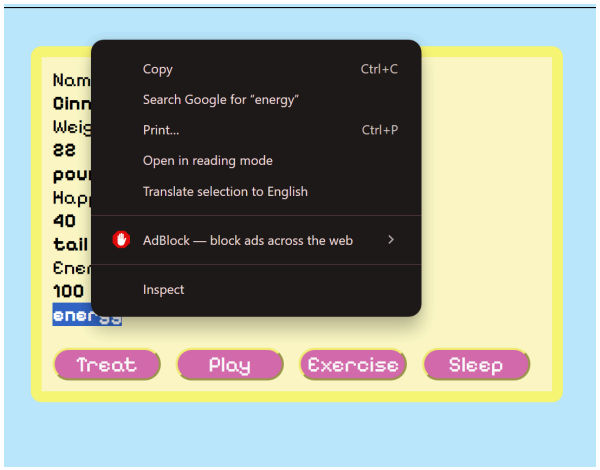
# Editing a Project by Changing the DOM

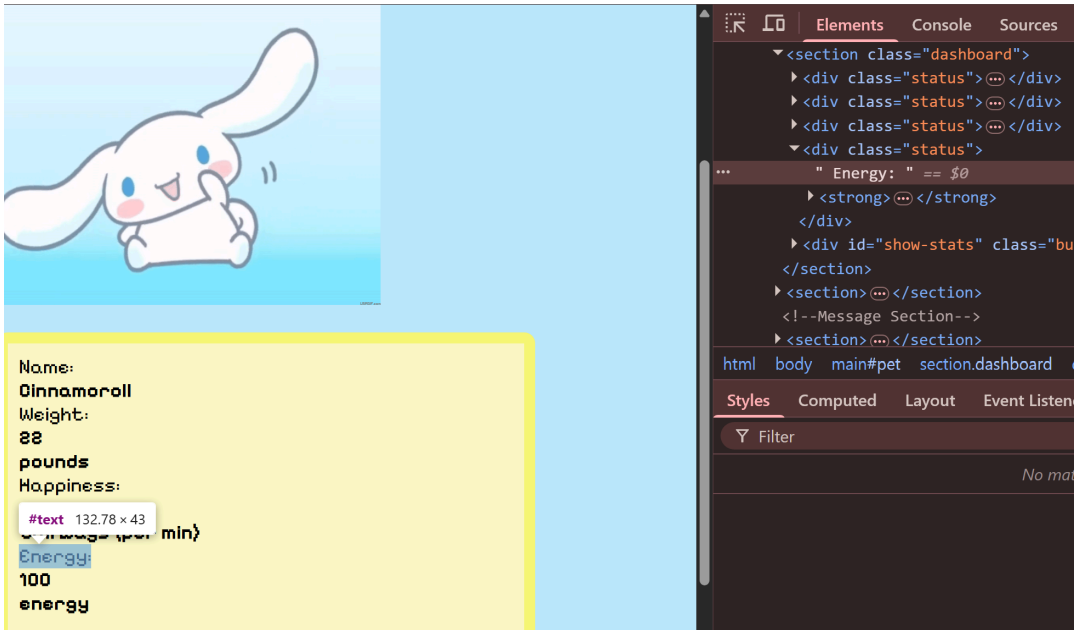
In Chrome, we can use DevTools to access the DOM of any webpage. This allows users to make temporary structural changes to a website until the page is refreshed. During this process, the browser parses the HTML and creates a tree of objects that we can access and edit through Chrome DevTools.

## Access DevTools

We can access DevTools by right-clicking on the website and selecting **Inspect**:


This opens up Chrome's  DevTools:

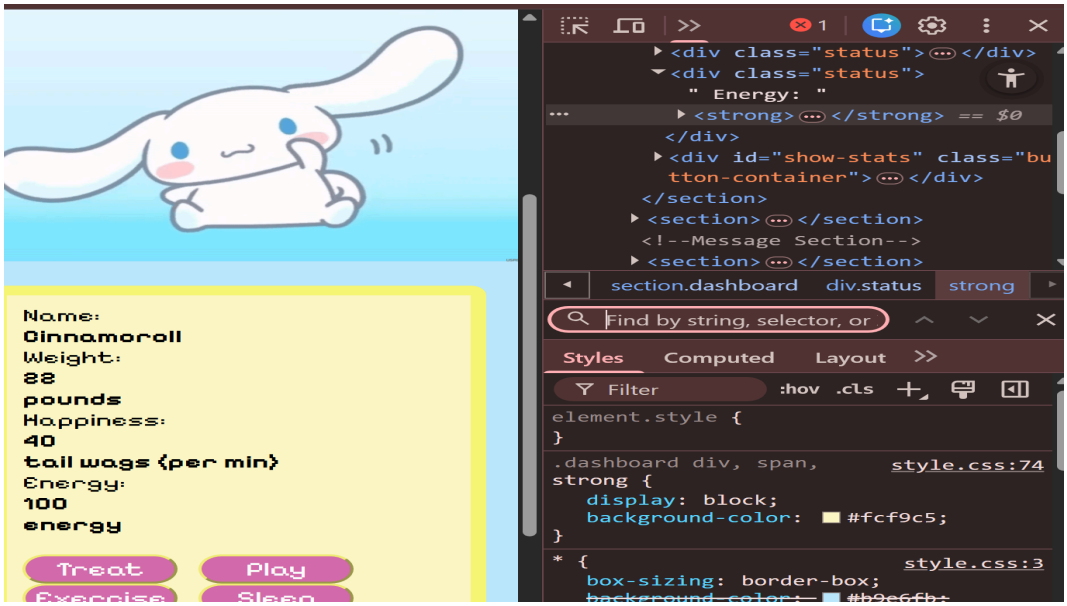



DevTools opens a panel that gives users access to several tools, including the **Elements** tab, which displays the DOM, and the **Console** tab, where users can run JavaScript commands for debugging. Note that changes made in the Console are not saved. The **Sources** tab is where programmers can view and edit files, and temporarily save changes during debugging.

Right now, I'll work on editing the nodes in the DOM to change the style of the webpage. I can edit the DOM directly in the **Elements** tab, so I am going to change the colors of the heading.

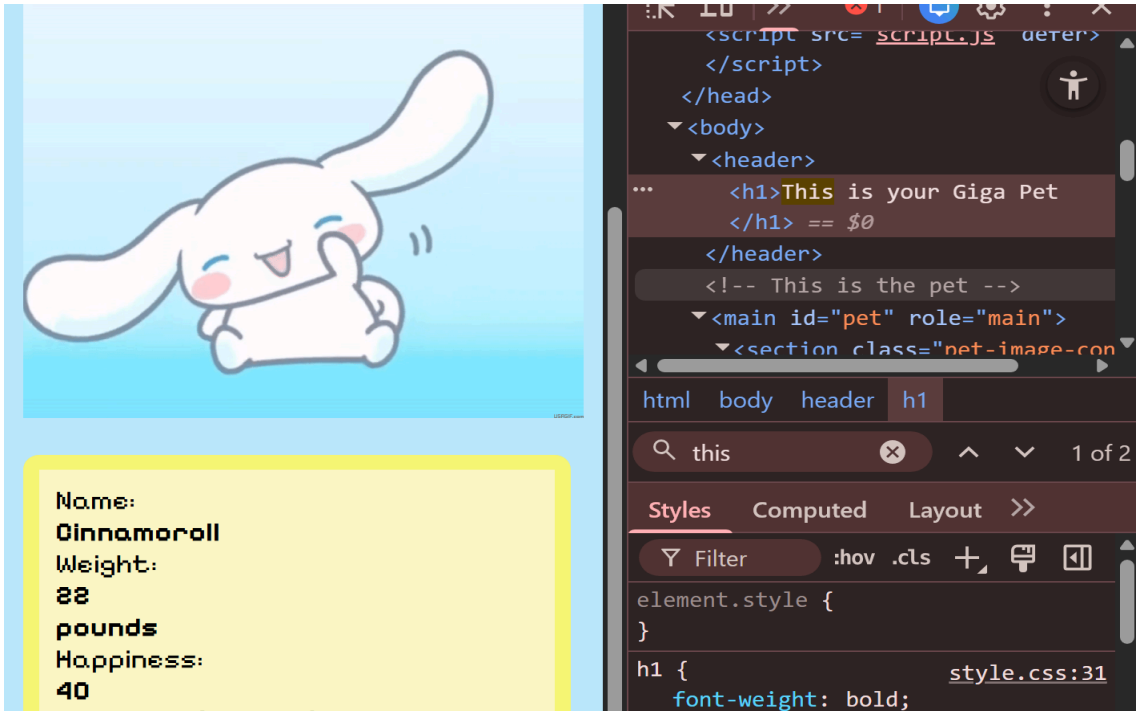
# Search Tools

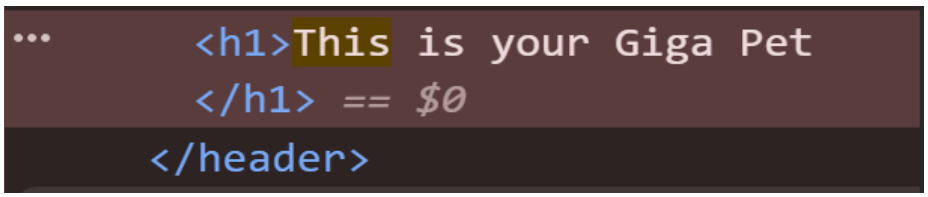
Currently, I am inspecting the node that contains the text *energy*, but I can't see the webpage heading in the viewport. There are a few easy shortcuts to find the header quickly, especially on long websites. For example, we can press **Ctrl + F** to search for the **h1** element.

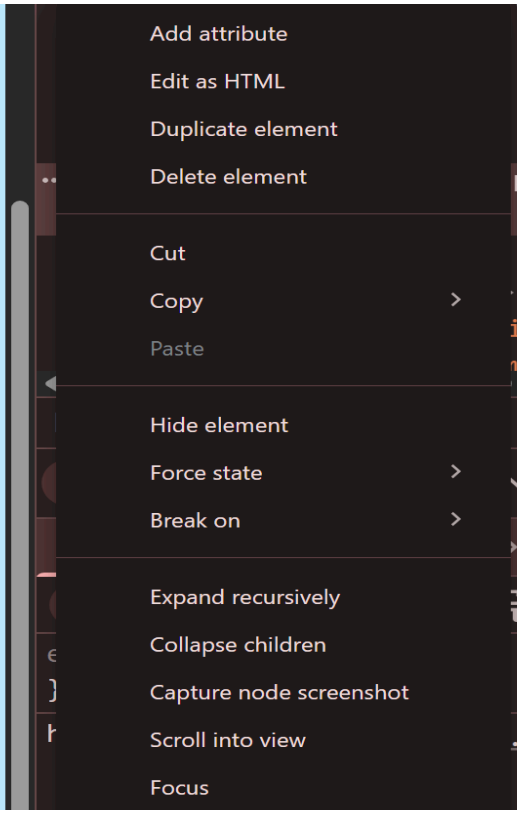



This will bring **h1** into the viewport:


Another way to locate an element and bring it into the viewport is by selecting the **h1** node and clicking the three dots on the left side. This opens the context menu, where you can choose **Scroll into View**:


Name:
Cinnamoroll
Weight:
22
pounds
Happiness:
40
<script src= script.js defer>
</script>
</head>
<body>
<header>
<h1>This is your Giga Pet
</h1> == $0
</header>
<!-- This is the pet -->
<main id="pet" role="main">
<section class="pet-image-con
html body header h1
this
1 of 2
Styles
Computed
Layout
Filter
:hov .cls
element.style {
}
h1 {
style.css:31
font-weight: bold;


<h1>This is your Giga Pet
</h1> == $0
</header>

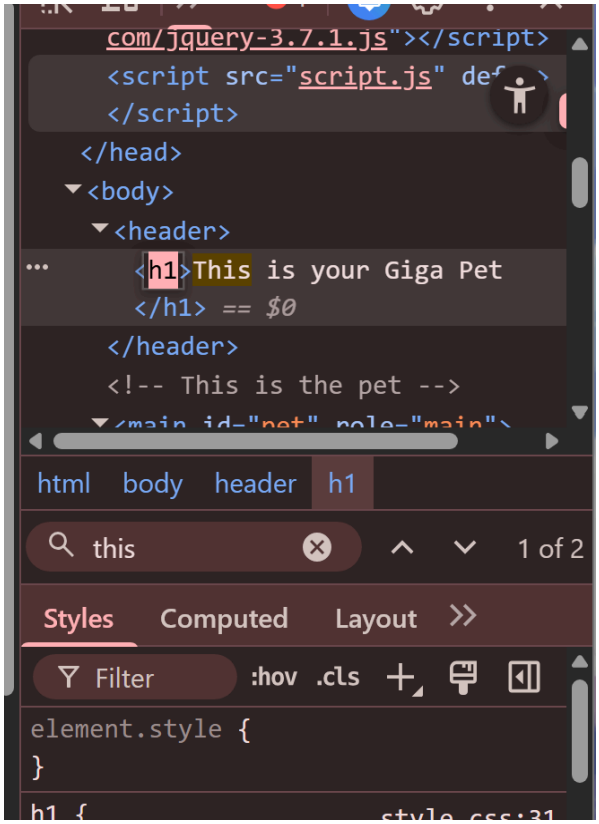


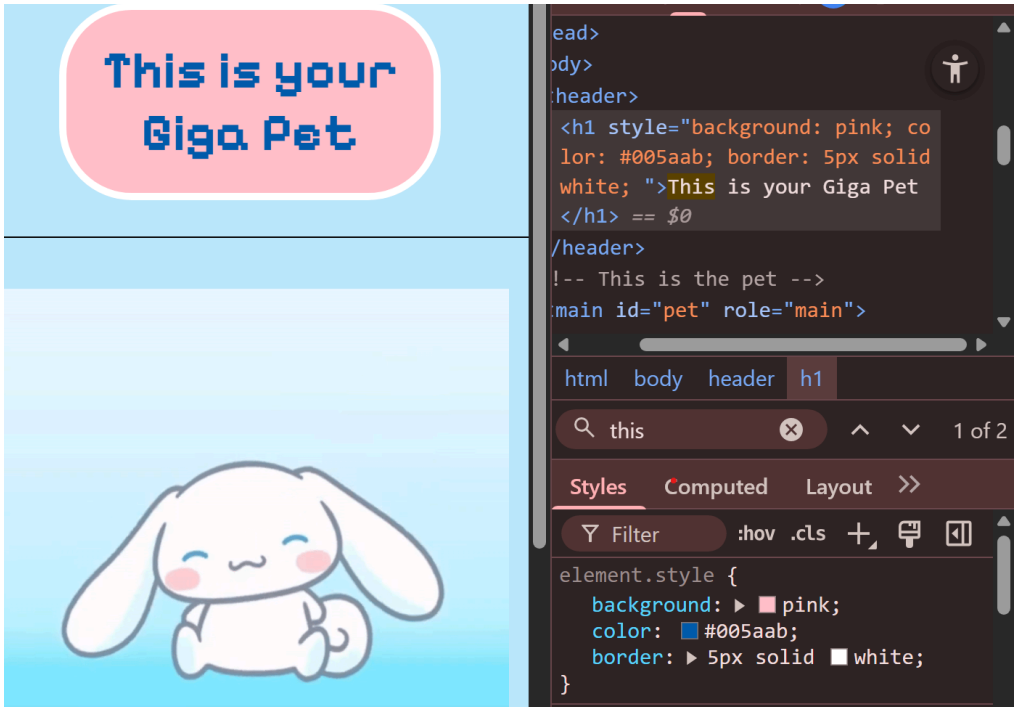


Now that I can see the heading of the webpage, I have two options for editing it: I can edit it directly in the DOM, or I can modify it through the Console tab.

# Editing DOM

I'll start by editing the style of the heading in the DOM. To do this, I click on the **h1** node and add a new background color, border color, and text color:

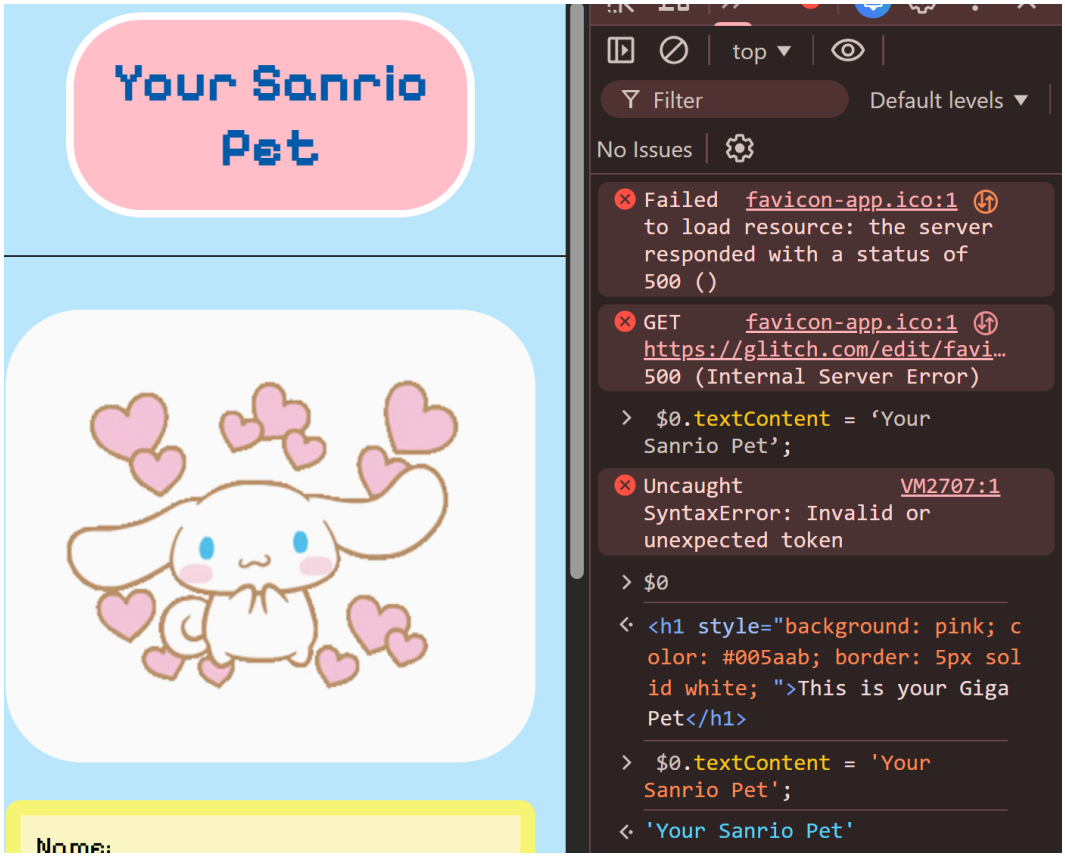

com/jquery-3.7.1.js"></script>
<script src="script.js" def
</script>
</head>
<body>
<header>
<h1>This is your Giga Pet
</h1> == $0
</header>
<!-- This is the pet -->
html body header h1
this
1 of 2
Styles Computed Layout
Filter :hov .cls
element.style {
}


This is your Giga Pet
ead>
dy>
header>
<h1 style="background: pink; co
lor: #005aab; border: 5px solid
white; ">This is your Giga Pet
</h1> == $0
/header>
!-- This is the pet -->
main id="pet" role="main">
html body header h1
this
1 of 2
Styles Computed Layout
Filter :hov .cls
element.style {
background: pink;
color: #005aab;
border: 5px solid white;
}

I can also edit the website using the Console. For example, if I want to change the text in the h1, I can click on the Console tab and type:

```
$0.textContent = 'Your Sanrio Pet';
```

I used **$0** because it refers to the currently selected node in the DOM, which is the **h1** at the moment. It allows the user to access and modify whatever that node contains.

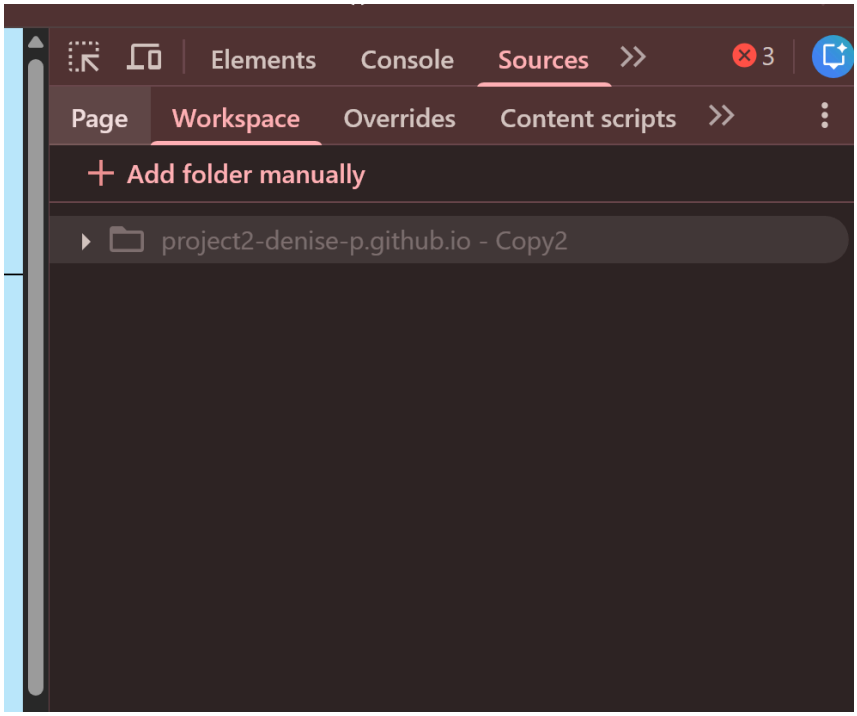



The changes to the website are coming along nicely, but once the webpage is refreshed, all of the modifications are lost.

# Permit Changes

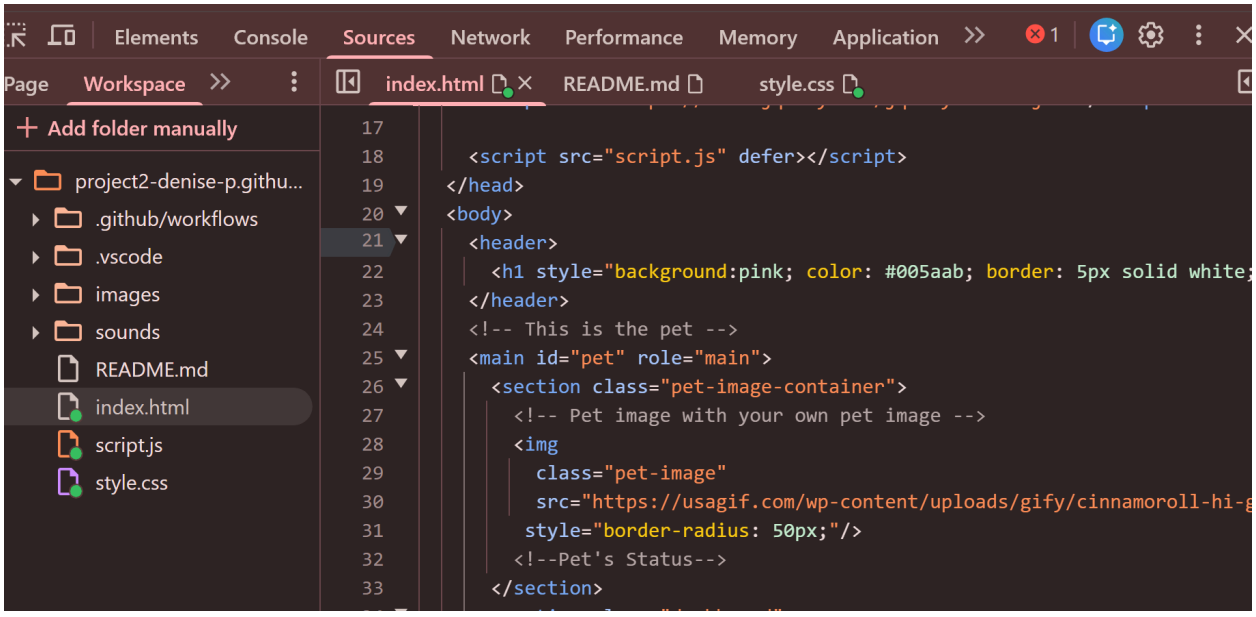
If a user wants to keep the edited code, the user needs to save changes in the workshop.

The first step to saving the changes is to click on the **Sources** tab.

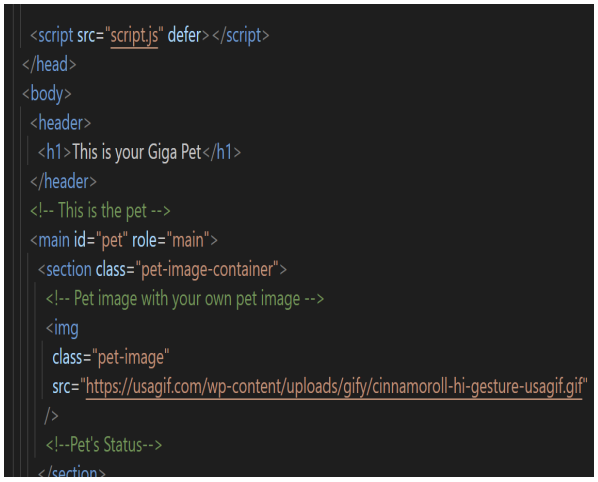



In the Source tab there is a workshop section where you can save changes. If it is empty, I can add the folder containing my code through “Add folder manually”.

Next, I can open my folder and make changes directly to the DOM. (Note: Any changes made in the workspace will be permanently saved to the files in your folder.)



Before:



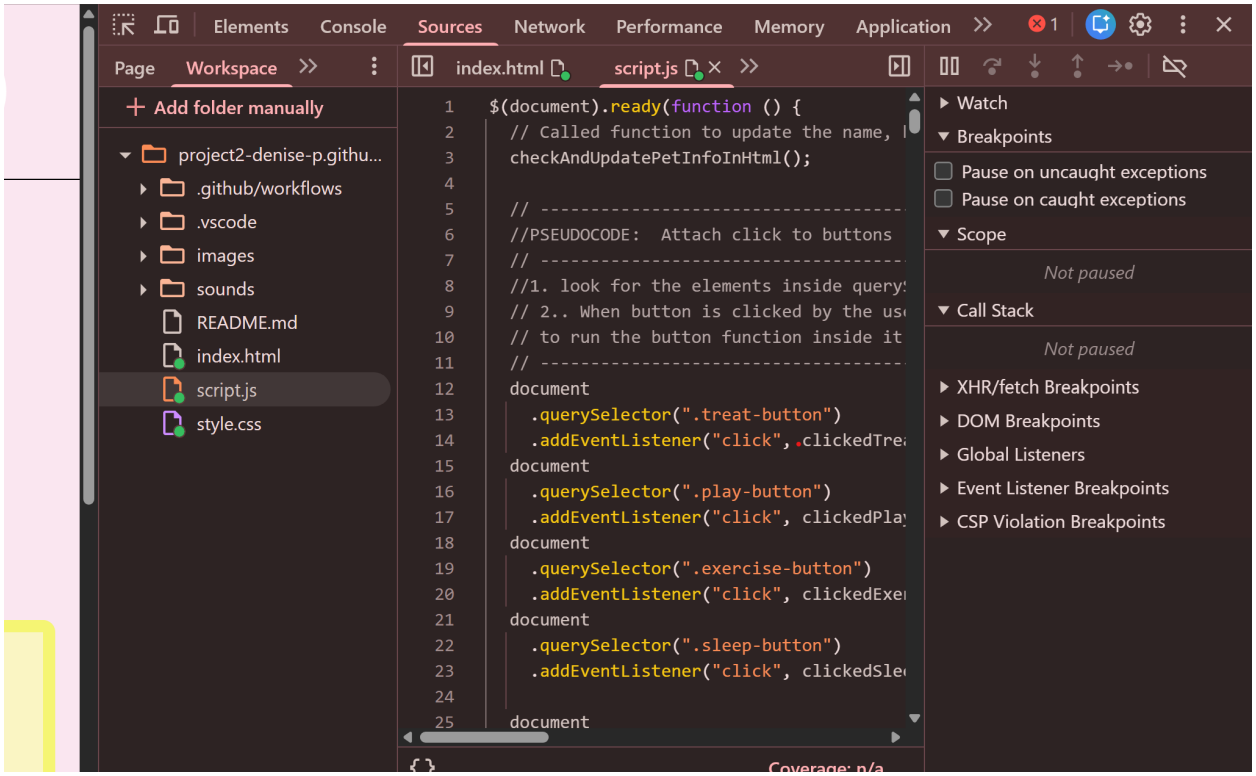

After:


# Debugging Code

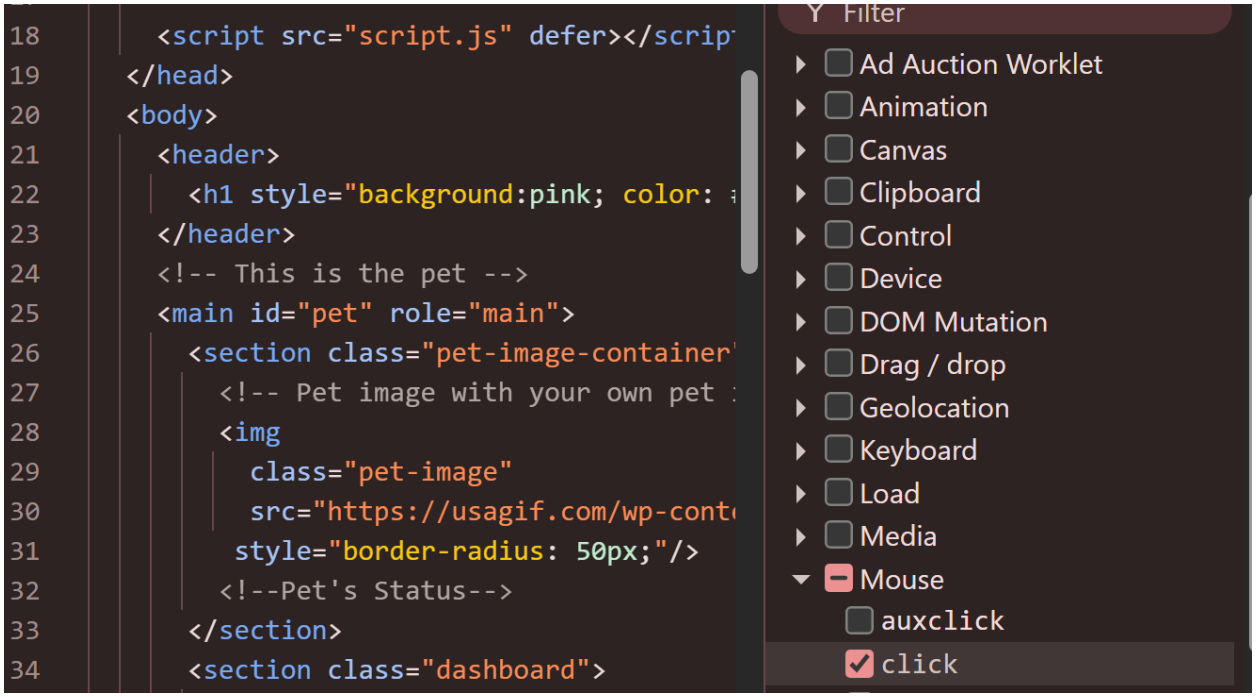
In Chrome DevTools, we can not only edit the DOM but also debug any JavaScript issues.

The main feature I want to debug is the click function. It works, but I want the pet's energy to run out faster, so I will adjust the button's functions to consume more energy.

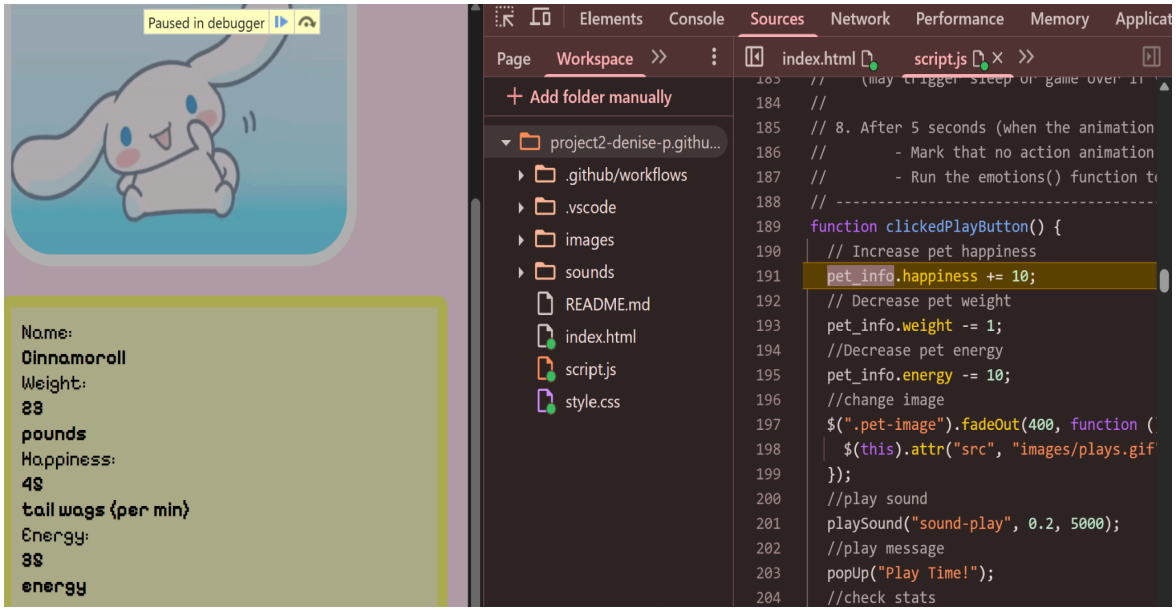
I'll start debugging by opening DevTools and navigating to the **Sources** tab.




Next, I go into the Workspace section to make sure I am in the **`script.js`** file. After that, I want to set a breakpoint on the click events to locate the function. To do this, I open **Event Listener Breakpoints**, expand the **Mouse** category, and select **click**:



Anytime I click a button, the code will pause on the first line of the click event that executes. For example, here I clicked the exercise button:




Now I am inside the clickedPlayButton function and can adjust the energy variable to remove more energy from pet_info.energy. By clicking the **Next** button, I can step to the line where the energy decreases by 10.

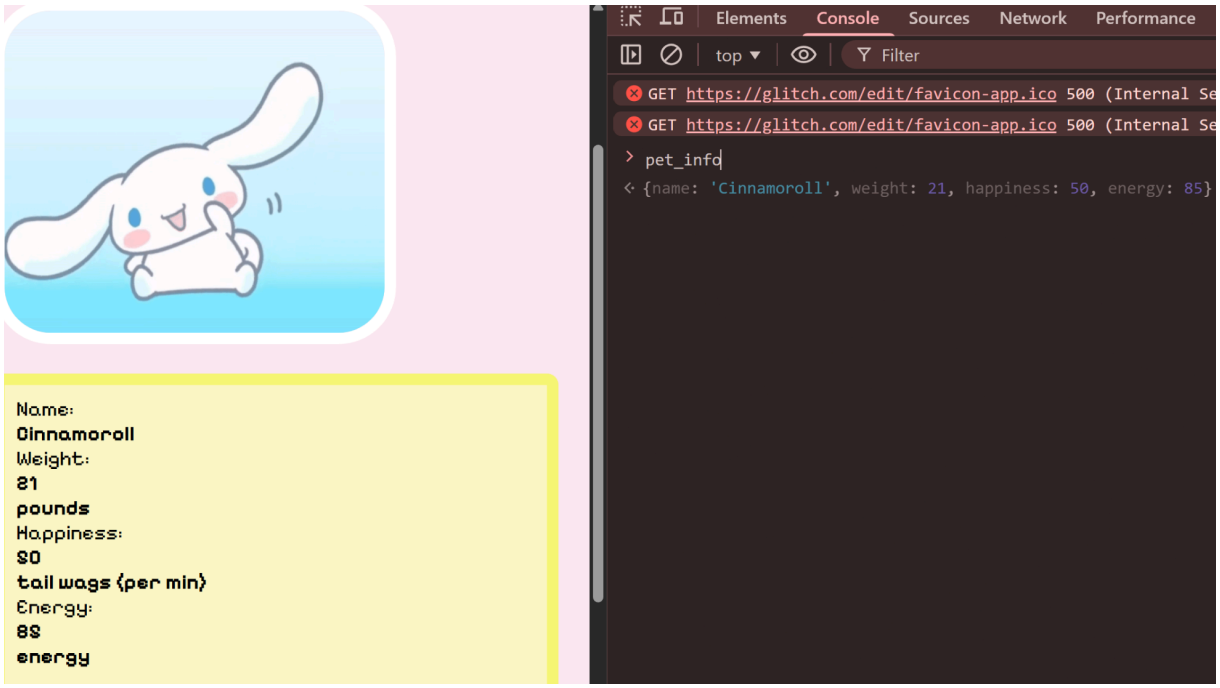
```
189 function clickedPlayButton() {
190   // Increase pet happiness
191   pet_info.happiness += 10;
192   // Decrease pet weight
193   pet_info.weight -= 1;
194   //Decrease pet energy
195   pet_info.energy -= 10;
196   //change image
```

Since I found the energy variable, I will unpause the code, change the value to 15, and save the update by pressing **Ctrl + S**.

```
189  function clickedPlayButton() {
190    // Increase pet happiness
191    pet_info.happiness += 10;
192    // Decrease pet weight
193    pet_info.weight -= 1;
194    //Decrease pet energy
195    pet_info.energy -= 15;
196    //change image
197    $(".pet-image").fadeOut(400, function (
198      $(this).attr("src", "images/plays.gif
199    });
200    //play sound
201    playSound("sound-play", 0.2, 5000);
202    //play message
203    popUp("Play Time!");
204    //check stats
205    checkAndUpdatePetInfoInHtml();
```

Energy now decreases by 15 when clicking the play button.

By looking through the console tab or checking the viewport I can view the changes



The new code also saves in VScode since we saved in the **Workshop** section: