

## (a) <a> (Anchor Element)

### Content Specification:

<!ELEMENT a (%inline;)\* - (%a)>

- **Explanation:**
  - The <a> element can contain inline elements (%inline;), such as text or other inline elements like <span>, <img>, etc.
  - The - (%a) part means <a> cannot contain another <a> element inside it (no nested anchors).
  - **Category:** It is a **non-leaf element** because it must always have children (inline content) to be valid.
- **Example (Valid):**

```
<a href="https://example.com">Click here</a>
```
- **Example (Invalid):**

```
<a href="https://example.com"><a href="https://another.com">Nested link</a></a>
```

## (b) <tr> (Table Row Element)

### Content Specification:

<!ELEMENT tr (th|td)+>

- **Explanation:**
  - The <tr> element must contain one or more <th> (table header) or <td> (table data) elements ((th|td)+).
  - This means it cannot be empty; it requires children (<th> or <td>).
  - **Category:** It is a **non-leaf element** because it always needs children to be valid.
- **Example (Valid):**

```
<table>
  <tr>
    <td>Data 1</td>
    <td>Data 2</td>
  </tr>
</table>
```
- **Example (Invalid):**

```
<table>
  <tr></tr>
</table>
```

## (c) <br> (Line Break Element)

### Content Specification:

<!ELEMENT br EMPTY>

- **Explanation:**
  - The EMPTY specification indicates that <br> cannot have any content or children.
  - It is a standalone element and is self-closing (<br /> in XHTML 1.0).
  - **Category:** It is a **leaf element** because it cannot have any children and must be a terminal node in the element tree.

### • Element Declaration Syntax:

<!ELEMENT element\_name content\_model>

- `element_name`: The name of the element (e.g., <a>, <tr>, <br>).
- `content_model`: Specifies the type of content the element can have.

### • Content Models:

- **EMPTY**: The element cannot have any children or content (e.g., <br>).
- **Children Type**: Specifies what children are allowed, such as inline elements (%inline;) or specific elements (e.g., th|td).
- **Quantifiers**:
  - \* (Zero or more): The element can have zero or more of the specified children.
  - + (One or more): The element must have at least one child.
  - ? (Zero or one): The element can have zero or one child.
  - | (Choice): The element can have one of the listed options.

## <a> (Anchor Element)

### Content Specification:

<!ELEMENT a (%inline;)\* - (%a)>

- **Explanation:**
  - %inline; refers to inline elements (e.g., <span>, <img>, or plain text).
  - \* means zero or more inline elements are allowed.
  - - (%a) excludes nested <a> elements (no <a> inside another <a>).

## **<tr> (Table Row Element)**

### **Content Specification:**

`<!ELEMENT tr (th|td)+>`

- **Explanation:**

- `(th|td)` means the `<tr>` element can contain `<th>` (table header) or `<td>` (table data).
- `+` means it must have at least one `<th>` or `<td>`.

## **<br> (Line Break Element)**

### **Content Specification:**

`<!ELEMENT br EMPTY>`

- **Explanation:**

- `EMPTY` means the element cannot have any children or text content.
- It is self-closing in XHTML (e.g., `<br />`).