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Purpose: - Assignment (part of second round interview)

Submitted to: EGDK Private LTD Mangalore

1.Familiarize yourself with the SauceDemo e-commerce website.?

A: Website Overview

URL: <https://www.saucedemo.com/>

Purpose: SauceDemo is a demo website created by Sauce Labs for testing and demonstration purposes. It simulates an e-commerce platform with basic functionalities such as user login, product browsing, cart management, and checkout.

Key Sections and Features

1. Login Page

- **Components:**
 - **Username Field:** Input field for entering the username.
 - **Password Field:** Input field for entering the password.
 - **Login Button:** Button to submit login credentials.
 - **Error Message Area:** Displays error messages if login credentials are incorrect or if the user is locked out.
- **Credentials:**
 - **Standard User:** standard_user / secret_sauce
 - **Locked Out User:** locked_out_user / secret_sauce (access denied)
 - **Problem User:** problem_user / secret_sauce (might encounter issues)
 - **Performance Glitch User:** performance_glitch_user / secret_sauce (may experience glitches)

2. After login the Pages are

- **Components:**
 - **Product List:** Displays a list of products with images, names, and prices.
 - **Add to Cart Buttons:** Each product has an “Add to Cart” button to add the item to the shopping cart.
 - **Product Sorting:** Dropdown menu to sort products by name or price.
- **Features:**
 - **Product Images:** Visual representation of each product.
 - **Product Details:** Basic details including the name and price.
 - **Sorting Options:** Allows users to sort products in ascending or descending order.

3. Shopping Cart

- **Components:**
 - **Cart Icon:** Located at the top-right corner, indicating the number of items in the cart.
 - **Cart Summary:** List of products added to the cart with quantities and prices.
 - **Remove Button:** Option to remove items from the cart.
 - **Checkout Button:** Button to proceed to the checkout page.
- **Features:**
 - **Item Management:** Users can view and manage items in their cart.
 - **Cart Overview:** Displays the total cost and items.

4. Checkout Process

- **Components:**
 - **Checkout Information:** Users enter shipping and payment details.
 - **Order Summary:** Displays the final order summary including items, shipping address, and payment method.
 - **Complete Purchase Button:** Final button to complete the purchase process.
- **Features:**
 - **Order Confirmation:** Confirmation of the purchase and details.

Responsive

- **Desktop View:** Displays the site with a full-width layout suitable for larger screens.
- **Tablet View:** Adjusts layout for a smaller screen,
- **Mobile View:** Optimizes the layout for touch interactions and smaller screens, with larger buttons and simplified navigation.

Conclusion

SauceDemo provides a functional and controlled environment to test and demonstrate various e-commerce features. By exploring its login process, product interactions, cart management, and checkout flow, you can gain a clear understanding of its functionalities and usability. This familiarity is essential for effective testing and demonstrating the capabilities of web applications.

2. Write a test strategy for which areas you intend to test and why?

Test Strategy for SauceDemo E-Commerce Website

1. Introduction

Purpose: To outline the approach for testing the SauceDemo e-commerce website to ensure it functions as expected across various scenarios and environments. The strategy focuses on core functionalities, usability, responsiveness, performance, and security to deliver a reliable and user-friendly product.

1. Functional Testing

Objective: Verify that the core functionalities of the website operate as intended.

- **Login and Authentication:**
 - **Scope:** Validate user login with different credentials, including valid and invalid usernames and passwords.
 - **Reason:** Login is essential for accessing other features on the site. Ensuring correct authentication mechanisms are in place is critical for user access and security.
 - **Product Listing and Navigation:**
 - **Scope:** Check that products are listed correctly, including product names, images, and prices. Test sorting and filtering options.
 - **Reason:** Accurate product information and sorting capabilities are crucial for a smooth shopping experience.
 - **Add to Cart and Cart Management:**
 - **Scope:** Test adding items to the cart, updating quantities, and removing items. Verify that the cart displays the correct total price and item count.
 - **Reason:** The shopping cart is central to the purchase process. Proper functionality here is essential for completing transactions.
 - **Checkout Process:**
 - **Scope:** Ensure users can proceed through the checkout process, including entering shipping information, selecting payment methods, and completing the order.
 - **Reason:** The checkout process is the final step in purchasing and must be accurate to ensure successful transactions.
 - **Error Handling and Validation:**
 - **Scope:** Verify that appropriate error messages are displayed for invalid inputs and that form validation is working correctly.
 - **Reason:** Proper error handling and validation are essential for a good user experience and to guide users in correcting issues.
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2. Usability Testing

Objective: Assess the ease of use and overall user experience of the website.

- **User Interface (UI) Design:**
 - **Scope:** Check for consistency in UI elements, such as buttons, fonts, and colors. Ensure that UI elements are aligned and visually appealing.
 - **Reason:** A consistent and attractive UI contributes to a positive user experience and helps with site navigation.
- **User Experience (UX):**
 - **Scope:** Evaluate the ease of navigation, clarity of information, and overall user satisfaction. Test different user journeys, such as searching for products and completing a purchase.

- **Reason:** A smooth and intuitive user experience is vital for user retention and satisfaction.
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3. Responsive Design Testing

Objective: Ensure the website functions correctly across different devices and screen sizes.

- **Desktop, Tablet, and Mobile Views:**
 - **Scope:** Test the website on various devices (desktops, tablets, mobile phones) and screen orientations (portrait and landscape). Check for layout adjustments and usability.
 - **Reason:** With diverse device usage, the website must be responsive and provide a consistent experience across all platforms.
 - **Viewport Resizing:**
 - **Scope:** Use browser tools to simulate different screen sizes and viewports. Check for proper scaling and layout adjustments.
 - **Reason:** Ensures the site adapts well to various screen sizes and resolutions.
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4. Performance Testing

Objective: Assess the website's speed and ability to handle traffic.

- **Load Testing:**
 - **Scope:** Simulate multiple concurrent users to test how the website performs under high traffic conditions.
 - **Reason:** Ensures the website can handle expected and peak loads without performance degradation.
 - **Speed Testing:**
 - **Scope:** Measure page load times and responsiveness. Test different aspects, such as image loading, script execution, and overall page speed.
 - **Reason:** Fast load times are crucial for user satisfaction and SEO.
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5. Security Testing

Objective: Verify that the website is secure and user data is protected.

- **Authentication Security:**
 - **Scope:** Test for vulnerabilities such as SQL injection, cross-site scripting (XSS), and session hijacking. Ensure that the login process is secure.
 - **Reason:** Protecting user credentials and preventing unauthorized access is critical for maintaining trust and security.
- **Data Protection:**
 - **Scope:** Verify that sensitive information, such as payment details and personal data, is transmitted and stored securely.

- **Reason:** Ensuring data protection is essential for user privacy and regulatory compliance
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6. Compatibility Testing

Objective: Ensure the website works correctly across different browsers and devices.

- **Browser Compatibility:**
 - **Scope:** Test the website on various browsers (Chrome, Firefox, Safari, Edge) to ensure consistent functionality and appearance.
 - **Reason:** Users may access the website from different browsers, so compatibility is important for a consistent experience.
 - **Device Compatibility:**
 - **Scope:** Check the website on different devices, including desktops, tablets, and smartphones, to ensure proper functionality and layout.
 - **Reason:** Different devices may have varying screen sizes and capabilities, so the site must adapt accordingly.
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7. Edge Case Testing

Objective: Identify potential issues under unusual or extreme conditions.

- **Large Number of Products:**
 - **Scope:** Test how the website handles displaying and interacting with a large number of products.
 - **Reason:** Ensures the site can manage extensive product data without performance issues.
 - **No Products Available:**
 - **Scope:** Verify the website's behavior and user messaging when no products are available.
 - **Reason:** Ensures graceful handling of empty states and provides a good user experience even when no products are listed.
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Test Execution and Reporting

- **Test Environment:** Use a staging environment that mirrors the production environment to ensure accurate testing results.
- **Testing Tools:** Employ tools for automated testing (e.g., Selenium), performance testing (e.g., JMeter), and responsive design testing (e.g., BrowserStack).
- **Documentation:** Record test cases, execution results, and issues. Maintain detailed logs for traceability.
- **Issue Tracking:** Use an issue tracking system (e.g., JIRA) to manage and resolve defects.

- **Status Reports:** Provide regular updates to stakeholders, including test coverage, defect status, and overall quality.
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3. Identify and list test cases that cover the functionalities of the website?

All Relevant Test case added in Test case suite, but here I would like to showcase those features in pointwise

- 1.Login and Authentication
 - 1.Login with Valid credentials
 2. Login with invalid credentials
 - 3.Login with locked out credentials
 4. Password Field Masking
 - 2.Product Listing and Navigation
 1. Product Display
 2. Product Sorting
 3. Product Filtering
 3. Add to Cart and Cart Management
 1. Add Product to Cart
 2. Remove Product from Cart
 3. Update Product Quantity
 4. Checkout Process
 1. Proceed to Checkout
 2. Complete Purchase
 3. Invalid Checkout Information
 5. Data Encryption
 6. Performance Testing
 - 7.Responsive Mode Test case (UI and UX check)
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4. Choose which test-cases you would evaluate as critical and execute given that you do not have unlimited time and provide a brief explanation of why and rank them according to priority?

Critical Test Cases and Prioritization

Priority 1: High

1. **Login and Authentication**

- **Test Case : Valid Login**
 - **Explanation:** Logging in is the gateway to all other functionalities. Without successful login, users cannot access the inventory, cart, or checkout processes. Ensuring that valid credentials allow access is fundamental.
 - **Priority:** High
- **Test Case : Invalid Login**
 - **Explanation:** It's essential to ensure that the system properly handles invalid login attempts to prevent unauthorized access and provide users with correct feedback.
 - **Priority:** High
- **Test Case : Locked Out User**
 - **Explanation:** Verifying that locked-out users are restricted from accessing the site ensures that user account security policies are enforced correctly.
 - **Priority:** High
- 2. **Add to Cart and Cart Management**
 - **Test Case : Add Product to Cart**
 - **Explanation:** Adding products to the cart is a fundamental e-commerce feature. If this doesn't work, users cannot proceed with purchasing items.
 - **Priority:** High
 - **Test Case : Remove Product from Cart**
 - **Explanation:** Users need the ability to manage their cart by removing products. This functionality directly affects the shopping experience and accuracy of the final order.
 - **Priority:** High
 - **Test Case : Update Product Quantity**
 - **Explanation:** Updating product quantities in the cart is crucial for accurate order processing. Users must be able to adjust quantities before checkout.
 - **Priority:** High
- 3. **Checkout Process**
 - **Test Case : Proceed to Checkout**
 - **Explanation:** Users must be able to move from their cart to the checkout page to complete their purchase. This is a critical step in the transaction process.
 - **Priority:** High
 - **Test Case : Complete Purchase**
 - **Explanation:** Completing a purchase is the ultimate goal of an e-commerce site. If users cannot finalize transactions, the site fails in its primary function.
 - **Priority:** High
- 4. **Responsive Design Testing**
 - **Test Case : Mobile View**
 - **Explanation:** With increasing mobile traffic, ensuring the site is fully functional and usable on mobile devices is critical for accessibility and user experience.
 - **Priority:** High

Priority 2: Medium

5. Product Listing and Navigation

- **Test Case : Product Display**

- **Explanation:** Accurate display of products, including images and prices, is essential for users to make informed purchasing decisions. However, it can be tested once the critical functions like login and checkout are confirmed.
- **Priority:** Medium

- **Test Case : Product Sorting**

- **Explanation:** Sorting functionality enhances user experience but is secondary to the core functionalities of login, cart management, and checkout.
- **Priority:** Medium

6. Performance Testing

- **Test Case : Page Load Time**

- **Explanation:** Ensuring pages load quickly affects user satisfaction and retention. However, this can be deprioritized if critical functionalities are not yet stable.
- **Priority:** Medium

- **Test Case : Load Handling**

- **Explanation:** Performance under high traffic is important but can be assessed after confirming that core functionalities are working correctly.
- **Priority:** Medium

- **Test Case : Data Encryption**

- **Explanation:** Ensuring sensitive data is encrypted is important for user trust and compliance, but it follows the confirmation of basic functionalities.
- **Priority:** Low

8. Edge Case Testing

- **Test Case : No Products Available**

- **Explanation:** Handling scenarios with no products is useful for robustness but can be tested once primary functionalities are stable.
- **Priority:** Low

Summary

- **High Priority:** Focus on core functionalities that directly impact user access, shopping experience, and transaction completion.
- **Medium Priority:** Address functionalities and performance aspects that enhance user experience but are secondary to basic operations.
- **Low Priority:** Reserve for security, edge cases, and additional performance considerations after ensuring core functionalities are reliable.

5.If we had testcases to run nightly as an automated smoke test suite for sauce demo, which of the testcases would you add to this and why?

Nightly Automated Smoke Test Suite for SauceDemo

1. Login and Authentication

1. Test Case : Valid Login

- **Description:** Verify that a user can successfully log in with valid credentials.
- **Reason:** Logging in is fundamental to accessing the site's features. Ensuring that valid credentials work confirms that users can access the application.

2. Test Case : Invalid Login

- **Description:** Verify that the system displays an error message when invalid credentials are entered.
- **Reason:** This test ensures that the system handles incorrect credentials properly and provides feedback to users, maintaining security and usability.

3. Test Case : Locked Out User

- **Description:** Verify that a locked-out user cannot log in.
- **Reason:** Ensuring that locked-out users are correctly restricted helps maintain application security and integrity.

2. Product Listing and Navigation

4. Test Case : Product Display

- **Description:** Verify that products are displayed correctly with accurate images, names, and prices.
- **Reason:** This test ensures that the core functionality of displaying products is working, which is crucial for the user's shopping experience.

3. Add to Cart and Cart Management

5. Test Case : Add Product to Cart

- **Description:** Verify that users can add products to the shopping cart.
- **Reason:** Adding products to the cart is a core functionality of the e-commerce site. This test confirms that users can begin the purchasing process.

6. Test Case : Remove Product from Cart

- **Description:** Verify that users can remove products from the cart.
- **Reason:** Users need to manage their cart, so this functionality must be verified to ensure it is operational.

7. Test Case: Update Product Quantity

- **Description:** Verify that users can update the quantity of products in the cart.
- **Reason:** Correctly handling product quantities is essential for accurate order processing and user experience.

4. Checkout Process

8. Test Case: Proceed to Checkout

- **Description:** Verify that users can navigate to the checkout page from the cart.
 - **Reason:** This confirms that the transition from cart to checkout is functional, which is necessary for completing purchases.
9. **Test Case: Complete Purchase**
- **Description:** Verify that users can complete a purchase with valid checkout information.
 - **Reason:** Completing a purchase is the primary function of the e-commerce site. This test is critical to ensure that transactions can be successfully processed.

5. Responsive Design Testing

10. Test Case : Mobile View

- **Description:** Verify that the website is functional and displays correctly on mobile devices.
- **Reason:** With a significant amount of traffic coming from mobile devices, ensuring responsiveness on mobile is crucial for user accessibility.

Summary of Test Cases for Nightly Smoke Suite

1. **Valid Login**
2. **Invalid Login**
3. **Locked Out User**
4. **Product Display**
5. **Add Product to Cart**
6. **Remove Product from Cart**
7. **Update Product Quantity**
8. **Proceed to Checkout**
9. **Complete Purchase**
10. **Mobile View**

Reasons for Inclusion

- **Core Functionality Coverage:** The selected test cases cover essential functionalities like user authentication, product management, and transaction processing.
- **User Experience Validation:** Tests ensure that users can interact with the site as expected, including navigating, adding items, and completing purchases.
- **Cross-Platform Check:** Including mobile view checks ensures the site remains functional and user-friendly across devices.
- **Quick Feedback:** These tests are designed to run quickly and provide immediate feedback on the health of the application after each build.

By focusing on these critical areas, the nightly smoke test suite will help quickly identify major issues, ensuring that the fundamental aspects of the SauceDemo site are operational and ready for further detailed testing or release.

