

Compatibility Issues and Fixes:

1. Time Variations Across Browsers and Devices

- **Issue:** Significant variations in the time taken for the login process and page loading across different browsers and devices.

Details:

Browser	Device	Time Taken (Minutes)
Chrome	Samsung S20	5:51
Firefox	Samsung S20	5:59
Edge	Samsung S20	5:51
Safari	iPhone 12	3:16
Chrome	Samsung Tab S6	3:30
Firefox	Samsung Tab S6	6:07
Edge	Samsung Tab S6	6:14
Safari	Samsung Tab S6	5:59
Chrome	Windows 10	2:53
Firefox	Windows 10	3:23
Edge	Windows 10	3:04
Safari	Windows 10	3:05
- Recommendation:		
- Analyze the network logs to identify any bottlenecks specific to certain browser-device combinations.		
- Check for compatibility issues or inefficient code execution paths in the application.		
- Use browser profiling tools to improve load times.		

- Implement lazy loading and resource optimization for faster page rendering.		

2. Unwanted White Space Between Product Image and Product Details on Mobile

- **Issue:** A large, unwanted white space appears between the product image and product details on all mobile browsers.
- **Observed Behavior:**
 - On all tested mobile devices, there is excessive white space between the product image and the product details section.
- **Affected Devices/Browsers:**
 - **Devices:** Mobile (Samsung S20, iPhone 12)
 - **Browsers:** Chrome, Firefox, Edge, Safari
- **Recommendation:**
 - Investigate and adjust the CSS rules for margins, padding, and container sizes, particularly for mobile views.
 - Check and modify media queries to ensure proper responsiveness and eliminate unnecessary space between elements.
 - Test the layout on various screen sizes to ensure consistent presentation across all mobile devices.

3. Irrelevant Prefix "Test.allTheThings()" on 6th Product

- **Issue:** The 6th product on the website has an irrelevant prefix "Test.allTheThings()" while all other products have the correct "Sauce Labs" prefix.
- **Observed Behavior:**
 - All products have "Sauce Labs" as the prefix in their name, except for the 6th product, which incorrectly displays "Test.allTheThings()" as a prefix.
- **Affected Devices/Browsers:**
 - **Devices:** Mobile, tablet, and laptop
 - **Browsers:** All browsers (Chrome, Firefox, Edge, Safari)
- **Recommendation:**
 - Investigate the source code to identify where the incorrect prefix is being added to the 6th product.
 - Correct the prefix to match the "Sauce Labs" naming convention.
 - Test the fix across all devices and browsers to ensure consistency.

4. Terms of Service and Privacy Policy Displayed as Plain Text

- **Issue:** The "Terms of Service" and "Privacy Policy" are displayed as plain text instead of functioning as clickable links.
- **Observed Behavior:**

- Both "Terms of Service" and "Privacy Policy" are visible as plain text without any hyperlink functionality, making them non-interactive.
 - **Affected Devices/Browsers:**
 - **All Devices:** Mobile, tablet, and laptop
 - **Browsers:** All browsers (Chrome, Firefox, Edge, Safari)
 - **Recommendation:**
 - Convert the "Terms of Service" and "Privacy Policy" into clickable links by adding the appropriate anchor tags (`<a>`).
 - Ensure the links are correctly styled and functional across all devices and browsers.
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5. Filter Dropdown Not Responding and Mouse Pointer Issue

- **Issue:** The filter dropdown does not respond when clicked, but clicking the filter icon correctly displays the sort options, making the dropdown icon redundant. Additionally, the mouse pointer does not change to the link select pointer when hovered over the filter icon or cart icon. It only changes when hovered over the non-working dropdown, which may confuse users.
 - **Observed Behavior:**
 - The dropdown icon appears clickable but does not trigger any action when clicked.
 - The mouse pointer changes to a link select pointer only when hovered over the non-functional dropdown, but not on the filter icon.
 - The mouse pointer does not change to a link select pointer when hovered over the cart icon either.
 - **Affected Devices/Browsers:**
 - **All Devices:** Laptop
 - **Browsers:** All browsers (Chrome, Firefox, Edge, Safari)
 - **Recommendation:**
 - Remove or disable the non-functional dropdown icon to avoid confusion.
 - Ensure that the filter icon and cart icon both display the correct mouse pointer (link select) when hovered over, to indicate they are clickable.
 - Test to confirm that the dropdown icon is either made functional or removed, and that the mouse pointer behavior is consistent across devices and browsers.
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7. Automatic Logout After Timeout Period and Error Message

- **Issue:** After a timeout period, if the user clicks anywhere on the screen, they are automatically logged out and redirected to the login page. An error message is displayed, indicating that the user can only access the page (e.g., `inventory.html`, `cart.html`, `checkout-step-one.html`, `checkout-step-two.html`, `checkout-complete.html`) when logged in.
- **Observed Behavior:**
 - After the timeout period, clicking anywhere on the screen causes the user to be logged out immediately.
 - The user is redirected to the login page and an error message appears: "You can access [page name].html only when logged in."

- The error message varies based on the page the user was on (e.g., `inventory.html`, `cart.html`, etc.).
 - **Affected Devices/Browsers:**
 - **All Devices:** Mobile, tablet, laptop
 - **Browsers:** All browsers (Chrome, Firefox, Edge, Safari)
 - **Recommendation:**
 - Implement a session management system that keeps the user logged in until they explicitly log out, instead of logging them out automatically after a timeout period.
 - Provide a warning message or a countdown before logging out to inform the user.
 - Consider allowing users to continue their session without being redirected to the login page after the timeout period, or prompt them to confirm if they wish to remain logged in.
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8. Filter Sort Option Resets After Page Refresh or Redirect

- **Issue:** The selected filter sort option (e.g., A to Z, Z to A, Price High to Low, Price Low to High) resets to the default "A to Z" after a page refresh or redirect, even though the user has selected a different option.
 - **Observed Behavior:**
 - The default filter option is "A to Z."
 - When a user selects a different filter option (e.g., Z to A, Price High to Low, or Price Low to High), the page updates accordingly.
 - However, upon refreshing or redirecting the page, the filter option resets back to "A to Z," and the user's selection is lost.
 - **Affected Devices/Browsers:**
 - **All Devices:** Mobile, tablet, laptop
 - **Browsers:** All browsers (Chrome, Firefox, Edge, Safari)
 - **Recommendation:**
 - Implement a method to retain the selected filter sort option across page refreshes or redirects, such as using cookies, local storage, or session storage.
 - Ensure that the selected filter option is preserved for the user's session to enhance the user experience and prevent frustration from having to re-select the filter option.
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9. Reset App State Does Not Fully Reset Cart and Checkout Information

- **Issue:** Clicking the "Reset App State" option in the sidebar resets the cart badge to 0 (making it appear as if no items are added), but the "Remove" button for products remains instead of changing back to "Add to Cart." Additionally, during the checkout process, if "Reset App State" is clicked without refreshing the page, the user can continue to further checkout steps, but the product name is missing, and the price is shown as 0.0.
- **Observed Behavior:**

- Clicking "Reset App State" in the sidebar resets the cart badge to 0, making it seem as though no products are in the cart.
 - However, the product buttons remain as "Remove" instead of reverting to "Add to Cart."
 - During the checkout process, if "Reset App State" is clicked but the page is not refreshed, the user can continue to further checkout steps. However, the product name is not displayed, and the price shows as 0.0.
 - **Affected Devices/Browsers:**
 - **All Devices:** Mobile, tablet, laptop
 - **Browsers:** All browsers (Chrome, Firefox, Edge, Safari)
 - **Recommendation:**
 - Ensure that clicking "Reset App State" also resets the product buttons to "Add to Cart" rather than leaving them as "Remove."
 - Refresh the page or reinitialize the cart and checkout states properly when "Reset App State" is clicked, ensuring that the product name and price are correctly displayed during the checkout process.
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10. Issues when logged in as "problem_user"

- **Issue 1:** When logging in with the username "problem_user," all product images in `inventory.html` are displayed as a dog image. Next to the dog image, a product name is displayed which is incorrect. When clicking on a specific product name, the page redirects, and the product name is updated to the correct one. Along with this change, the corresponding correct product image is displayed.
- **Issue 2:** The filter options are not functioning properly and do not update the displayed products.
- **Issue 3:** In `checkout-step-one.html`, when entering the last name after typing the first name, the first name gets erased, and only the last typed letter of the last name appears in the first name field. This issue prevents the last name from being entered and causes an error when trying to proceed without the last name.
- **Issue 4:** The "About" link in the sidebar of `inventory.html` leads to a 404 "Page Not Found"
- **Issue 5:** Some products, when clicked, show an error message stating "Item Not Found," along with a call dial error and a price displayed as √-1.
- **Observed Behavior:**
 - **Product Images:** All product images appear as a dog image when logged in with the username "problem_user." The product name displayed next to the dog image is incorrect. When clicking on a product name, the page redirects, updating the product name and displaying the correct product image.
 - **Filters:** Filters do not work as expected and fail to update the displayed products.
 - **Checkout Step:** When entering the last name in `checkout-step-one.html`, the first name gets erased, and only the last typed letter of the last name appears in the first name field. This issue prevents proceeding with the checkout process.
 - **Sidebar Link:** The "About" link in the sidebar leads to a 404 error page.
 - **Product Details:** Some products say "Item not found" with call dial error message and price √-1.

- **Affected Devices/Browsers:**
 - **All Devices:** Mobile, tablet, laptop
 - **Browsers:** All browsers (Chrome, Firefox, Edge, Safari)
 - **Recommendation:**
 - **For Product Images:** Investigate the image source handling for the "problem_user" login and ensure that the correct product images are loaded for this user.
 - **For Filters:** Review the filter functionality to ensure that they are properly linked to the product display and refresh accordingly when a filter is selected.
 - **For Checkout Step:** Fix the issue where entering the last name causes the first name to be erased. Ensure that the input fields for first and last names are independent and retain their values.
 - **For Sidebar Link:** Correct the "About" link in the sidebar to point to a valid page instead of causing a 404 error.
 - **Item Not Found:-** Investigate the product database to identify why certain products are not found and ensure all product details are correctly stored and accessible.
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11. Performance issues when logged in as "performance_glitch_user"

- **Issue:** When logging in with the username "performance_glitch_user," both the login and post-login pages exhibit significant performance issues. The pages are very slow to load, respond, refresh, and redirect.
 - **Observed Behavior:**
 - **Login Page:** The login page takes a long time to load, and after submitting the credentials, the login response is delayed.
 - **Post-Login Pages:** Once logged in, the page load times for post-login pages are unusually slow, causing delays in page transitions and interactions. This includes both the page refresh and redirection processes.
 - **Affected Devices/Browsers:**
 - **All Devices:** Mobile, tablet, laptop
 - **Browsers:** All browsers (Chrome, Firefox, Edge, Safari)
 - **Recommendation:**
 - Analyze the server-side processes and network traffic for the "performance_glitch_user" login. Check if there are any inefficient database queries, resource-heavy scripts, or other performance bottlenecks.
 - Profile the web pages using browser developer tools to identify any rendering issues or long-running processes that could be causing the delay.
 - Optimize assets like images, CSS, and JavaScript to reduce load times.
 - Investigate the possibility of caching mechanisms to improve response times for frequently visited pages.
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11. Issues when logged in as "error_user"

- **Issue 1:** In `inventory.html`, clicking the filter option displays an error message: "Sorting is broken. This error has been reported to backtrace."
 - **Issue 2:** In `checkout-step-one.html`, the last name field is unresponsive, and no text can be entered. However, the page proceeds to `checkout-step-two.html` without any errors, even with the last name field left empty.
 - **Issue 3:** In `checkout-step-two.html`, the "Finish" button is non-functional, preventing the checkout process from completing.
 - **Observed Behavior:**
 - **Filter Option:** Clicking the filter dropdown triggers an error message, making sorting unavailable.
 - **Checkout Step One:** The last name field does not accept any input but allows navigation to the next step without validation errors.
 - **Checkout Step Two:** The "Finish" button does not respond to clicks, leaving the user unable to complete the checkout process.
 - **Affected Devices/Browsers:**
 - **All Devices:** Mobile, tablet, laptop
 - **Browsers:** All browsers (Chrome, Firefox, Edge, Safari)
 - **Recommendation:**
 - **For Sorting Issue:**
 - Investigate the sorting logic and error reporting mechanism to identify the root cause of the "Sorting is broken" error.
 - Fix the reported issues in the backtrace system and validate the sorting functionality thoroughly.
 - **For Checkout Step One:**
 - Debug the input field functionality in `checkout-step-one.html` to allow proper entry in the last name field.
 - Add validation checks to prevent proceeding to the next step if required fields are left empty.
 - **For Checkout Step Two:**
 - Inspect the event handling logic for the "Finish" button and resolve any issues preventing its functionality.
 - Ensure proper validation and redirection are implemented for completing the checkout process.
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12. Issues when logged in as "visual_user"

- **Issue 1:** In `inventory.html`, only the first product image is replaced with a dog image. Clicking on the first product reveals the new image corresponding to the product name. Other products do not have this issue.
- **Issue 2:** The cart icon is misplaced, and the hamburger icon appears crooked.
- **Issue 3:** Product prices change dynamically on refresh, redirects, and when filters are applied. Sorting options have no effect, and the first image remains a dog image regardless of applied filters.
- **Issue 4:** The "Add to Cart" button for the last product exceeds the boundary of its outer box.
- **Issue 5:** In `checkout-step-two.html`, the "Checkout" button is misplaced at the top of the screen. Additionally, a product's price changes through each step of the checkout process.
- **Observed Behavior:**

- **First Product Image:** Replaced with a dog image; clicking the product shows the new image.
 - **Cart and Hamburger Icons:** Misaligned, causing a visually disturbing experience.
 - **Dynamic Pricing:** Product prices fluctuate unexpectedly during refresh, redirects, filtering, and checkout steps.
 - **Add to Cart Button:** For the last product, it exceeds its designated area.
 - **Checkout Button:** Misplaced at the top, with price inconsistencies observed through the checkout steps.
 - **Affected Devices/Browsers:**
 - **All Devices:** Mobile, tablet, laptop
 - **Browsers:** All browsers (Chrome, Firefox, Edge, Safari)
 - **Recommendation:**
 - **Resolve First Product Image Issue:**
 - Investigate the image replacement logic for the first product and ensure consistency across filters and clicks.
 - Validate the image loading mechanism to prevent incorrect placeholders like the dog image.
 - **Align Cart and Hamburger Icons:**
 - Adjust the alignment and positioning of the cart and hamburger icons to improve the user interface.
 - Test the layout across devices and browsers to ensure uniformity.
 - **Fix Dynamic Pricing and Sorting:**
 - Correct the pricing logic to prevent changes during refresh, redirects, and filtering.
 - Ensure sorting functionality works as intended and resolves the image issue for the first product.
 - **Resize Last Product's Add to Cart Button:**
 - Resize the "Add to Cart" button for the last product to fit within its outer box.
 - Check for responsive design issues causing the misalignment.
 - **Reposition Checkout Button and Stabilize Prices:**
 - Reposition the "Checkout" button to its correct location in `checkout-step-two.html`.
 - Stabilize product prices across all checkout steps to avoid confusion for users.
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13. Password Masking and Reveal Issues

- **Issue:** In the login page, the password masking behavior is inconsistent across browsers and devices:
 - **Chrome and Safari:** Password is masked correctly without any issues.
 - **Edge:** Includes an eye icon that reveals the password when pressed.
 - **Firefox:**
 - **Laptop:** Password is masked correctly.
 - **Tablet and Phone:** While typing, the password is masked correctly. However, after typing the password fully, it is revealed briefly for a second before being masked again.

- **Observed Behavior:**
 - **Chrome and Safari:** Consistent and correct masking behavior.
 - **Edge:** Eye icon functionality is present, allowing users to toggle password visibility.
 - **Firefox (Tablet and Phone):** Password is revealed briefly after typing is complete, potentially due to a webkit security property in the code.
 - **Affected Devices/Browsers:**
 - **All Devices:** Tablet, phone, laptop (behavior varies).
 - **Browsers:** Chrome, Safari, Edge, and Firefox.
 - **Recommendation:**
 - **Ensure Consistent Password Masking:**
 - Investigate the webkit security property in the code and ensure consistent password masking across all browsers and devices.
 - **Remove Brief Reveal in Firefox:**
 - Debug the password input field behavior in Firefox on tablets and phones. Prevent the password from being revealed briefly after typing.
 - **Evaluate Eye Icon Functionality:**
 - Standardize the use of the eye icon for password visibility across all browsers if required, or ensure uniform behavior in Edge.
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15. Password Management Pop-ups Post Login

- **Issue:** After logging in to `inventory.html`, the behavior of password management pop-ups varies across browsers:
 - **Google Chrome:** Displays a "Password Data Breach" pop-up. The website screen is accessible only after clicking "OK" on the pop-up.
 - **Firefox Mobile and Tablet:** Displays a pop-up asking to save or not save the password. The website screen is accessible only after responding to the pop-up.
 - **Firefox Laptop:** Displays the same pop-up, but the website screen is accessible even without responding to it.
 - **Edge:** Displays a pop-up asking to save or not save the password, but the website screen is accessible even without responding.
 - **Safari:** No pop-up appears.
- **Observed Behavior:**
 - Pop-ups disrupt the user flow differently across browsers, potentially impacting usability and user perception of security.
- **Affected Devices/Browsers:**
 - **Devices:** Mobile, tablet, and laptop.
 - **Browsers:** Google Chrome, Firefox (all devices), Edge, Safari.
- **Recommendation:**
 - **Standardize Pop-up Behavior:**
 - Ensure consistent handling of password management pop-ups across all browsers by reviewing and standardizing the website's password-related security policies and headers.
 - **Improve User Flow:**
 - Minimize disruption by providing in-app messages or notifications instead of browser-dependent pop-ups for critical security alerts.

- **Update Security Practices:**
 - Address any potential password security concerns highlighted in the Chrome "Password Data Breach" pop-up to reassure users of their data safety.
 - **Test Across Browsers:**
 - Validate changes to confirm the desired behavior is consistent across all supported browsers and devices.
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14. Autofill Suggestions in Checkout Step One

- **Issue:** In `checkout-step-one.html`, the autofill behavior for previously used first name, last name, and pin fields is inconsistent:
 - **Firefox Mobile:** Does not suggest previously used first name, last name, and pin.
 - **All Other Browsers and Devices:** Autofill suggestions for these fields are displayed as expected.
 - **Observed Behavior:**
 - **Firefox Mobile:** No autofill suggestions are provided, potentially affecting user convenience.
 - **Other Browsers:** Autofill suggestions work correctly, providing a seamless experience.
 - **Affected Devices/Browsers:**
 - **Devices:** Mobile (specific to Firefox Mobile).
 - **Browsers:** Firefox Mobile compared to Chrome, Safari, Edge, and Firefox on other devices.
 - **Recommendation:**
 - **Ensure Consistent Autofill Support:**
 - Investigate the form field attributes and browser-specific autofill handling in Firefox Mobile to ensure suggestions for previously used inputs are provided.
 - **Test Across Browsers:**
 - Verify the autofill functionality on all devices and browsers after resolving the issue to maintain a consistent user experience.
 - **Update User Guidance:**
 - Provide a note or placeholder text in the form fields to assist users if autofill suggestions are not supported.
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Code-Specific Issues

1. Viewport Configuration

- **Code:**

```
<meta name="viewport" content="width=device-width,initial-scale=1"/>
```

- **Observation:**
 - The viewport meta tag is standard for responsive design. However, if your app is intended for a wider range of devices, consider adding

`maximum-scale=1` and `user-scalable=no` to prevent users from zooming in.

- **Recommendation:** Review if zooming should be disabled, as this could impact accessibility.

2. JavaScript Redirection Logic

- **Code:**

```
!function(n) {
  if ("/" === n.search[1]) {
    var a = n.search.slice(1).split("&").map(function(n) {
      return n.replace(/~and~/g, "&")
    }).join("?");
    window.history.replaceState(null, null, n.pathname.slice(0, -1) + a +
n.hash)
  }
}(window.location)
```

- **Observation:**
 - This code replaces the URL in the browser's address bar by removing the trailing slash and fixing query parameters.
 - Potential issue: This could cause problems if the app relies on URLs with specific query strings for navigation or state management.
 - **Recommendation:** Test whether query parameters and hashes are preserved correctly after this operation.
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