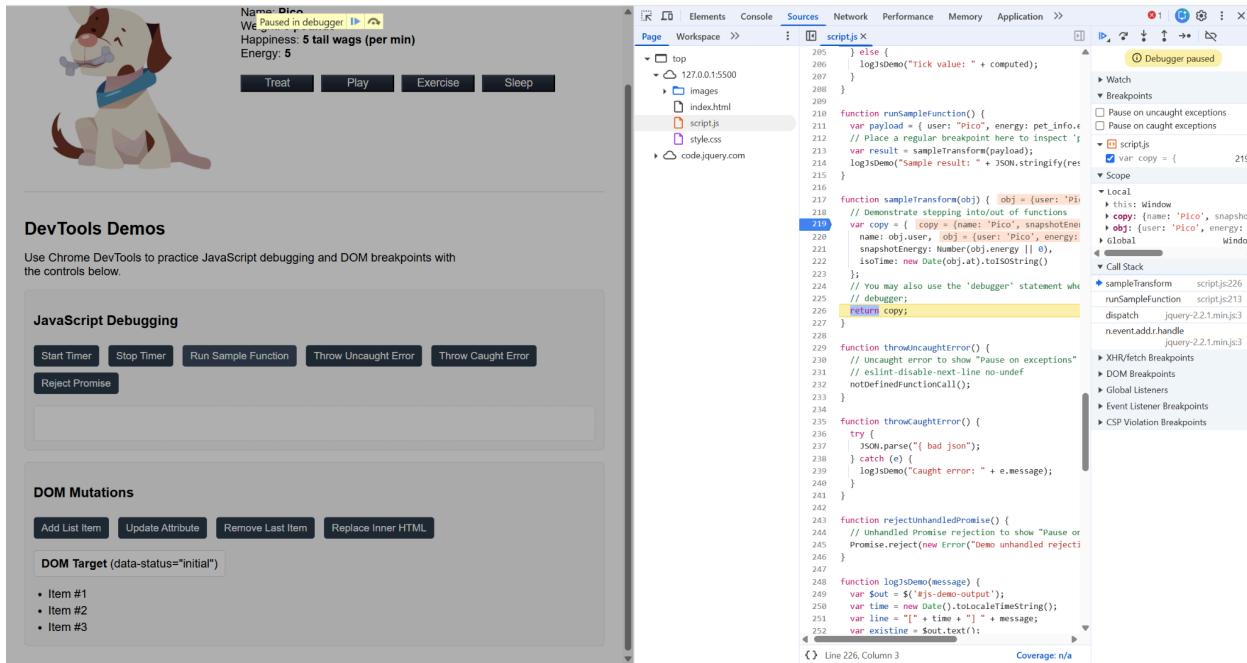


# JavaScript Debugging Demos

## 1) Breakpoints, Step Over / Into / Out

What to do:

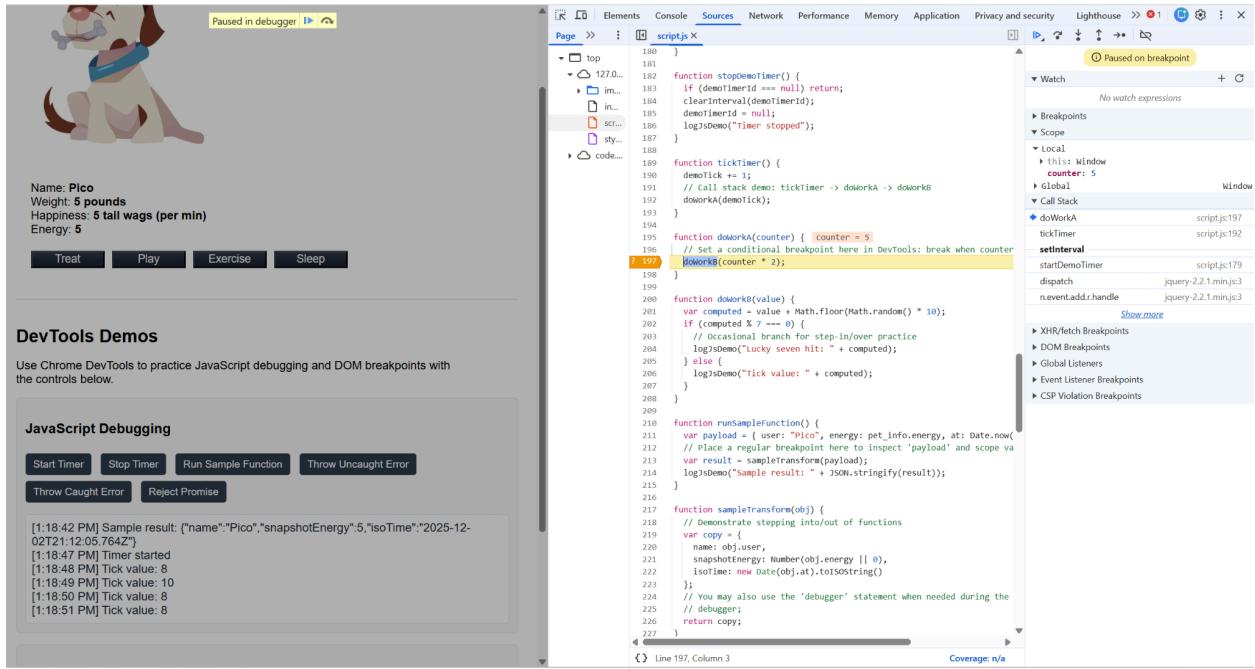
1. In DevTools, open the **Sources** panel and locate `script.js`.
2. Find the function `sampleTransform` and **set a breakpoint** inside the function body.
3. In the page UI, click “**Run Sample Function**”.
4. When execution pauses:
  - Use **Step Into** to follow function calls inside `sampleTransform`.
  - Use **Step Over** to run individual lines without going into inner calls.
  - Use **Step Out** to finish the current function and return to its caller.
5. Inspect:
  - The values of `payload` and `copy`.
  - Local and closure variables in the **Scope** panel.
  - The **Call Stack** to see how `sampleTransform` was reached.



## 2) Conditional Breakpoint / Logpoint

### What to do:

1. In `script.js`, find the function `doWorkA(counter)`.
2. In the **Sources** panel, set a breakpoint on the line inside `doWorkA`.
3. Right-click the breakpoint and choose “Edit breakpoint...”, then enter the condition:  
`counter % 5 === 0`
4. In the page, click “Start Timer”.
5. Observe how DevTools **only pauses** when `counter` is a multiple of 5.
6. Alternatively, convert the breakpoint to a **logpoint**:
  - o Right-click the same line and choose “Edit logpoint...” (or similar option, depending on Chrome version).
  - o Log something like: `"doWorkA counter:", counter`
7. Run the timer again and watch the messages in the **Console** without pausing execution.



### 3) Pause on Exceptions (Uncaught and Caught)

#### What to do:

1. In DevTools, go to the **Sources** panel and enable “**Pause on exceptions**” using the pause icon with a stop sign.
2. Optionally also enable “**Pause on caught exceptions**”.
3. Back in the page, click “**Throw Uncaught Error**”:
  - DevTools should pause at the line where the uncaught error is thrown.
4. Then click “**Throw Caught Error**”:
  - With only “**Pause on exceptions**” enabled, DevTools may not pause because the error is handled in a **try/catch**.
  - With “**Pause on caught exceptions**” also enabled, DevTools will pause even for the handled error, allowing you to inspect the error object and stack.

Name: Pico  
Weight: 5 pounds  
Happiness: 5 tail wags (per min)  
Energy: 5

Treat Play Exercise Sleep

### DevTools Demos

Use Chrome DevTools to practice JavaScript debugging and DOM breakpoints with the controls below.

#### JavaScript Debugging

Start Timer Stop Timer Run Sample Function  
Throw Uncought Error Throw Caught Error Reject Promise

```
[1:29:06 PM] Caught error: Expected property name or ')' in JSON at position 2 (line 1 column 3)
[1:29:28 PM] Caught error: Expected property name or ')' in JSON at position 2 (line 1 column 3)
[1:31:16 PM] Caught error: Expected property name or ')' in JSON at position 2 (line 1 column 3)
[1:31:23 PM] Sample result:
{"name": "Pico", "snapshotEnergy": 5, "isoTime": "2025-12-02T21:31:23.576Z"}
```

#### DOM Mutations

Add List Item Update Attribute Remove Last Item  
Replace Inner HTML

**DOM Target** (data-status="initial")

Item #1

Paused in debugger

script.js X jquery-2.2.1.min.js

```
function runSampleFunction() {
  var payload = { user: "Pico", energy: pet_info.energy, at: Date.now() };
  // Place a regular breakpoint here to inspect 'payload' and 'scope'
  var result = sampleTransform(payload);
  logJSInfo("Sample result: " + JSON.stringify(result));
}

function sampleTransform(obj) {
  // Demonstrate stepping into/out of functions
  var copy = {
    name: obj.user,
    snapshotEnergy: Number(obj.energy || 0),
    isoTime: new Date(obj.at).toISOString()
  };
  // You may also use the 'debugger' statement when needed during
  // debugger;
  return copy;
}

function throwUnccaughtError() {
  // Uncaught error to show "Pause on exceptions"
  try {
    JSON.parse(" bad json");
  } catch (e) {
    logJSInfo("Caught error: " + e.message);
  }
}

function throwCaughtError() {
  // Caught error to show "Pause on exceptions"
  // eslint-disable-next-line no-undef
  notDefinedFunctionCall();
}

function rejectUnhandledPromise() {
  // Unhandled Promise rejection to show "Pause on exceptions"
  Promise.reject(new Error("Demo unhandled rejection at " + new Date()));
}

function logJSInfo(message) {
  var $out = $("#js-demo-output");
  var time = new Date().toLocaleTimeString();
  var line = "[" + time + "] " + message;
  var existing = $out.text();
  $out.text(existing ? existing + "\n" + line : line);
}
```

Line 232, Column 3 Coverage: n/a

Paused on exception  
ReferenceError: notDefinedFunctionCall is not defined

Watch

No watch expressions

Breakpoints

Pause on uncaught exceptions  
Pause on caught exceptions

Scope

Local

Exception: ReferenceError: notDefinedFunctionCall is not defined at this.button\$btn-throw-error.demo-btn

Global

Call Stack

XHR/fetch Breakpoints  
DOM Breakpoints  
Global Listeners  
Event Listener Breakpoints  
CSP Violation Breakpoints

script.js:232 jquery-2.2.1.min.js:3 jquery-2.2.1.min.js:3

Name: Pico  
Weight: 5 pounds  
Happiness: 5 tail wags (per min)  
Energy: 5

Treat Play Exercise Sleep

### DevTools Demos

Use Chrome DevTools to practice JavaScript debugging and DOM breakpoints with the controls below.

#### JavaScript Debugging

Start Timer Stop Timer Run Sample Function  
Throw Uncought Error Throw Caught Error Reject Promise

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[1:29:06 PM] Caught error: Expected property name or ')' in JSON at position 2 (line 1 column 3)
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[1:31:23 PM] Sample result:
{"name": "Pico", "snapshotEnergy": 5, "isoTime": "2025-12-02T21:31:23.576Z"}
```

#### DOM Mutations

Add List Item Update Attribute Remove Last Item  
Replace Inner HTML

**DOM Target** (data-status="initial")

Item #1

Paused in debugger

script.js X jquery-2.2.1.min.js

```
function runSampleFunction() {
  var payload = { user: "Pico", energy: pet_info.energy, at: Date.now() };
  // Place a regular breakpoint here to inspect 'payload' and 'scope'
  var result = sampleTransform(payload);
  logJSInfo("Sample result: " + JSON.stringify(result));
}

function sampleTransform(obj) {
  // Demonstrate stepping into/out of functions
  var copy = {
    name: obj.user,
    snapshotEnergy: Number(obj.energy || 0),
    isoTime: new Date(obj.at).toISOString()
  };
  // You may also use the 'debugger' statement when needed during
  // debugger;
  return copy;
}

function throwUnccaughtError() {
  // Uncaught error to show "Pause on exceptions"
  try {
    JSON.parse(" bad json");
  } catch (e) {
    logJSInfo("Caught error: " + e.message);
  }
}

function throwCaughtError() {
  // Caught error to show "Pause on exceptions"
  // eslint-disable-next-line no-undef
  notDefinedFunctionCall();
}

function rejectUnhandledPromise() {
  // Unhandled Promise rejection to show "Pause on exceptions"
  Promise.reject(new Error("Demo unhandled rejection at " + new Date()));
}

function logJSInfo(message) {
  var $out = $("#js-demo-output");
  var time = new Date().toLocaleTimeString();
  var line = "[" + time + "] " + message;
  var existing = $out.text();
  $out.text(existing ? existing + "\n" + line : line);
}
```

Line 232, Column 3 Coverage: n/a

Paused on exception  
SyntaxError: Expected property name or ')' in JSON at position 2 (line 1 column 3)

Watch

No watch expressions

Breakpoints

Pause on uncaught exceptions  
Pause on caught exceptions

Scope

Local

Exception: SyntaxError: Expected property name or ')' in JSON at position 2 (line 1 column 3) at this.button\$btn-throw-caught-error.demo-btn

Global

Call Stack

XHR/fetch Breakpoints  
DOM Breakpoints  
Global Listeners  
Event Listener Breakpoints  
CSP Violation Breakpoints

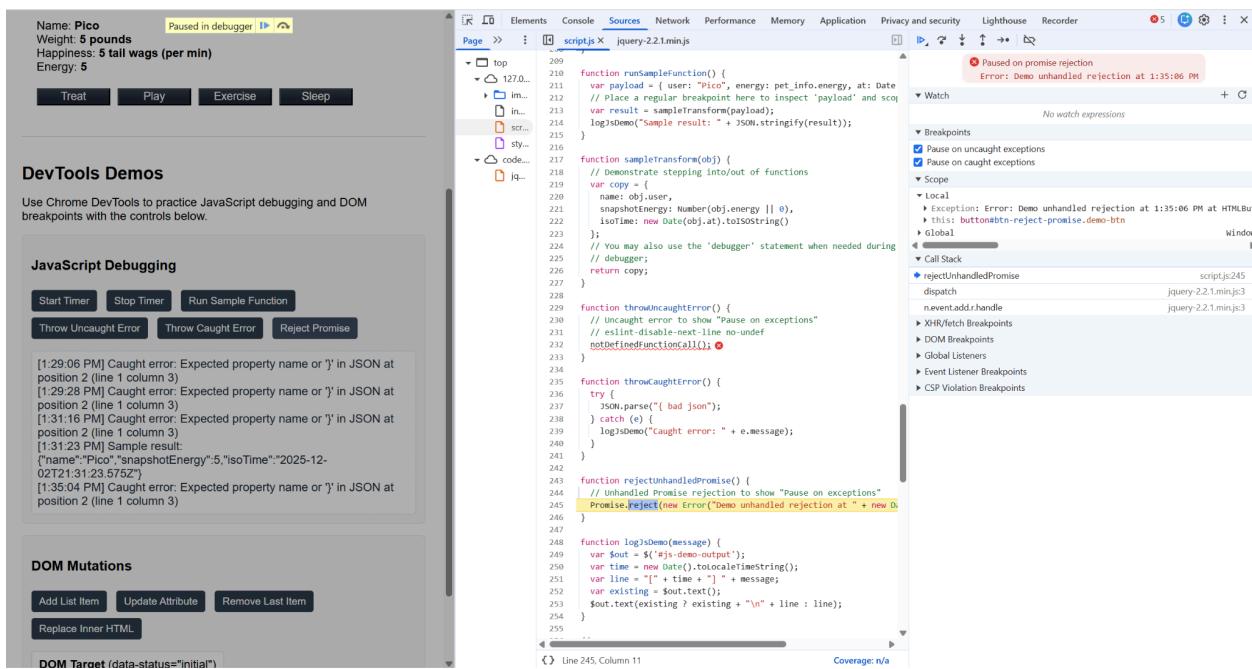
script.js:237 jquery-2.2.1.min.js:3 jquery-2.2.1.min.js:3

## 4) Unhandled Promise Rejection

### What to do:

1. In the page, click “Reject Promise”.

2. This triggers an **unhandled promise rejection** in `script.js`.
3. With **Pause on exceptions** enabled, DevTools should pause where the rejection occurs.
4. Open the **Console** to see:
  - The unhandled rejection message.
  - Any associated stack trace or context.



## DOM Demos

### 5) DOM Subtree Modification

#### What to do:

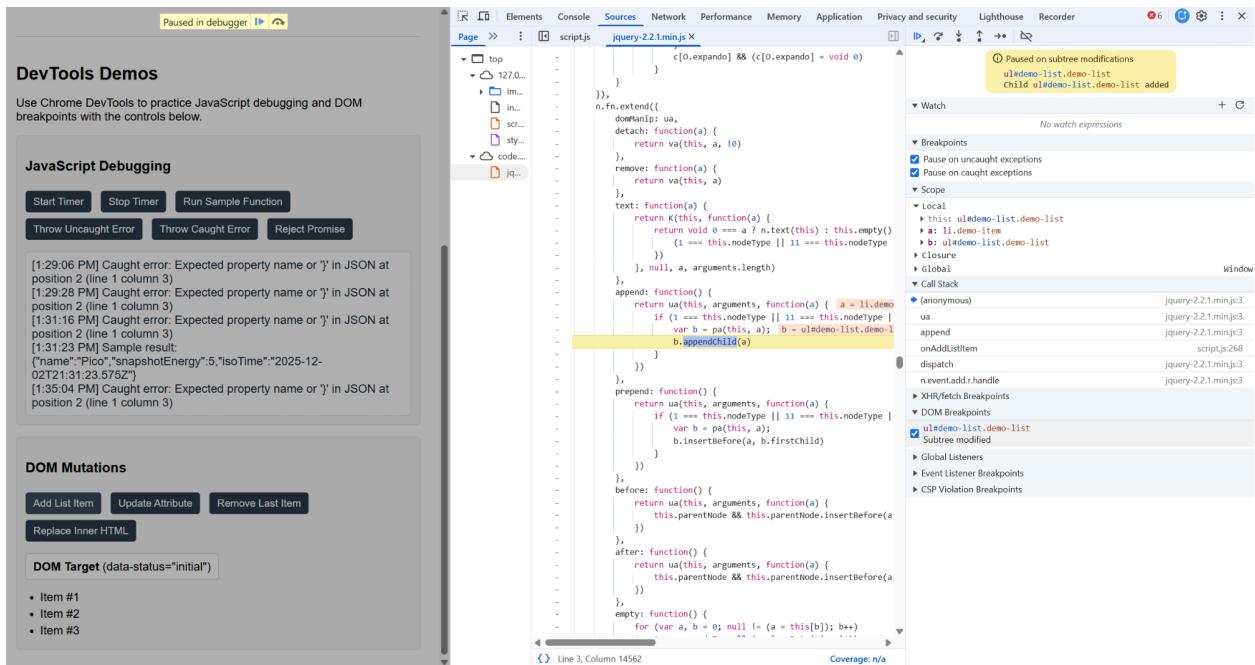
1. In DevTools, open the **Elements** panel.
2. Locate the element with id `demo-list` (e.g., `<ul id="demo-list">`).
3. Right-click `#demo-list` and choose:  
**Break on → Subtree modifications.**

#### 4. Back in the page, click “Add List Item”:

- DevTools should pause at the JavaScript line that appends a new `<li>` to `#demo-list`.

#### 5. Click “Replace Inner HTML”:

- DevTools should pause again when the inner HTML of `#demo-list` is replaced.

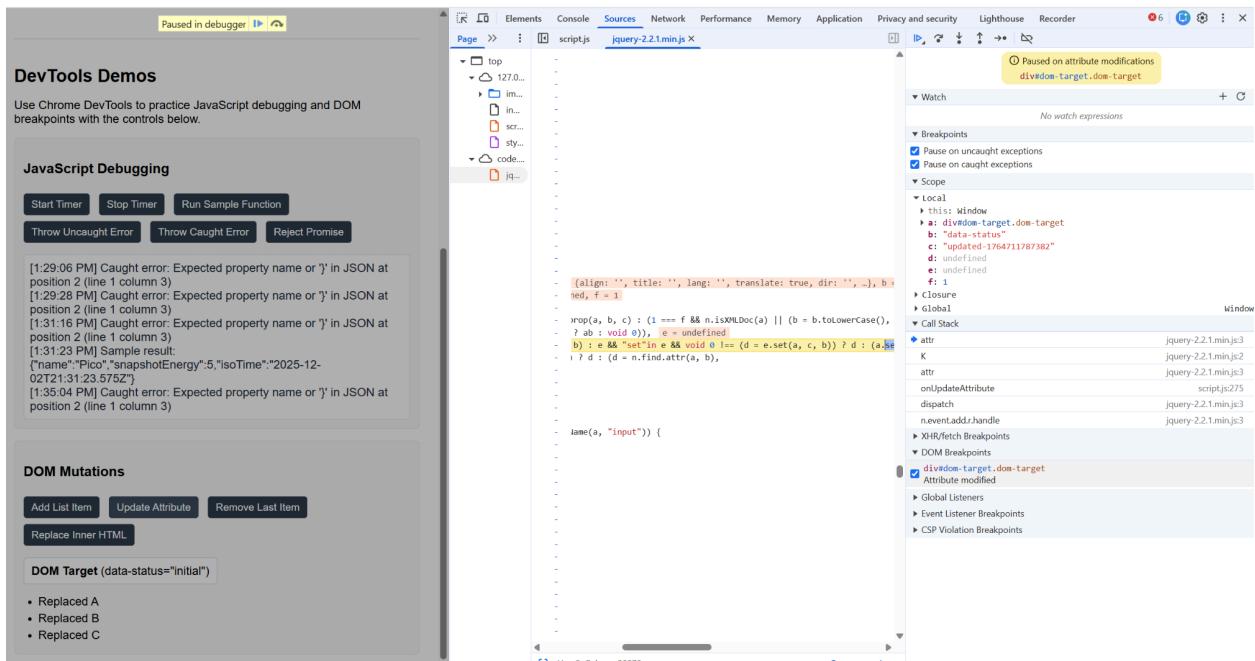


## 6) Attribute Modification

### What to do:

1. In the **Elements** panel, find the element with id `dom-target`.
2. Right-click `#dom-target` and choose:  
**Break on → Attribute modifications.**
3. In the page, click “Update Attribute”:

- This should change the `data-status` attribute (for example, from "idle" to "active").
- DevTools will pause at the line in `script.js` that updates the attribute.
  - Inspect:
    - The **Call Stack** to see how this code was reached.
    - The **Elements** panel to confirm the updated attribute.

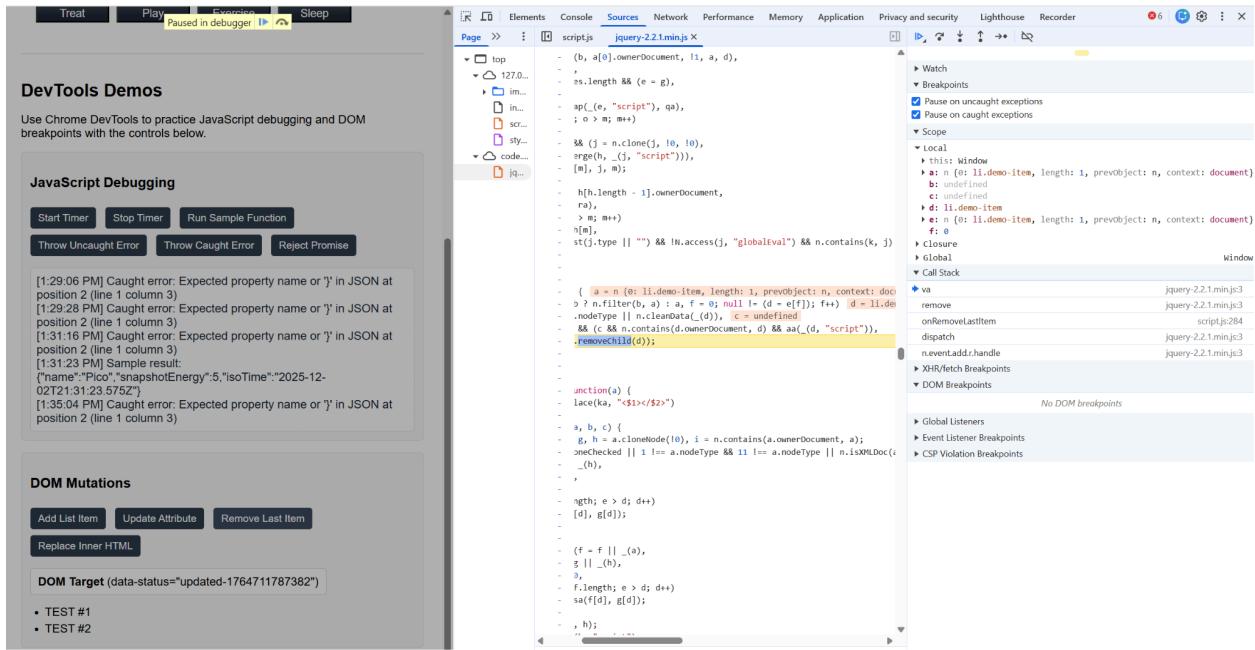


## 7) Node Removal

**What to do:**

- In the **Elements** panel, again select `#demo-list`.
- Right-click and choose:  
**Break on → Node removal.**
- In the page, click “**Remove Last Item**”:
  - The script should remove the last `<li>` from `#demo-list`.

#### 4. DevTools will pause at the line where the node is removed.



## 8) Editing in Elements Panel

### What to do:

1. In the **Elements** panel, locate an element with the class `.demo-item` inside the DevTools demo section.
2. Double-click the text content of a `.demo-item` and edit it (for example, change “Original Item” to “Edited via DevTools”).
3. Press Enter and observe the change reflected immediately on the page.
4. Select `#dom-target` and modify one of its attributes (for example, add `title="Edited in DevTools"`).
5. Confirm that the new attribute value is visible in the page UI (e.g., hover to see the title tooltip).

Screenshot of the Chrome DevTools Elements tab showing the DOM structure of a "DevTools Demos" page. The page contains two main sections: "JavaScript Debugging" and "DOM Mutations".

**JavaScript Debugging:**

- Buttons: Start Timer, Stop Timer, Run Sample Function, Throw Uncought Error, Throw Caught Error, Reject Promise.
- Console output:
 

```
[1:29:06 PM] Caught error: Expected property name or '}' in JSON at position 2 (line 1 column 3)
[1:29:28 PM] Caught error: Expected property name or '}' in JSON at position 2 (line 1 column 3)
[1:31:16 PM] Caught error: Expected property name or '}' in JSON at position 2 (line 1 column 3)
[1:31:23 PM] Sample result:
{"name": "Pico", "snapshotEnergy": 5, "isoTime": "2025-12-02T21:31:23.575Z"}
[1:35:04 PM] Caught error: Expected property name or '}' in JSON at position 2 (line 1 column 3)
```

**DOM Mutations:**

- Buttons: Add List Item, Update Attribute, Remove Last Item, Replace Inner HTML.
- DOM Target (data-status="updated-1764711787382") element:
  - #Text 94.27 × 27
  - TEST #2

The DevTools sidebar shows the following styles for the .dom-target class:

```
.dom-target {
  display: inline-block;
  margin-bottom: 10px;
  padding: 8px 10px;
  border: 1px solid #ccc;
  border-radius: 4px;
  background-color: #fff;
}

* {
  box-sizing: border-box;
}

div {
  user agent stylesheet
  display: block;
  unicode-bidi: isolate;
}

Inherited from body
body {
  font-family: helvetica, arial, sans-serif;
  margin: 25px;
}

margin 0
border 0.667
padding 8
0 0.667 10 382.155×18.667 10 0.667 0
border 0.667
padding 8
0 0.667 10 0
```