Summary and Checklist: Semantic Structure and Navigation

**Summary**

Screen readers and other assistive technologies rely on the underlying semantic markup to convey meaningful information about the structure and content of web pages. The following is a list of all of the main principles covered in this module:

**Checklist**

**Page Title**

- **Title for Every Page**
  - The page `<title>` MUST be present and MUST contain text.
  - The page `<title>` MUST be updated when the web address changes.

- **Meaningful Page Title**
  - The page `<title>` MUST be accurate and informative.
  - If a page is the result of a user action or scripted change of context, the text of the `<title>` SHOULD describe the result or change of context to the user.
  - The `<title>` SHOULD be concise.
  - The page `<title>` SHOULD be unique, if possible.
  - Unique information SHOULD come first in the `<title>`.
  - The page `<title>` SHOULD match (or be very similar to) the top heading in the main content.

**Language**

- **Primary Language of Page**
  - The primary language of the page MUST be identified accurately on the `<html>` element.
  - The primary language of the page MUST be identified with a valid value on the `<html>` element.

- **Language of Parts within the Page**
  - Inline language changes MUST be identified with a valid `lang` attribute.

- **Language Codes**
  - The language code MUST be valid.

**Landmarks**

- **Creating Landmarks (HTML 5, ARIA)**
  - Landmarks SHOULD be used to designate pre-defined parts of the layout (`<header>`, `<nav>`, `<main>`, `<footer>`, etc.).

**Best Practices for Landmarks**

- All text SHOULD be contained within a landmark region.
- Multiple instances of the same type of landmark SHOULD be distinguishable by different discernible labels (`aria-label` or `aria-labelledby`).
- A page SHOULD NOT contain more than one instance of each of the following landmarks: `banner`, `main`, and `contentinfo`.
- The total number of landmarks SHOULD be minimized to the extent appropriate for the content.

- **Backward Compatibility**
  - Landmarks SHOULD be made backward compatible.

- **General UI Components**
  - In content implemented using markup languages, the purpose of User Interface Components, icons, and regions MAY be programmatically determinable.

**Headings**

- **Real Headings**
  - Text that acts as a heading visually or structurally SHOULD be designated as a true heading in the markup.
  - Text that does not act as a heading visually or structurally SHOULD NOT be marked as a heading.

- **Meaningful Text**
  - Headings MUST be accurate and informative.
  - Heading text SHOULD be concise and relatively brief.

- **Outline/Hierarchy of Content**
  - Headings SHOULD convey a clear and accurate structural outline of the sections of content of a web page.
  - Headings SHOULD NOT skip hierarchical levels.

- **Heading Level 1 Best Practices**
  - The beginning of the main content SHOULD start with `<h1>`.
  - Most web pages SHOULD have only one `<h1>`.

**Links**

- **Designate Links Correctly**
  - Links MUST be semantically designated as such.
  - Links and buttons SHOULD be designated semantically according to their functions.
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### Links (continued)

#### Link Text
- A link MUST have programmatically-discernible text, as determined by the accessible name calculation algorithm.
- The purpose of each link SHOULD be able to be determined from the link text alone.
- The link text SHOULD NOT repeat the role ("link").
- Features such as labels, names, and text alternatives for content that has the same functionality across multiple web pages MUST be consistently identified.

#### Links to External Sites, New Windows, Files
- A link that opens in a new window or tab SHOULD indicate that it opens in a new window or tab.
- A link to a file or destination in an alternative or non-web format SHOULD indicate the file or destination type.
- A link to an external site MAY indicate that it leads to an external site.

#### Visually Distinguishable from Text
- Links MUST be visually distinguishable from surrounding text.

#### Visual focus indicator
- All focusable elements MUST have a visual focus indicator when in focus.
- Focusable elements SHOULD have enhanced visual focus indicator styles.

### Navigation Between Pages

#### Navigation Lists
- A navigation list SHOULD be designated with the `<nav>` element or role="navigation".
- A navigation list SHOULD include a visible method of informing users which page within the navigation list is the currently active/visible page.
- A navigation list SHOULD include a method of informing blind users which page within the navigation list is the currently active/visible page.

#### Consistency
- Navigation patterns that are repeated on web pages MUST be presented in the same relative order each time they appear and MUST NOT change order when navigating through the site.

#### Navigation Within Pages

##### Skip Navigation Links
- A keyboard-functional "skip" link SHOULD be provided to allow keyboard users to navigate directly to the main content.
- The "skip link" should be the first focusable element on the page.
- A skip link MUST be either visible at all times or visible on keyboard focus.

##### Table of Contents
- A table of contents for the page MAY be included at the top of the content or in the header.
- If a table of contents for the page is included, it SHOULD reflect the heading structure of the page.

##### Reading Order and Tab/Focus Order
- The reading order MUST be logical and intuitive.
- The navigation order of focusable elements MUST be logical and intuitive.
- `tabindex` of positive values SHOULD NOT be used.

##### Paginated Views
- A paginated view SHOULD include a visible method of informing users which view is the currently active/visible view.
- A paginated view SHOULD include a method of informing blind users which view is the currently active/visible view.

##### Single-Key Shortcuts
- If a single-character-key shortcut exists, then at least one of the following MUST be true: single-character-key shortcuts can be turned off, remapped, or are only active when the relevant user interface component is in focus.

#### Tables

##### Semantic Markup for Tabular Data
- Tabular data SHOULD be represented in a `<table>`.

##### Table caption/name
- Data tables SHOULD have a programmatically-associated caption or name.
- The name/caption of a data table SHOULD describe the identity or purpose of the table accurately, meaningfully, and succinctly.
- The name/caption of each data table SHOULD be unique within the context of other tables on the same page.
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Tables (continued)

Table Headers
• Table headers MUST be designated with <th>.
• Data table header text MUST accurately describe the category of the corresponding data cells.

Simple Header Associations
• Table data cells MUST be associated with their corresponding header cells.

Grouped Header Associations
• Table data group headers MUST be associated with their corresponding data cell groups.

Complex Header Associations
• Header/data associations that cannot be designated with <th> and scope MUST be designated with headers plus id.

Nested or Split Tables
• Data table headers and data associations MUST NOT be referenced across nested, merged, or separate tables.

Table Summary
• A summary MAY be provided for data tables.
• A data table summary, if provided, SHOULD make the table more understandable to screen reader users.

Layout Tables
• Tables SHOULD NOT be used for the purpose of purely visual (non-data) layout.
• Layout tables MUST NOT contain data table markup.

Lists

Semantic Markup for Lists
• Lists MUST be constructed using the appropriate semantic markup.

Iframes

Frame titles
• Iframes that convey content to users MUST have a non-empty title attribute.
• The iframe title MUST be accurate and descriptive.
• Frames MUST have a unique title (in the context of the page).

Page Title Within an Iframe
• The source page of an iframe MUST have a valid, meaningful <title>.

Semantic structure across iframes
• The heading hierarchy of an iframe SHOULD be designed to fit within the heading hierarchy of the parent document, if possible.

Hiding iframes that don't contain meaningful content
• Hidden frames or frames that do not convey content to users SHOULD be hidden from assistive technologies using aria-hidden="true".

Other Semantic Elements

<strong> and <em>
• Critical emphasis in the text SHOULD be conveyed through visual styling.
• Critical emphasis in the text SHOULD be conveyed in a text-based format.

<blockquote> and <q>
• The <blockquote> element SHOULD be used to designate long (block level) quotations.
• The <blockquote> element SHOULD NOT be used for visual styling alone.
• The <q> element (for inline quotations) SHOULD NOT be used as the only way to designate quotations.

<code>, <pre>
• Code SHOULD be marked with the <code> element and styled to look different from non-code text.
• Blocks of code SHOULD be formatted with the <pre> element.

Strikethrough/Delete and Insert
• Strikethrough text SHOULD be marked with the <del> element.
• Critical strikethrough text MUST be supplemented with a text-based method to convey the meaning of the strikethrough.
• Text designated for insertion SHOULD be marked with the <ins> element.
• Critical text designated for insertion MUST be supplemented with a text-based method to convey the meaning of the insertion.

Highlighting (<mark>)
• Highlighted text SHOULD be marked with the <mark> element.
• Critical highlighted text SHOULD be supplemented with a text-based method to convey the meaning of the highlighting.
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Parsing and Validity

Complete Start and End Tags
- In content implemented using markup languages, elements MUST have complete start and end tags.

Conflicts and duplicates
- IDs MUST be unique within a web page.
- Names, when provided, of block level elements (e.g. landmarks, tables, iframes, etc.) SHOULD be unique within a web page.

Parent-child relationships
- Markup SHOULD adhere to required parent-child relationships of elements and attributes.

Deprecated Markup
- Deprecated markup SHOULD NOT be used.