number)
var pet_info = {name:"Gooby", weight:89, happiness:100, level:1};

function clickedTreatButton() {
    pet_info.happiness += 5; // Increase pet happiness
    pet_info.weight = parseInt(pet_info.weight) + 1; // Increase pet weight
    showPetMessage("nom nom nom");
    checkAndUpdatePetInfoInHTML();
    swapGengar("treat");
    gengarSounds.play.currentTime = 0;
    gengarSounds.treat.play();
}

function clickedPlayButton() {
    pet_info.happiness += 10; // Increase pet happiness
    pet_info.weight -= 1; // Decrease pet weight
    showPetMessage("Boo!");
    checkAndUpdatePetInfoInHTML();
    swapGengar("play");
    gengarSounds.play.currentTime = 0;
}
```

The console tab shows two errors:

- GET https://glitch.com/edit/favicon-app.ico 500 (Internal Server Error)
- GET https://glitch.com/edit/favicon-app.ico 500 (Internal Server Error)

At the bottom, the command `> parseInt(pet_info.weight) + 1` is shown with a result of `90`.

Here we added `parseInt()` to the variable, `pet_info.weight`, in order to correct it into an integer and solve the error

Get started with viewing and changing the DOM:

View DOM nodes

Inspect a node

Zedric's Giga Pet

Name: Gooby
Weight: 89 pounds
Happiness: 100 tail wags (per min)
Level: 1

Treat Play Exercise Battle

Computed Styles Layout Event Listeners >

box-sizing border-box inline-block font-family Helvetica, arial, sans-serif font-weight bold font-size 700px height auto width auto

Failed to load resource: the server responded with a status of 500 ()

Navigate the DOM Tree with a keyboard

> <section class="pet-image-container">...</section>
> <section class="dashboard">
> <div>
> "Name: "
... > ... == \$0
> </div>
> <div>
> "Weight: "
 >
 > 89
 > " pounds"
 >
> </div>
> <div>...</div>

Left arrow key makes parent node collapse

```

    <section class="dashboard">
      <div> == $0
        "Name: "
          <strong>::</strong>
        </div>
      <div>
        "Weight: "
          <strong>
            <span class="weight">89</span>
            " pounds"
          </strong>
        </div>

```

Left arrow key again goes to the next parent node

```

    <div>
      "Name: "
        <strong> == $0
          <span class="name">Gooby</span>
        </strong>
      </div>
      <div>
        "Weight: "
          <strong>
            <span class="weight">89</span>
            " pounds"
          </strong>
        </div>

```

Down arrow key is used to navigate to a specific node, and right arrow key is used to expand it

Scroll into view

Zedric's Giga Pet



Name: Gooby
Weight: 89 pounds
Happiness: 100 tail wags (per min)
Level: 1

[Treat](#) [Play](#) [Exercise](#) [Battle](#)

```

Elements Console Sources Network Performance Memory Application Privacy
<!DOCTYPE html>
<html>
  <head>::</head>
  <body>
    <header>::</header>
    <main>
      <section class="pet-image-container">::</section> == $0
      <section class="dashboard">
        <div>
          "Name: "
            <strong>
              <span class="name">Gooby</span>
            </strong>
          </div>
        <div>
          "Weight: "
            <strong>
              <span class="weight">89</span>
              " pounds"
            </strong>
          </div>
        <div>::</div>
        <div>::</div>
        <!-- New behavior added -->
        <div class="button-container">::</div>
      </section>
    </main>
    <!-- Your web-app is https, so your scripts need to be too -->
    <script src="https://code.jquery.com/jquery-2.2.1.min.js" integrity="sha256-gvQgAFzTH6tr+000=" crossorigin="anonymous"></script>
  </body>
</html>

```

Scroll into view option would work if it was possible to scroll down the actual page and then utilize scroll into view in order to navigate to the specific section of the page

Show rulers

Zedric's Giga Pet



span.name 50.67 x 18

Name: Gooby
Weight: 89 pounds
Happiness: 100 tall wags (per min)
Level: 1

Treat Play Exercise Battle

```
Elements Console Sources Network Performance Memory Application Privacy and security Lighthouse Recorder
```

```
<!DOCTYPE html>
<html>
  <head>
    </head>
  <body>
    <header></header>
    <main>
      <section class="pet-image-container">
        <!-- Replace pet image with your own pet image -->
        
        <!-- Pet comment goes here -->
        <div class="pet-message"></div>
      </section>
      <section class="dashboard">
        <div>
          "Name: "
          <strong>
            <span class="name">Gooby</span> == $0
          </strong>
        </div>
        <div></div>
        <div></div>
        <div></div>
        <!-- New behavior added -->
        <div class="button-container"></div>
      </section>
    </main>
    <!-- Your web app is https, so your scripts need to be too -->
    <script src="https://code.jquery.com/jquery-2.2.1.min.js" integrity="sha256-gvQAFzTH6trSrAMoHiiPo9Xc96QsZ3fekem+0000" crossorigin="anonymous"></script>
  </body>
</html>
```

Hovering over element allows you to view its width and height

Search for nodes

Zedric's Giga Pet



Name: Gooby
Weight: 89 pounds
Happiness: 100 tall wags (per min)
Level: 1

Treat Play Exercise Battle

```
Elements Console Sources Network Performance Memory Application Privacy and security Lighthouse Recorder
```

```
Computed Styles Layout Event Listeners >
```

```
<!DOCTYPE html>
<html>
  <head>
    <script type="text/javascript" src="/_vscode_livepreview_injected_script"></script>
    <title>Zedric's Giga Pet</title> == $0
    <meta name="description" content="A cool thing made with Glitch">
    <link id="favicon" rel="icon" href="https://glitch.com/edit/favicon-app.ico" type="image/x-icon">
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <script src="script.js" defer></script>
    <link rel="stylesheet" href="style.css">
  </head>
  <body>
    <header></header>
    <main>
      <section class="pet-image-container"></section>
      <section class="dashboard">
        <div>
          "Name: "
          <strong>
            <span class="name">Gooby</span> == $0
          </strong>
        </div>
        <div>
          "Weight: "
          <strong>
            <span class="weight">89</span>
            " pounds"
          </strong>
        </div>
        <div></div>
        <div></div>
        <div></div>
        <!-- New behavior added -->
        <div class="button-container"></div>
      </section>
    </main>
  </html>
```

```
margin 0
border 0
padding 0
0 0 auto auto 0 0
0
0
0
0
```

```
Filter Show all Group
box-sizing border-box
display none
height auto
width auto
```

```
Console AI assistance What's new
Default levels | 2 Issues | 2
Failed to load resource: the server responded with a status of 500 () glitch.com/edit/favicon-app.ico:1
Unchecked runtime.lastError: Could not establish connection. Receiving end does not exist. index.html:1
Unchecked runtime.lastError: Could not establish connection. Receiving end does not exist. index.html:1
```

Edit the DOM

Edit content

Zedric's Giga Pet



Name: **Gengar**
Weight: **89 pounds**
Happiness: **100 tall wags (per min)**
Level: **1**

Treat Play Exercise Battle

```
<!DOCTYPE html>
<html>
  <head>
    <script type="text/javascript" src="/__vscode_livewebview_injected_script"></script>
    <title>Zedric's Giga Pet</title>
    <meta name="description" content="A cool thing made with Glitch">
    <link id="favicon" rel="icon" href="https://glitch.com/edit/favicon-app.ico" type="image/x-icon">
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <script src="script.js" defer></script>
    <link rel="stylesheet" href="style.css">
  </head>
  <body>
    <header>::</header>
    <main>
      <section class="pet-image-container">::</section>
      <section class="dashboard">
        <div>
          "Name: "
        <strong>
          <span class="name">Gengar</span> == $0
        </strong>
        </div>
        <div>
          "Weight: "
        <strong>
          <span class="weight">89</span>
          " pounds"
        </strong>
        </div>
        <div>::</div>
        <div>::</div>
        <!-- New behavior added -->
        <div class="button-container">::</div>
      </section>
    </main>
  </body>
</html>
```

Edit attributes

Zedric's Giga Pet



Name: **Gooby**
Weight: **89 pounds**
Happiness: **100 tall wags (per min)**
Level: **1**

Treat Play Exercise Battle

```
<!DOCTYPE html>
<html>
  <head>::</head>
  <body>
    <header>::</header>
    <main>
      <section class="pet-image-container">::</section>
      <section class="dashboard">
        <div style="background-color:gold"> == $0
          "Name: "
        <strong>
          <span class="name">Gooby</span>
        </strong>
        </div>
        <div>::</div>
        <div>::</div>
        <div>::</div>
        <!-- New behavior added -->
        <div class="button-container">::</div>
      </section>
    </main>
    <!-- Your web-app is https, so your scripts need to be too -->
    <script src="https://code.jquery.com/jquery-2.2.1.min.js" integrity="sha256-gvQAFzTH6trSrAW0H1ip09Xc96QxSZ3feW6kem+000=" crossorigin="anonymous"></script>
  </body>
</html>
```

Edit node type

Zedric's Giga Pet



Name:
Weight: **89 pounds**
Happiness: **100 tall wags (per min)**
Level: **1**

Treat Play Exercise Battle

```
<!DOCTYPE html>
<html>
  <head></head>
  <body>
    <header></header>
    <main>
      <section class="pet-image-container">
        <!-- Replace pet image with your own pet image -->
        
        <!-- Pet comment goes here -->
        <div class="pet-message"></div>
    </section>
    <section class="dashboard">
      <div>
        "Name: "
        <button> == $0
          <span class="name">Gooby</span>
        </button>
      </div>
      <div></div>
      <div></div>
      <div></div>
      <!-- New behavior added -->
      <div class="button-container"></div>
    </section>
  </main>
  <!-- Your web-app is https, so your scripts need to be too -->
  <script src="https://code.jquery.com/jquery-2.2.1.min.js" integrity="sha256-gvQgAfzTH6trSrAwH1iPo9Xc96QxSz3feW6kem+000" crossorigin="anonymous"></script>
</body>
</html>
```

Edit as HTML

Zedric's Giga Pet



Name: **Gooby**
Weight: **89 pounds**
Happiness: **100 tall wags (per min)**
Level: **1**

Treat Play Exercise Battle

```
<!DOCTYPE html>
<html>
  <head></head>
  <body>
    <header></header>
    <main>
      <section class="pet-image-container"></section>
      <section class="dashboard">
        <div>
          "Name: "
          <strong>
            <span class="name">Gooby</span>
          </strong>
        </div>
        <div>
          "Weight: "
          <strong></strong>
        </div>
        <div>
          "Happiness: "
          <strong></strong>
        </div>
        <div>Level: <strong><span class="level">1</span></strong></div>
        <div>Moveset: </div>
        <!-- New behavior added -->
        <div class="button-container"></div>
      </section>
    </main>
    <!-- Your web-app is https, so your scripts need to be too -->
    <script src="https://code.jquery.com/jquery-2.2.1.min.js" integrity="sha256-gvQgAfzTH6trSrAwH1iPo9Xc96QxSz3feW6kem+000" crossorigin="anonymous"></script>
</body>
</html>
```

Zedric's Giga Pet



Name: **Gooby**
Weight: **89 pounds**
Happiness: **100 tail wags (per min)**
Level: **1**
Moveset:

Treat Play Exercise Battle

```
<!DOCTYPE html>
<html>
  <head> ... </head>
  <body>
    <header> ... </header>
    <main>
      <section class="pet-image-container"> ... </section>
      <section class="dashboard">
        <div>
          "Name: "
          <strong>
            <span class="name">Gooby</span>
          </strong>
        </div>
        <div>
          "Weight: "
          <strong> ... </strong>
        </div>
        <div>
          "Happiness: "
          <strong> ... </strong>
        </div>
        ...
        <div> == $0
          "Level: "
          <strong> ... </strong>
        </div>
        <div>Moveset: </div>
        <!-- New behavior added -->
        <div class="button-container"> ... </div>
      </section>
    </main>
    <!-- Your web-app is https, so your scripts need to be too -->
    <script src="https://code.jquery.com/jquery-2.2.1.min.js" integrity="sha256-gvQgAFzH6trsRAwH1lPo9Xc96QxSz3feW6kem+000=" crossorigin="anonymous"></script>
  </body>
</html>
```

Duplicate a node

Zedric's Giga Pet

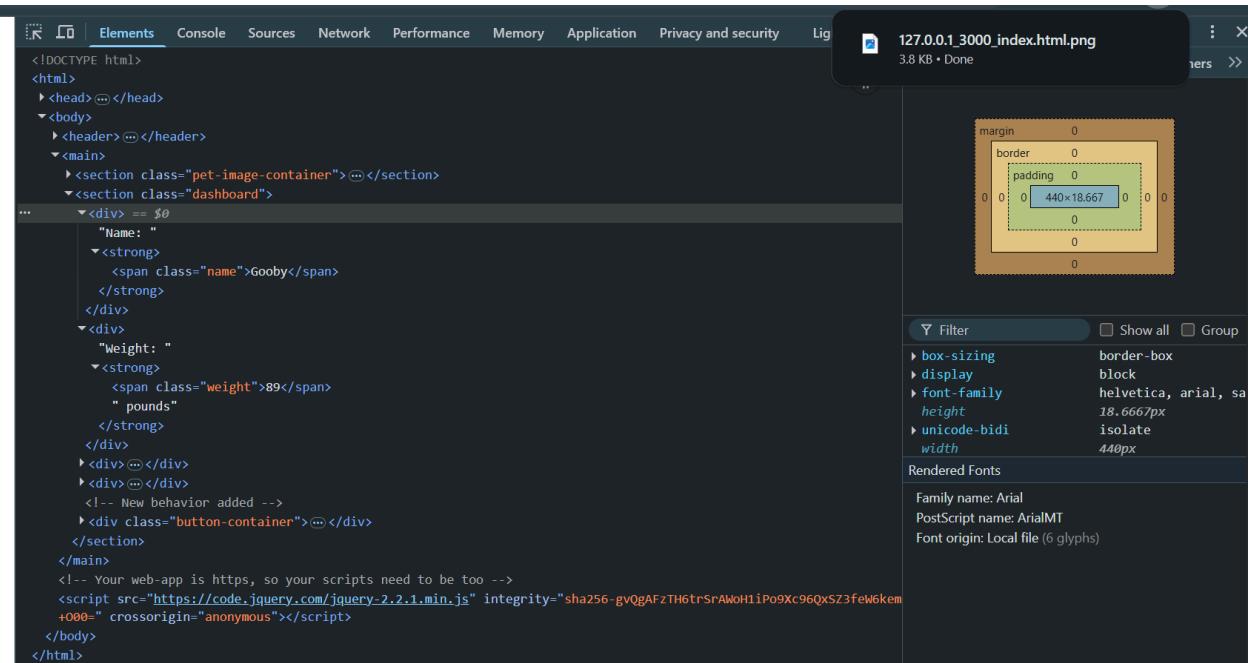


Name: **Gooby**
Name: **Gooby**
Weight: **89 pounds**
Happiness: **100 tail wags (per min)**
Level: **1**

Treat Play Exercise Battle

```
<!DOCTYPE html>
<html>
  <head> ... </head>
  <body>
    <header> ... </header>
    <main>
      <section class="pet-image-container"> ... </section>
      <section class="dashboard">
        <div>
          "Name: "
          <strong>
            <span class="name">Gooby</span>
          </strong>
        </div>
        <div>
          "Name: "
          <strong> == $0
            <span class="name">Gooby</span>
          </strong>
        </div>
        <div> ... </div>
        <div> ... </div>
        <div>
          "Level: "
          <strong> ... </strong>
        </div>
        <!-- New behavior added -->
        <div class="button-container"> ... </div>
      </section>
    </main>
    <!-- Your web-app is https, so your scripts need to be too -->
    <script src="https://code.jquery.com/jquery-2.2.1.min.js" integrity="sha256-gvQgAFzH6trsRAwH1lPo9Xc96QxSz3feW6kem+000=" crossorigin="anonymous"></script>
  </body>
</html>
```

Capture a node screenshot



The screenshot shows the Chrome DevTools Elements tab with the DOM tree. A context menu is open over a div element under the main section. The node screenshot shows a blue box with the dimensions 440x18.667px. The DevTools sidebar on the right shows various styles applied to the element.

```
<!DOCTYPE html>
<html>
  <head>...</head>
  <body>
    <header>...</header>
    <main>
      <section class="pet-image-container">...</section>
      <section class="dashboard">
        <div>= $0
          "Name: "
            <strong>
              <span class="name">Gooby</span>
            </strong>
          <div>
            "Weight: "
              <strong>
                <span class="weight">89</span>
                " pounds"
              </strong>
            </div>
          <div>...</div>
          <div>...</div>
          <!-- New behavior added -->
          <div class="button-container">...</div>
        </section>
      </main>
      <!-- Your web-app is https, so your scripts need to be too -->
      <script src="https://code.jquery.com/jquery-2.2.1.min.js" integrity="sha256-gvQgFzTH6trsAwH1iPo9Xc96QxsZ3feW6kem+000=" crossorigin="anonymous"></script>
    </body>
  </html>
```

Name: **Gooby**

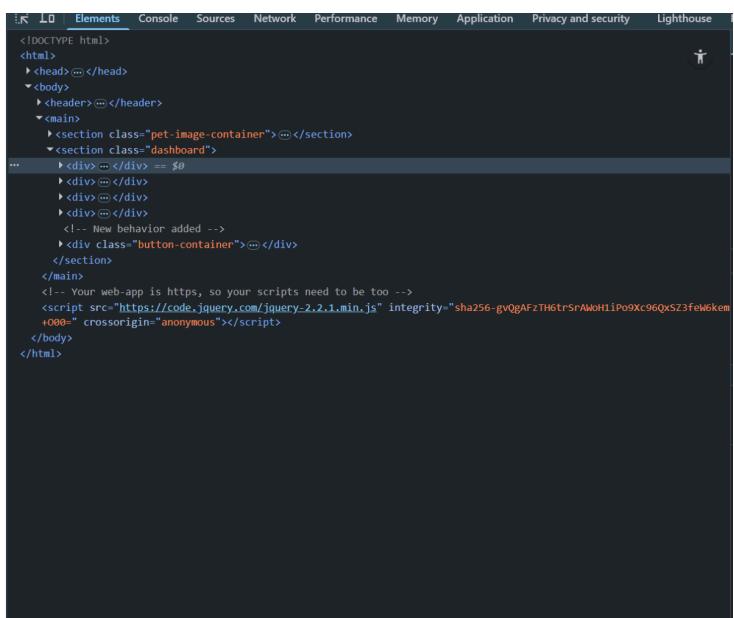
Reorder DOM nodes

Zedric's Giga Pet



Weight: **89 pounds**
Name: **Gooby**
Happiness: **100 tail wags (per min)**
Level: **1**

Treat **Play** **Exercise** **Battle**



The screenshot shows the Chrome DevTools Elements tab with the DOM tree. The 'Name' and 'Weight' nodes have been swapped in the DOM structure, demonstrating how dragging nodes changes their order. The DevTools sidebar on the right shows the applied styles.

```
<!DOCTYPE html>
<html>
  <head>...</head>
  <body>
    <header>...</header>
    <main>
      <section class="pet-image-container">...</section>
      <section class="dashboard">
        <div>= $0
          <div>...</div>
          <div>...</div>
          <div>...</div>
          <!-- New behavior added -->
          <div class="button-container">...</div>
        </section>
      </main>
      <!-- Your web-app is https, so your scripts need to be too -->
      <script src="https://code.jquery.com/jquery-2.2.1.min.js" integrity="sha256-gvQgFzTH6trsAwH1iPo9Xc96QxsZ3feW6kem+000=" crossorigin="anonymous"></script>
    </body>
  </html>
```

Here the node for weight was dragged above the node for name

Force state

Zedric's Giga Pet



Name: Gooby
Weight: 89 pounds
Happiness: 100 tall wags (per min)
Level: 1

Treat Play Exercise Battle

```
Elements Console Sources Network Performance Memory Application Privacy and security Lighthouse

<!DOCTYPE html>
<html>
  <head> ... </head>
  <body>
    <header> ... </header>
    <main>
      <style> .demo--hover:hover { background-color: orange; } </style>
      <section class="pet-image-container"> ... </section>
      <section class="dashboard">
        <div class="demo--hover"> == $0
          "Name: "
          <strong>
            <span class="name">Gooby</span>
          </strong>
        </div>
        <div> ... </div>
        <div> ... </div>
        <div> ... </div>
        <!-- New behavior added -->
        <div class="button-container">...</div>
      </section>
    </main>
    <!-- Your web-app is https, so your scripts need to be too -->
    <script src="https://code.jquery.com/jquery-2.2.1.min.js" integrity="sha256-gvQAFzIH6trSrAwOHiiPo9Xc96QxS23fewkem+000=" crossorigin="anonymous"></script>
  </body>
</html>
```

For the sake of the example, I used the “edit as html” function to add “demo–hover” to an element and then proceeded to force the node to remain in a hover state

Hide a node

Zedric's Giga Pet



Weight: 89 pounds
Happiness: 100 tall wags (per min)
Level: 1

Treat Play Exercise Battle

```
Elements Console Sources Network Performance Memory Application Privacy and security Lighthouse

<!DOCTYPE html>
<html>
  <head> ... </head>
  <body>
    <header> ... </header>
    <main>
      <section class="pet-image-container"> ... </section>
      <section class="dashboard">
        <div class=" _web-inspector-hide-shortcut_"> == $0
          "Name: "
          <strong> ... </strong>
        </div>
        <div> ... </div>
        <div> ... </div>
        <div> ... </div>
        <!-- New behavior added -->
        <div class="button-container">...</div>
      </section>
    </main>
    <!-- Your web-app is https, so your scripts need to be too -->
    <script src="https://code.jquery.com/jquery-2.2.1.min.js" integrity="sha256-gvQAFzIH6trSrAwOHiiPo9Xc96QxS23fewkem+000=" crossorigin="anonymous"></script>
  </body>
</html>
```

Delete a node

Zedric's Giga Pet



Weight: **89 pounds**
Happiness: **100 tail wags (per min)**
Level: 1

Treat Play Exercise Battle

```
Elements Console Sources Network Performance Memory Application Privacy and security Lighthouse

<!DOCTYPE html>
<html>
  > <head> </head>
  > <body>
    > <header> </header>
    > <main>
      > <section class="pet-image-container"> </section>
      > <section class="dashboard">
        ><div> == $0
          > "Weight: "
          > <strong> </strong>
        </div>
        ><div>
          > "Happiness: "
          > <strong> </strong>
        </div>
        ><div>
          > "Level: "
          > <strong> </strong>
        </div>
        <!-- New behavior added -->
        ><div class="button-container"> </div>
      </section>
    </main>
    <!-- Your web-app is https, so your scripts need to be too -->
    <script src="https://code.jquery.com/jquery-2.2.1.min.js" integrity="sha256-gvQgAfzTH6trSrAwHlPo9x96QxS23feW6kem+000=" crossorigin="anonymous"></script>
  </body>
</html>
```

Here, the node that included the name was deleted by simply pressing the delete key

Access nodes in the Console

Reference the currently-selected node with \$0

Zedric's Giga Pet



Name: **Gooby**
Weight: **89 pounds**
Happiness: **100 tail wags (per min)**
Level: 1

Treat Play Exercise Battle

```
Elements Console Sources Network Performance Memory Application Privacy and security Lighthouse Recorder
Computed Styles Layout Event Listeners >

margin 0
border 0
padding 0
0 0 0 440x18.667 0 0
0 0 0 0
0 0 0 0

Y Filter Show all Group
box-sizing border-box
display block
font-family helvetica, arial, sans-serif
height 18.6667px
unicode-bidi isolate
width 440px

Rendered Fonts
Family name: Arial
PostScript name: ArialMT
Font origin: Local file (6 glyphs)

$0
<div>
  > "Name: "
  > <strong>
  > <span class="name">gooby</span>
  </strong>
</div>
```

Zedric's Giga Pet



Name: Gooby
Weight: 89 pounds
Happiness: 100 tail wags (per min)
Level: 1

Treat Play Exercise Battle

The screenshot shows the browser's developer tools with the 'Elements' tab selected. The DOM tree on the left shows the structure of the page, including sections for 'pet-image-container' and 'dashboard'. A specific element under 'dashboard' is highlighted with a green border. The 'Computed' tab on the right displays CSS properties for this element, including 'width: 440px' and 'height: 18.6667px'. The 'Styles' tab also lists these properties.

Store as global variable

Zedric's Giga Pet



Name: Gooby
Weight: 89 pounds
Happiness: 100 tail wags (per min)
Level: 1

Treat Play Exercise Battle

This screenshot is identical to the one above it, showing the browser's developer tools with the 'Elements' tab selected. The DOM tree and the highlighted element in the 'dashboard' section are the same. The 'Computed' tab on the right shows the same CSS properties: 'width: 440px' and 'height: 18.6667px'. The 'Styles' tab also lists these properties.

Copy JS path

Zedric's Giga Pet

Zedric's Giga Pet

Break on DOM changes

The screenshot shows the Chrome DevTools interface with the "Sources" tab selected. At the top, there's a navigation bar with tabs like Page, Elements, Console, Sources, Network, Performance, Memory, Application, Privacy and security, Lighthouse, and Recorder. Below the navigation bar is a tree view of the page's structure, showing files like index.html, jquery-2.2.1.min.js, script.js, and style.css. The script.js file is open in the main editor area, displaying code related to a pet named "Gooby". The code includes functions for clicking play, exercise, and battle buttons, and a function for clicking a treat button that increases happiness and weight. A red box highlights line 21 of the script.js code. To the right of the editor is a sidebar titled "Event Listener Breakpoints" which lists various event types such as click, mouseover, and DOM mutation. Below the editor is a "Console" tab showing a single error message: "GET https://glitch.com/edit/favicon.ico 500 (Internal Server Error)".

Here, is an example on one of the DOM changes where you “Never pause here”