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Experiment 1

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Subject Name: Software Testing Subject Code: 24CAH-654

1. Aim/Overview:

   Design at least ten test cases to test the user interface of any website.

2. Task to be done:

   The primary aim of this test case is to ensure that the visual presentation of the website remains consistent and professional across various screen resolutions and devices. Misalignment of UI elements such as buttons, text fields, and labels can result in a poor user experience, reduced readability, and confusion.

3. Steps/Commands for experiment/practical:

   - I've performed all these test cases on nodejs_web_app(https://www.nodejs.com)

   - **Test case 1: Verify the alignment of UI elements:**

Test Case ID	Test Steps	Input Data	Expected Results	Actual Results	Test Environment	Execution Status	Bug Severity	Bug Priority	Notes
1.1	Open the Website on Different Devices: Access the website on multiple devices, such as smartphones, tablets, laptops, and desktops, to check the alignment consistency across platforms.	Smartphone, tablet, laptop, desktop Browsers: Chrome, Firefox, Safari, Edge.	UI elements should remain aligned across all screen sizes, with no overlaps or truncation.	Pass	Samsung galaxy A51, iPhone 16 pro, Vivobook 14, surface nest duo	Pass/Fail	High	High	Alignment of UI elements are responsive.
1.2	Test with Different Screen Resolutions: Use tools or browser developer modes to simulate different resolutions (e.g., 1024x768, 1920x1080, and 375x667).	Screen resolutions: 1024x768, 1920x1080, 375x667	There should be no visual overlap or truncation of elements.	Fail	Microsoft edge, chrome, Mozilla Firefox	Pass/Fail	High	High	Elements are overlap within low resolution.
1.3	Observe UI Elements: Pay close attention to whether buttons, text fields, labels, and other UI components are properly aligned in their respective sections, both horizontally and vertically.	List of UI elements: Buttons, text fields, labels, dropdowns, checkboxes, etc.	Focus on the alignment of elements both horizontally and vertically.	Pass	Browsers: Chrome, Firefox, Safari, Edge.	Pass/Fail	Medium	High	Test on both portrait and landscape orientations for mobile and tablet devices.
1.4	Inspect for Overlapping: Check if elements are overlapping, cutting off, or leaving excessive blank spaces that deviate from the intended design.	Screen resolutions: 375x667, 768x1024, 1366x768, 1920x1080.	Elements should be visually distinct, well-spaced, and aligned as intended across all devices, resolutions, and orientations.	Pass	Samsung galaxy A51, iPhone 16 pro, Vivobook 14, surface nest duo, iPhone 16 pro	Pass/Fail	Medium	High	Overlaps may be caused by inconsistent padding, margin, or CSS media query settings.

Test case 2: Validate Bu on Func onality:

Test Case ID	Test Steps	Input Data	Expected Results	Actual Results	Test Environment	Execution Status	Bug Severity	Bug Priority	Notes
3.1	Click every button on the website.	List of all clickable buttons on the website (e.g., Submit, Cancel, Login, Sign Up, etc.).	Buttons should respond to clicks, triggering the correct actions without delay or errors.	Pass	Browsers: Chrome, Firefox, Safari, Edge	Pass/Fail	High	High	Manual testing and automation tools to track triggered actions and responses.
3.2	Observe the actions triggered (navigation, form submission, etc.).	Test with various screen resolutions, such as 1920x1080, 1366x768, 375x667, etc.	Fonts, colors, and layouts should remain consistent regardless of the browser or device.	Pass	Microsoft edge, chrome, Mozilla Firefox	Pass/Fail	High	High	The UI elements' colours should precisely match the specified theme across all states (e.g., normal, hover, active).

Test case 3: Check colour consistency of elements:

Test Case ID	Test Steps	Input Data	Expected Results	Actual Results	Test Environment	Execution Status	Bug Severity	Bug Priority	Notes
2.1	Compare the colours of buttons, text, backgrounds, etc., using design specs or mock-ups.	Test on multiple devices (e.g., desktop, mobile, tablet) and browsers (Chrome, Firefox, Safari, Edge).	Consistency in colors should be maintained across all states (e.g., normal, hover, active).	Pass	Browsers: Chrome, Firefox, Safari, Edge	Pass/Fail	High	High	Pay special attention to hover and active states of buttons and links, as they may differ slightly in color.
1.2	Test on various devices and browsers to ensure consistency.	Test with various screen resolutions, such as 1920x1080, 1366x768, 375x667, etc.	Fonts, colors, and layouts should remain consistent regardless of the browser or device.	Pass	Microsoft edge, chrome, Mozilla Firefox	Pass/Fail	High	High	The UI elements' colours should precisely match the specified theme across all states (e.g., normal, hover, active).

Test case 4: Test Image Loading and Visibility:

Test Case ID	Test Steps	Input Data	Expected Results	Actual Results	Test Environment	Execution Status	Bug Severity	Bug Priority	Notes
6.1	Test Image Loading and Visibility	Simulate, slow, fast, and offline mode (to observe fallback behaviour) for all devices.	confirm that all images on the website load correctly and display as intended.	Pass	Mobile phones, Tablets, Laptops, Desktops.	Pass/Fail	Medium	Medium	Images loading is constant in all modes.
6.2	Check image quality and absence of placeholder or broken images.	Mobile phones, Firefox, Mobile: 360x640, 375x812, Simulate offline mode, Inline images	Images should load promptly, maintain quality, and display in the correct aspect ratio.	Fail	Mobile phones, Tablets, Laptops, Desktops, Web-browsers.	Pass/Fail	High	High	Some broken images are shown.

Test case 5: Test the Responsiveness of the Website:

Test Case ID	Test Steps	Input Data	Expected Results	Actual Results	Test Environment	Execution Status	Bug Severity	Bug Priority	Notes
4.1	Open the website on mobile phones, tablets, laptops, and desktops.	360x640, 375x812 (or popular dimensions for Android and iPhones).	website layout adapts seamlessly across various screen sizes and resolutions.	Fail	Browsers: Chrome, Firefox, Safari, Edge (latest stable versions).	Pass/Fail	High	High	touch gestures are tested on touch-enabled devices (e.g., swipe, pinch zoom) not working in smaller resolution devices.
4.2	Observe the layout for distortions, overlaps, or improper scaling.	360x640, 375x812 (or popular dimensions for Android and iPhones).	website should adjust smoothly to different screen sizes, maintaining usability and aesthetics.	Fail	Browsers: Chrome, Firefox, Safari, Edge (latest stable versions).	Pass/Fail	High	High	The UI elements didn't follow improper scaling.

Test case 6: Verify Text Readability:

Test Case ID	Test Steps	Input Data	Expected Results	Actual Results	Test Environment	Execution Status	Bug Severity	Bug Priority	Notes
5.1	Inspect font sizes, styles, and line spacing on various devices.	Mobile, phones, Tablets, Laptops, Desktops.	all text content on the website is legible and appropriately styled across devices.	Fail	Tablet resolution: 768x1024, 834x1112, Desktop resolution: 1920x1080, 2560x1440,	Pass/Fail	High	High	Readability of fonts is not same for all resolution.
5.2	Ensure no text is truncated or overlaps with other elements.	360x640, 375x812 (or popular dimensions for Android and iPhones).	Text should be clear, easily readable, and visually consistent across all screen sizes.	Fail	Tablet resolution: 768x1024, 834x1112, Desktop resolution: 1920x1080, 2560x1440,	Pass/Fail	High	High	Text are overlaps with other elements.

Test case 7: Validate Hyperlink Func onality:

Test Case ID	Test Steps	Input Data	Expected Results	Actual Results	Test Environment	Execution Status	Bug Severity	Bug Priority	Notes
7.1	Validate Hyperlink Functionality.	Internal links, External links, Anchor links, File download links.	all hyperlinks should direct users to the correct pages or sections without errors. Steps.	Fail	Use chormeDev tools for all devices.	Pass/Fail	Medium	Medium	Some navigation responded with delays and errors.
7.2	Verify that the links navigate to the expected destinations.	Internal links, External links, Anchor links, File download links.	All hyperlinks should be functional and error-free.	Fail	Mobile phones, Tablets, Laptops, Desktops, Web-browsers.	Pass/Fail	High	High	Some broken links and navigation is found.

Test case 8: Test Input Field Valida ons:

Test Case ID	Test Steps	Input Data	Expected Results	Actual Results	Test Environment	Execution Status	Bug Severity	Bug Priority	Notes
8.1	confirm the proper functioning of input fields, including placeholder text and error handling.	Tablets, Mobile phones, Edge, Text input, Email input, Password input.	Enter invalid data in input fields and observe error messages.	Pass	Use chormeDev tools for all devices.	Pass/Fail	Medium	Medium	Error msg are shown while used invalid inputs.
8.2	Check if placeholders guide users effectively.	Tablets, Mobile phones, Edge, Text input, Email input, Password input.	Error messages should display for invalid inputs, and placeholder text should be visible for empty fields.	Pass	Mobile phones, Tablets, Laptops, Desktops, Web-browsers.	Pass/Fail	High	High	Error and warnings are raised for invalid inputs.

Test case 9: Validate the UI Responsiveness to Keyboard Naviga on:

Test Case ID	Test Steps	Input Data	Expected Results	Actual Results	Test Environment	Execution Status	Bug Severity	Bug Priority	Notes
10.1	Use the Tab key to move through elements and press Enter to interact with buttons or links.	Buttons, Hyperlinks, Input fields, Interactive components (e.g., modals, accordions,)	Navigation should flow logically, and elements should respond correctly to keyboard interactions.	Pass	iPhone 16 pro, Samsung galaxy s24, galaxy nest 2.	Pass/Fail	Medium	Medium	focus works correctly for screen readers and keyboard-only users.

Test case 10: Verify Hover Effects:

Test Case ID	Test Steps	Input Data	Expected Results	Actual Results	Test Environment	Execution Status	Bug Severity	Bug Priority	Notes
9.1	Hover over buttons, menus, and links.	Laptops Desktops Firefox, Edge, Buttons, Menus, Cards, or panels	ensure hover effects (e.g., colour changes, animations) are consistent and functional across clickable elements.	Fail	Mobile phones, Tablets, Laptops, Desktops, Web-browsers using devTools.	Pass/Fail	Medium	Medium	Hover are not shown in low resolution devices.
9.2	Observe the visual changes during hover.	Buttons, Dropdown menus, Hyperlinks, Default state, Hover state	Hover effects should be consistent and improve the user experience without glitches	Fail	Mobile phones, Tablets, Laptops, Desktops, Web-browsers.	Pass/Fail	High	High	Hover are not shown in low resolution devices.

Learning Outcomes: What I Have Learned

- **Understanding Cross-Device Compatibility:** Gained insight into how layouts, input fields, hover effects, and other elements behave across different devices (mobile, tablet, laptop, desktop) and browsers.
- **Effective Input Validation:** Learned how placeholders, error messages, and input validation guide users and improve form usability.
- **Hover and Focus States:** Recognized the importance of visual feedback through hover and focus effects for user interaction and accessibility.
- **Testing Methodologies:** Enhanced skills in structuring test cases to systematically validate user interface elements and interactions.