Test Cases for Web horizon

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| Test Case ID | Description | Preconditions | Test Steps | Expected Results | Test Data | Priority |
| ## Web Horizon UI Test Cases |  |  |  |  |  |  |
|  | Test Case ID | Test Case Description | Preconditions | Test Steps | Expected Results | Test Data |
|  | --- | --- | --- | --- | --- | --- |
|  | TC\_001 | Verify Header Navigation | User is on the homepage. | 1. Navigate to each link in the main navigation (Algorithms, Exercises, Data Structures, Tutorials, Resources). 2. Navigate to "About Us", "For Business", "Log In", "Sign Up". | Each link navigates to the correct section/page. "Log In" and "Sign Up" lead to the respective login/signup pages. | N/A |
|  | TC\_002 | Verify Hero Carousel Functionality | User is on the homepage. | 1. Observe the hero carousel. 2. Click the next/previous buttons. | Carousel slides through all images smoothly. Next/Previous buttons function correctly. | N/A |
|  | TC\_003 | Verify Homepage Section Content | User is on the homepage. | 1. Check the presence and correctness of all sections (e.g., "Learn Visually!", "Data Structures and Algorithms", "Popular Topics"). 2. Verify the text content and image display in each section. | All sections are displayed correctly with accurate text and images. | N/A |
|  | TC\_004 | Verify Sign-up Form Functionality | User is on the signup page. | 1. Fill in the signup form with valid data. 2. Fill in the signup form with invalid data (e.g., empty fields, incorrect email format). 3. Submit the form. | 1. Successful signup with a confirmation message. 2. Error messages are displayed for invalid data. | Valid email, password; Invalid email, password; Empty fields |
|  | TC\_005 | Verify "What do you want to learn about?" section | User is on the relevant page. | 1. Select different options from the list. 2. Verify the displayed recommendations change accordingly. | Recommendations update correctly based on the selected options. | Various combinations of topic selections |
|  | TC\_006 | Verify Course Details Page | User is on a course detail page (e.g., "Intro to Generative AI"). | 1. Verify course title, description, duration, difficulty level, and other relevant information are displayed correctly. 2. Click the "Start Learning" button (if available). | Correct information is displayed; Button functionality works correctly (navigates to the appropriate learning page). | "Intro to Generative AI", "Learn How to Use AI for Coding", "Learn How to Use ChatGPT", "Machine Learning/AI Engineer" |
|  | TC\_007 | Verify Tabbed Navigation | User is on a page with tabs (e.g., Algorithm details page). | 1. Click on each tab. | Content within each tab is displayed correctly. | N/A |
|  | TC\_008 | Verify Algorithm Visualization | User is on an algorithm visualization page (e.g., Bubble Sort). | Algorithm visualization is loaded. | Visualization functions correctly, allowing users to step through the algorithm, pause, and resume. | Bubble Sort, Selection Sort |
|  | TC\_009 | Verify Code Example Display | User is on a page with code examples (e.g., Set examples). | Code examples are present. | Code examples are displayed correctly, formatted, and easy to read. | Python Set examples |
|  | TC\_010 | Verify Footer Links | User is on any page. | 1. Click on links in the footer (Company, About, Careers, Affiliates, Resources, Privacy Policy, Cookie Policy, Terms). | Each link navigates to the correct page. | N/A |
|  | TC\_011 | Verify Responsive Design (various screen sizes) | User is on different pages. | 1. Access the website on different screen sizes (desktop, tablet, mobile). | Layout and content adapt correctly to different screen sizes and orientations. | N/A |
|  | TC\_012 | Verify Image Loading | User is on pages with images (various). | Observe all images throughout the website. | All images load correctly and display properly. | N/A |
|  | TC\_013 | Verify Tooltip Functionality | User is on a page with tooltips. | 1. Hover over elements with tooltips. | Tooltips appear correctly and display relevant information. | N/A |
|  | TC\_014 | Verify Error Handling (Invalid Input) | User is on pages with forms. | 1. Enter invalid data into form fields. | Appropriate error messages are displayed. | Various invalid inputs (e.g., incorrect email format, non-numeric values in number fields). |
|  | TC\_015 | Verify Accessibility (Screen Reader Compatibility) | User is on various pages. | Test using a screen reader. | Content is accessible to screen readers. | N/A |
|  | TC\_016 | Edge Case: Empty Search Results | User is on a search page (if applicable). | Search functionality is enabled. | 1. Perform a search with terms unlikely to produce results. | Search terms not expected to produce results |
|  | TC\_017 | Edge Case: Large Datasets (If applicable) | User interacts with features that handle data (e.g., visualizations). | Use extremely large datasets (if the feature allows for it) to check for performance issues. | The system handles the large dataset without crashing or significant performance degradation. | (Data size dependent on feature implementation) |
| This table provides a starting point. More test cases will be needed depending on the detailed functionality of each screen and interaction within the "Web Horizon" design. Remember to adjust priorities based on your specific project requirements. The Test Data column needs populated with specific examples relevant to the functionality being tested. |  |  |  |  |  |  |