**General-Purpose Interactive Learning Guide Prompt (Template)**

**I. Configuration & Input Files**

**Lecture Topic:** L5.1: Introduction to collections and list data structure

* **Primary Source File (Transcript):** Week6CTTranscrptsCombined.pdf
  + **Purpose:** The main source for concepts, logic, and detailed explanations. This file is the primary authority on content.
* **Supplementary Source File (Slides):** wk6slidescombined.pdf
  + **Purpose:** A secondary source for formal definitions, diagrams, and key terms.

**Benchmark/Quiz Source File:** AQ6\_1.docx

* + **Purpose:** Provides the core questions for the knowledge check quiz. Its questions define the required style and difficulty level for any additional questions created.

**II. Objective**

Generate a single, self-contained, interactive HTML file that serves as a complete and dynamic learning guide. The guide must comprehensively teach all core concepts related to the **[Lecture Topic]** in a simple, accessible manner, using the provided source files. The final output must be a polished, user-friendly, and educational web page that is fully responsive on both desktop and mobile devices.

**III. Core Requirements**

**1. Application Design & Structure**

* **Layout:** Create a responsive, two-column layout.
  + **Desktop View:** A truly sticky sidebar for navigation on the left that is fixed in place and does not scroll with the main content area on the right.
  + **Mobile View:** The sidebar should be hidden by default. A "hamburger" menu button must be present to toggle the sidebar's visibility as a full-screen overlay.
* **Sidebar Navigation:**
  + The sidebar must contain links to all the different sections of the guide.
  + Clicking a link must smoothly scroll to the relevant section.
  + The active section's link must be visually highlighted as the user scrolls.
  + On mobile, the sidebar must automatically close after a navigation link is clicked.
* **Content Sections:** The main area must be divided into logical sections covering every major topic from the source files.

**2. Content & Sourcing**

* **Source-Driven Content:** All definitions, explanations, and examples must be derived exclusively from the provided source files.
* **Topic Scoping:** Analyze the provided source files to identify and list all major concepts. The learning guide must provide comprehensive coverage of every identified topic.
* **Source Hierarchy:** In case of a contradiction, the **Primary Source File** is the authority for explanations, while the **Supplementary Source File** is the authority for formal definitions.
* **Language & Tone:** Use simple, plain, and conversational English. The tone should be encouraging, friendly, and easy for a beginner to follow.

**3. Interactivity & Dynamic Elements**

* **Primary Interactive Component:** Include at least one meaningful, educationally relevant interactive element (e.g., a simulator, drag-and-drop game, interactive diagram). This component must reinforce a key concept from the source material.
* **Knowledge Check Quiz (CRITICAL):**
  + Include a quiz section at the end of the guide.
  + The quiz must incorporate all questions **exactly as worded** from the **[Benchmark/Quiz Source File]**.
  + Create **at least twice as many additional questions** as are present in the benchmark file. These new questions must match the style and difficulty level of the benchmark questions.
  + The questions should include single-choice, multiple-correct-choice, and true/false formats.
  + Provide immediate visual feedback (correct/incorrect) and a brief explanation for the correct answer(s) after a choice is submitted.

**IV. Technical & Styling Specifications**

* **Single File Output:** The final deliverable must be a single, complete HTML file with embedded CSS and JavaScript. All text formatting must be done using standard HTML tags (e.g., <strong>, <em>). Do not use Markdown syntax (e.g., **text**, *text*) in the final output.
* **Styling:** Use Tailwind CSS loaded from its CDN. The design must be clean, modern, and visually appealing.
* **Responsiveness & Accessibility:** The layout must work seamlessly on all screen sizes and follow basic accessibility principles.

**V. Visual Content & Diagrams**

* **Diagram Recreation (CRITICAL):** When a diagram, graph, or visual model from the source files is essential for understanding, you must recreate it as a native web element.
* **Preferred Method:** Use **SVG (Scalable Vector Graphics)** directly within the HTML to draw all diagrams, including flowcharts.
* **No Images:** Do not extract and embed images from the source files. All visual aids must be programmatically generated as SVG to ensure they are scalable and render correctly.