

Structuring accessible forms

Rachele DiTullio, Senior Accessibility Engineer, Citizens

Rachele DiTullio (she/they)

- Web developer for many years
- Graduate school for Information Studies (UXD)
- Learned accessibility and became a Certified Professional in Web Accessibility (CPWA)
- Progressed from software engineering to accessibility engineering in 2021



Agenda

Creating form fields

Grouping similar fields

Marking required fields

Validating data formats

Handling form errors

Web Accessibility

Web accessibility is the extent to which a website or web application can be used by **disabled people**.



Accessibility is not a technical problem to be solved

It's a human one.

- We must understand the ways disabled people access and use digital information.
- Disabled people will try to use your application.
- Who are you willing to exclude?

Accessibility must be baked in



Semantic Markup

Native HTML elements first

...then ARIA.

Accessible Form

** is a required field.*

Your name*

Your email*

Your phone number (Optional)

US 10-digit number

Creating Form Fields

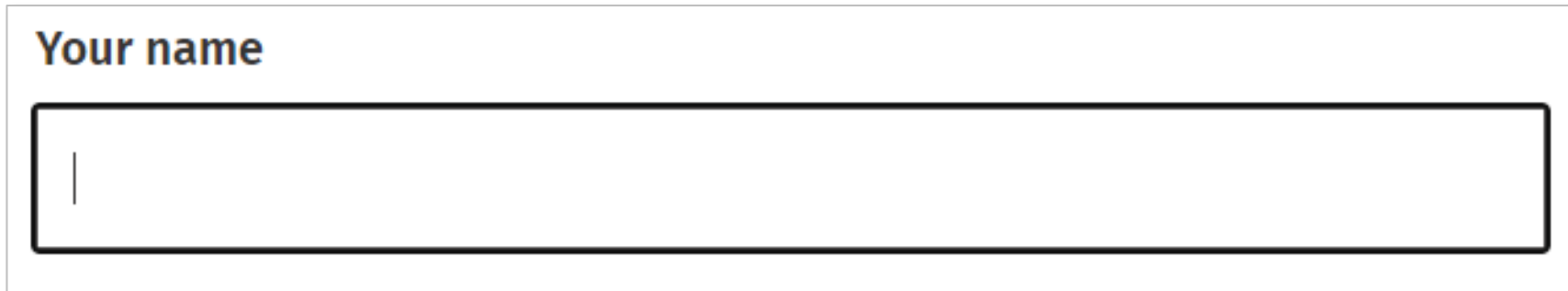
Labels provide visible and accessible names to form inputs.

`for` and `id` attributes programmatically link labels and inputs.

Label with Input

```
<label for="name">Your name</label>
```

```
<input type="text" id="name"  
name="name">
```



Input Types

```
<input type="email" id="email"  
name="email">
```

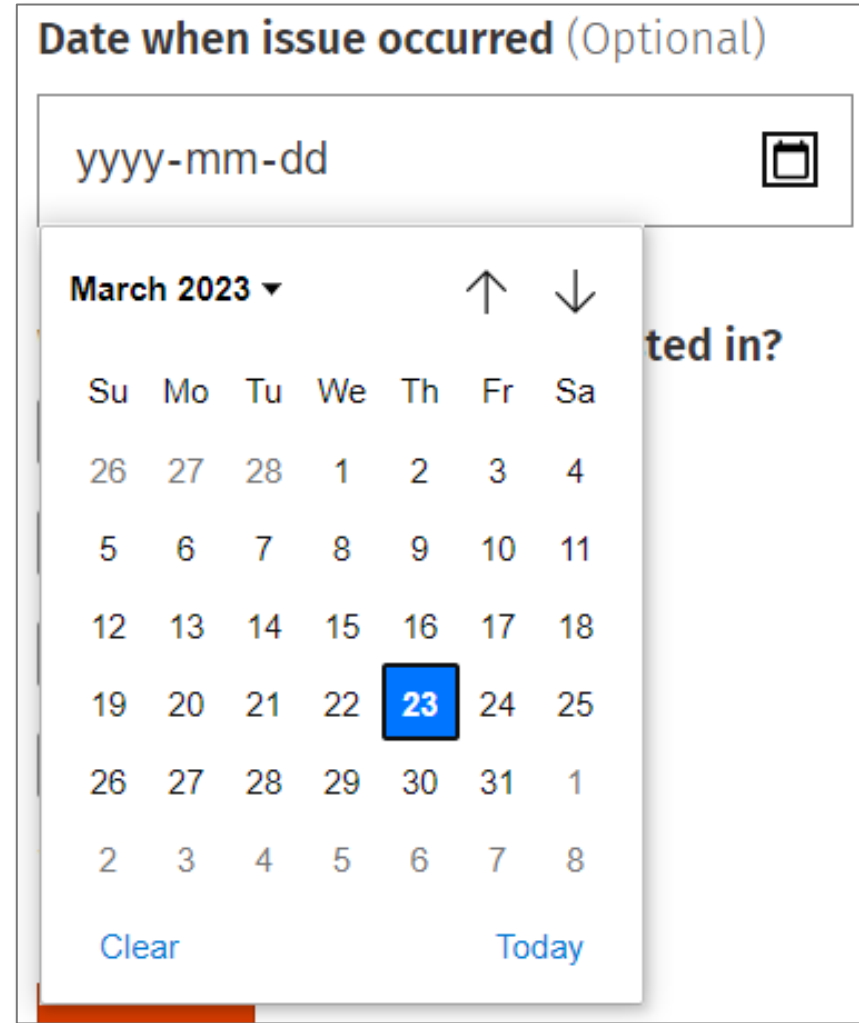
```
<input type="radio" id="yes"  
name="customer">
```

```
<input type="checkbox" id="checking"  
name="checking">
```

Other types include **search**, **url** and **tel**.

Input Type: Date

```
<input ...  
id="date"  
type="date"  
name="date">
```



autocomplete attribute

```
<input type="text" id="name"  
name="name" autocomplete="name">
```



Your name

Your email

- Rachele
- Rachele DiTullio

Single Select

```
<select id="why" name="why">
```

...

```
<option value="website">Website  
question</option>...</select>
```

Why are you contacting Citizens?

Website question

Select an option

Website question

General information question

Accessibility issue

Other

Grouping Similar Fields

Fieldset groups related fields, often radio buttons and checkboxes.

Legend provides a label for the grouped controls.

Fieldset with Legend

```
<fieldset>
```

```
<legend>Are you a current customer?</legend>
```

```
...
```

```
</fieldset>
```

Are you a current customer?

Yes

No

Radio Buttons

```
<label for="yes">  
<input name="customer" type="radio"  
id="yes">Yes</label>
```

```
<label for="no">  
<input name="customer" type="radio"  
id="no">No</label>
```

Checkboxes

```
<label for="banking">  
<input type="checkbox"  
id="banking"  
name="banking" ...>  
Banking</label>
```

```
<label for="investments">  
<input type="checkbox"  
id="investments"  
name="investments" ...>  
Investments</label>
```

What products are you interested in?

- Banking
- Investments
- Loans
- Credit cards

Select at least one option.

Marking Required Fields

Provide a visible indication of required fields.

Include either the **required** or the **aria-required="true"** attribute to programmatically mark a field as required.

required & aria-required

`<p>* indicates required field.</p>`

`...`

`<input type="text" required ...>`

or

`<input type="text" aria-required="true" ...>`

Required Radio Buttons and Checkboxes

There is no HTML way to make groups of radio buttons or checkboxes **required**.

Use server-side scripting (JavaScript fallback) to validate if a radio button or checkbox has been selected from a group.

Validating data formats

Add the **pattern** attribute to the `<input>` element and use a regular expression to define the data format.


Include help text indicating the valid data format, e.g. *US 10-digit number*.

pattern Attribute

```
<input pattern="[0-9]+(-[0-9]+)+" ... >
```

Your phone number (Optional)

US 10

 Please match the requested format.

aria-describedby Attribute

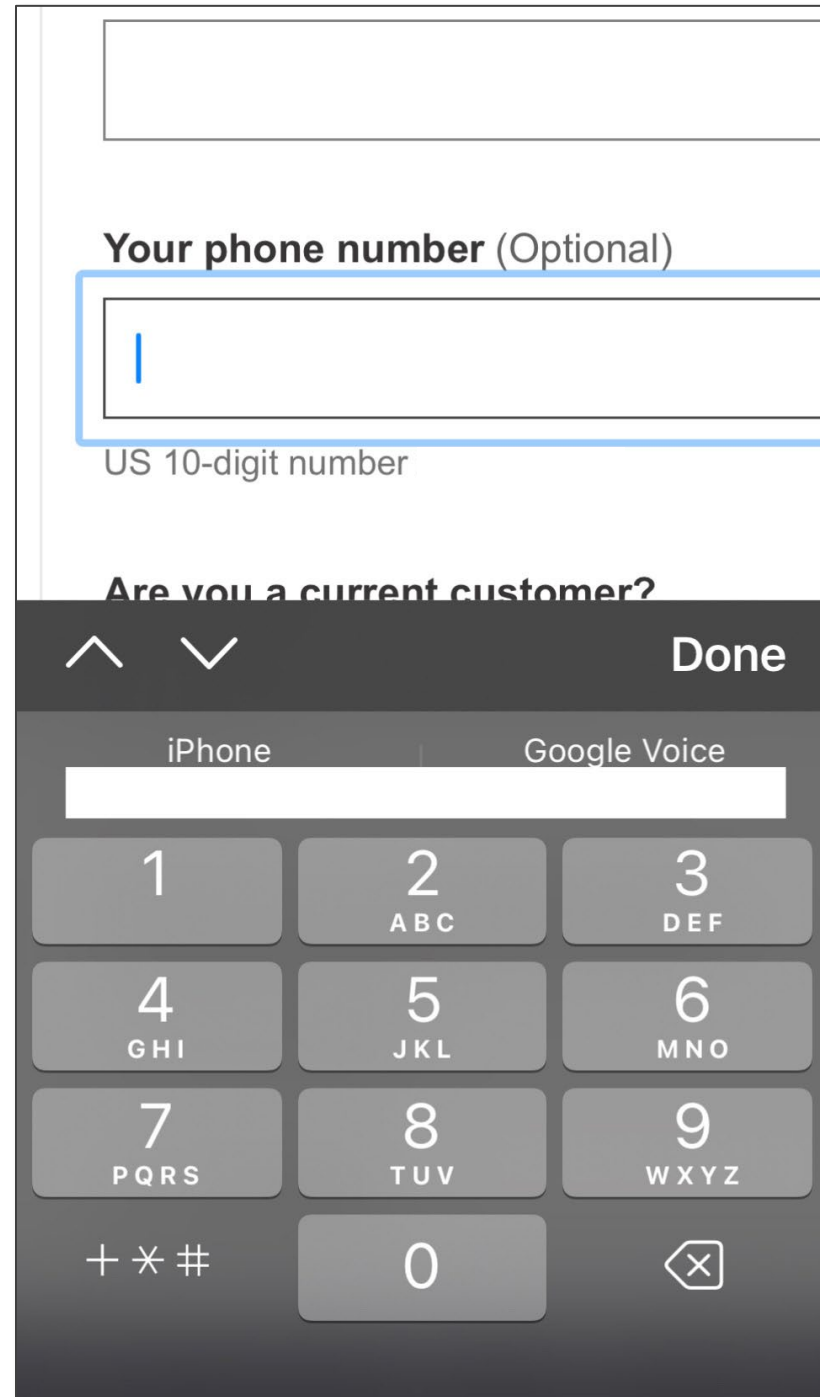
```
<input type="tel" ...  
aria-describedby="help-01">  
...  
<div id="help-01" ...>  
US 10-digit number</div>
```


inputmode Attribute

```
<input  
type="tel"
```

```
inputmode="tel"
```

```
...>
```



The image shows a mobile application interface. At the top, there is a text input field. Below it, the text "Your phone number (Optional)" is displayed. Underneath this text is a text input field with a blue border and a vertical cursor, indicating it is active. Below the input field, the text "US 10-digit number" is shown. Further down, the text "Are you a current customer?" is visible. At the bottom of the screen, a dark grey numeric keypad is displayed. The keypad has a "Done" button on the right, a back arrow on the left, and a "Google Voice" label above a search bar. The keypad buttons are arranged in a grid: 1, 2 (ABC), 3 (DEF); 4 (GHI), 5 (JKL), 6 (MNO); 7 (PQRS), 8 (TUV), 9 (WXYZ); + * #, 0, and a delete button (X).

novalidate Attribute

```
<form novalidate ...>
```

```
...
```

```
<input type="text" required ...>
```

```
...
```

```
</form>
```

Handling Form Errors

Include the `aria-invalid="true"` attribute on form fields in error.

Provide a visible error message and programmatically link it using the `aria-describedby` attribute.

aria-invalid Attribute

```
<input type="email" ... aria-  
required="true" aria-invalid="true"  
aria-describedby="error-02">
```

```
<div id="error-02"><svg role="img"  
aria-label="Error:">...</svg>Email  
format is address@domain.com.</div>
```

Error Messages

Error messages must be visible, persistent and close to the field in error.

Don't rely on color alone to convey errors. Include an icon with “error” as the alt text.

Group Error Messages

! Fix the following errors

- Your name is required
- Your email is not the correct format
- Your phone number is not the correct format
- Select if you are a Citizens customer
- Select why you are contacting Citizens
- Your message is required
- Select which products you are interested in

Example Error Messages

Your name*

❗ Enter full name.

Your email*

❗ Email format is address@domain.com.

Your phone number (Optional)

❗ Phone number requires 10 digits.

Summary

1. Verify each `<input>` element has a defined `type`, `id` attribute, `name` attribute and `autocomplete` attribute (if needed), linked to `<label for="id">`.
2. Group related fields such as radio buttons and checkboxes using `<fieldset>` and `<legend>` elements.
3. Provide data format requirements using the `pattern` attribute.
4. Mark **required fields** visually and programmatically.
5. Add `aria-invalid="true"` to fields in error; programmatically link help and error text.

Thank you

Rachele DiTullio, Senior Accessibility Engineer, Citizens

Email: rachele.ditullio@protonmail.com

LinkedIn:

<https://www.linkedin.com/in/racheleditullio/>

Twitter: @RacheleDiTullio

Mastodon: @racheled@mastodon.social

Slides: <https://racheleditullio.com/>

