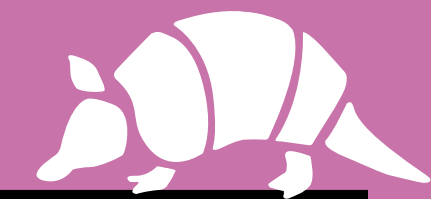


BRISTOL JS

---



# HTML5 CONSTRAINT VALIDATION

@drewm

**FORMS ARE  
HARD.**

**YOU'RE LAZY AND  
YOUR CODE SUCKS.**

**BROWSERS ARE  
HERE TO SAVE US.**

# THE PREMISE

1. Users enter weird shiz into forms
2. So user input needs to be validated
3. It's faster and more user-friendly to do that in the browser first
4. You're lazy and your code sucks
5. HTML5 introduced built-in validation for forms

## HTML5 CONSTRAINT VALIDATION

---



```
<form method="post" action="/cgi-bin/login.pl">

  <label>Username
    <input type="text" name="username" required>
  </label>

  <label>Password
    <input type="password" name="password" required>
  </label>

  <input type="submit" value="Log in">

</form>
```

## HTML5 CONSTRAINT VALIDATION

---



```
<form method="post" action="/cgi-bin/login.pl">

  <label>Username
    <input type="text" name="username" required>
  </label>

  <label>Password
    <input type="password" name="password" required>
  </label>

  <input type="submit" value="Log in">

</form>
```

### Text Input

Submit



Please fill out this field.



## HTML5 CONSTRAINT VALIDATION

---



```
<form method="post" action="/cgi-bin/login.pl">

  <label>Email
    <input type="email" name="email" required>
  </label>

  <label>Password
    <input type="password" name="password" required>
  </label>

  <input type="submit" value="Log in">

</form>
```

## HTML5 CONSTRAINT VALIDATION

---



```
<form method="post" action="/cgi-bin/login.pl">

  <label>Email
    <input type="email" name="email" required>
  </label>

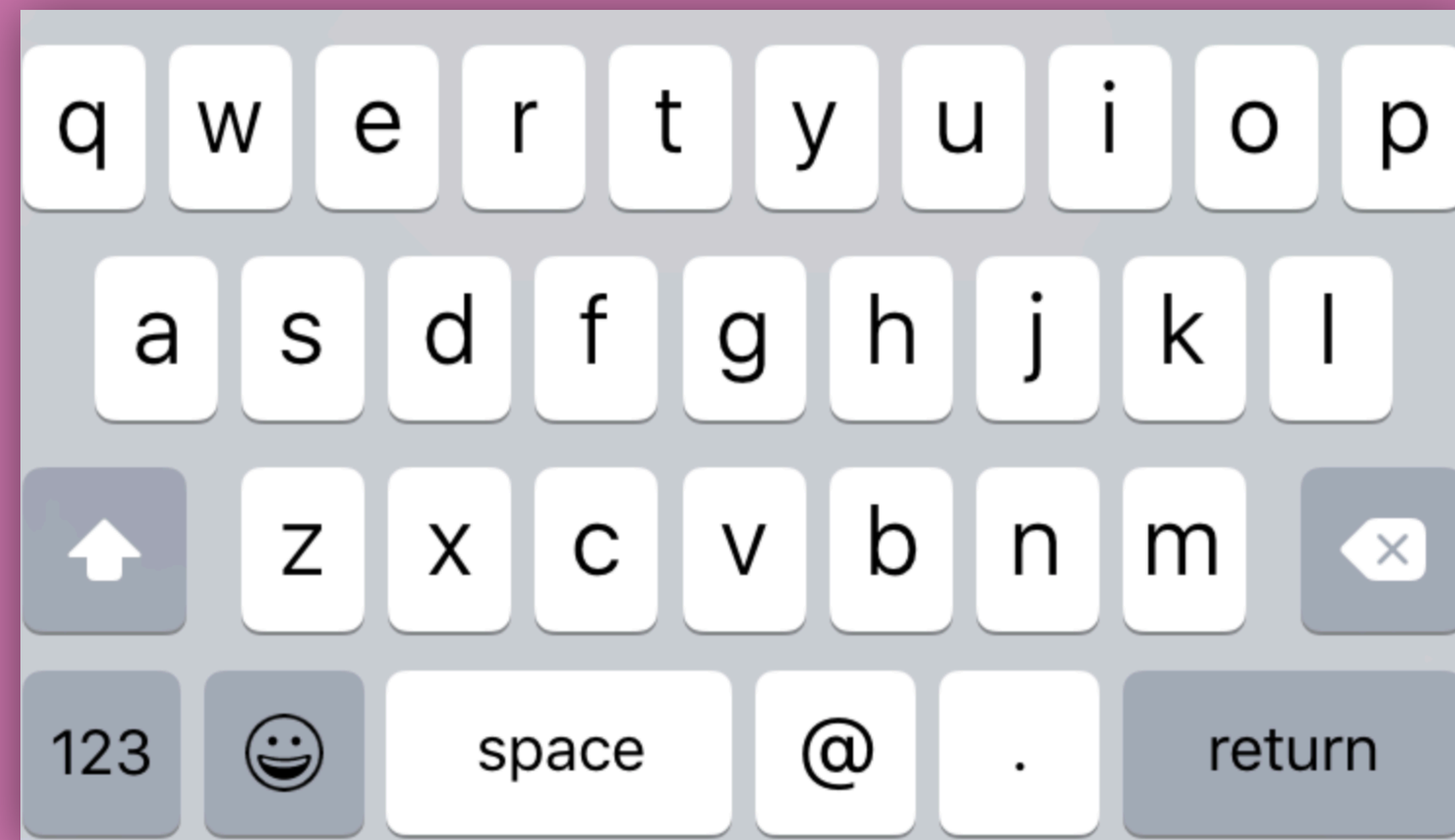
  <label>Password
    <input type="password" name="password" required>
  </label>

  <input type="submit" value="Log in">

</form>
```

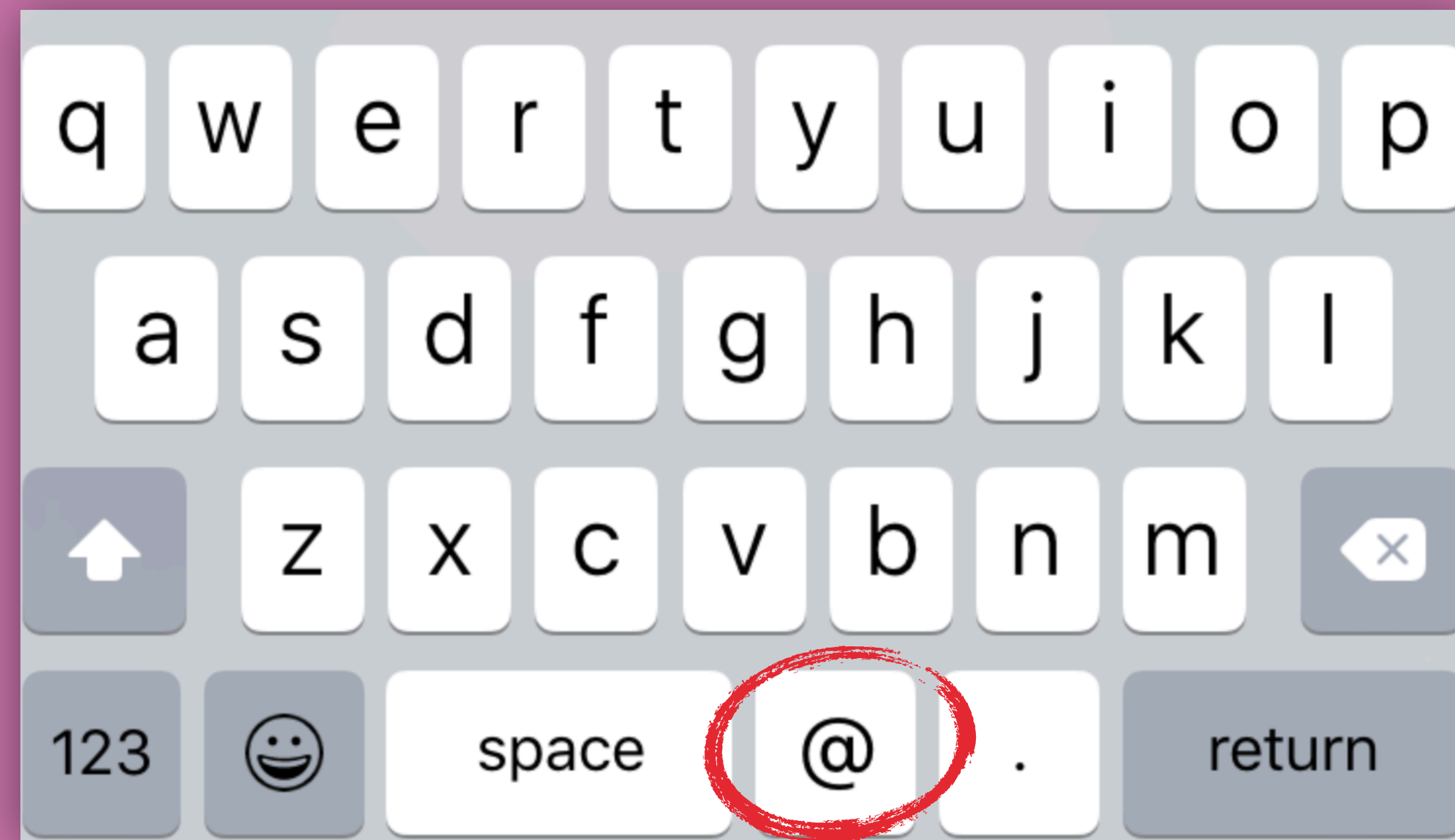
## HTML5 CONSTRAINT VALIDATION

---



## HTML5 CONSTRAINT VALIDATION

---



# BUILT-IN VALIDATION

1. Enforces required fields
2. Prevents mistakes by customising UI to common field types
3. Validates the format of common field types
4. Can be customised with advanced regex patterns
5. Can be styled with CSS

## HTML5 CONSTRAINT VALIDATION

---



```
input:valid {  
  border: 2px solid green;  
}
```

```
input:invalid {  
  border: 2px solid red;  
}
```

# CSS PSEUDO CLASSES

:valid

:invalid

:in-range

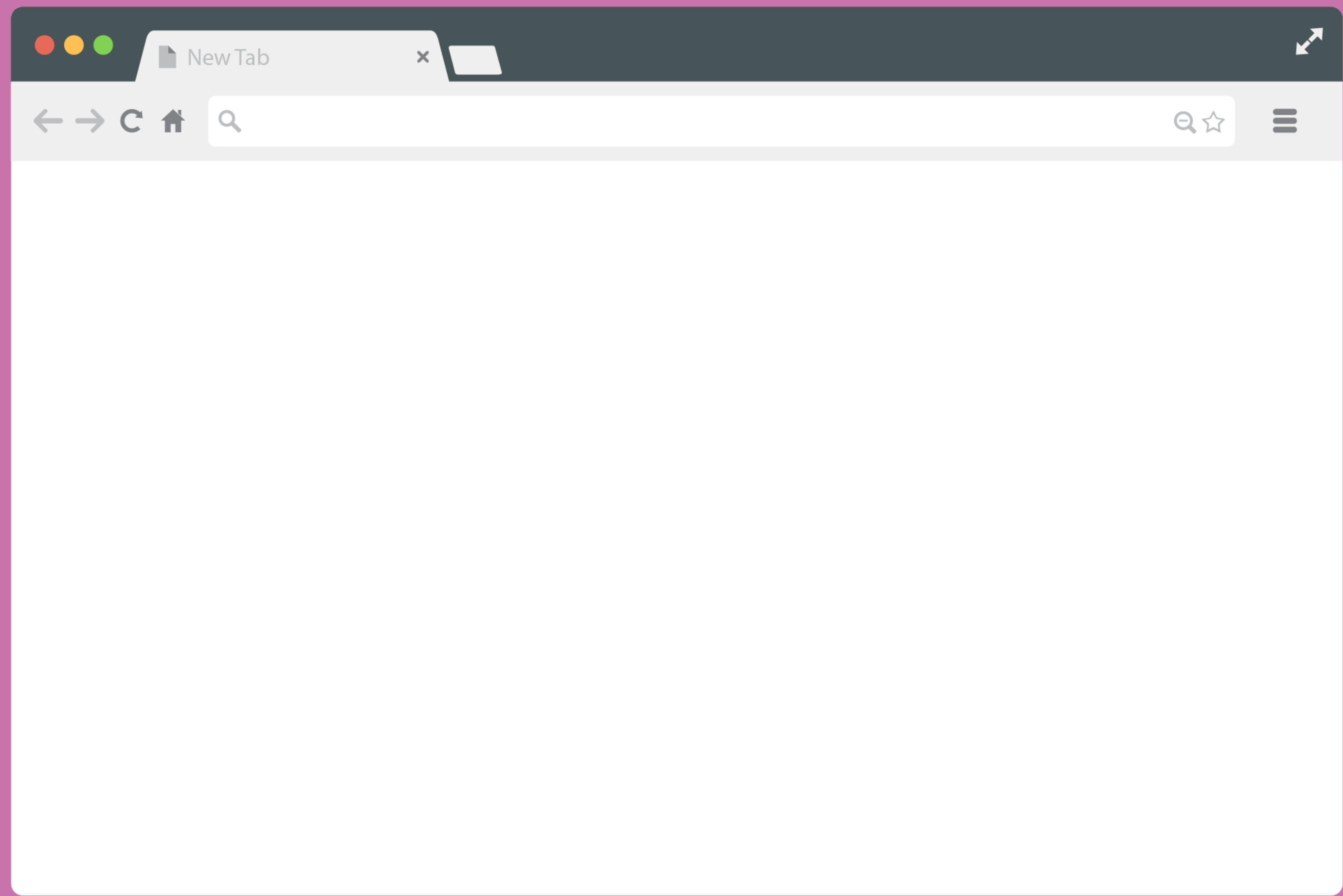
:out-of-range

:required

:optional

# HTML5 CONSTRAINT VALIDATION

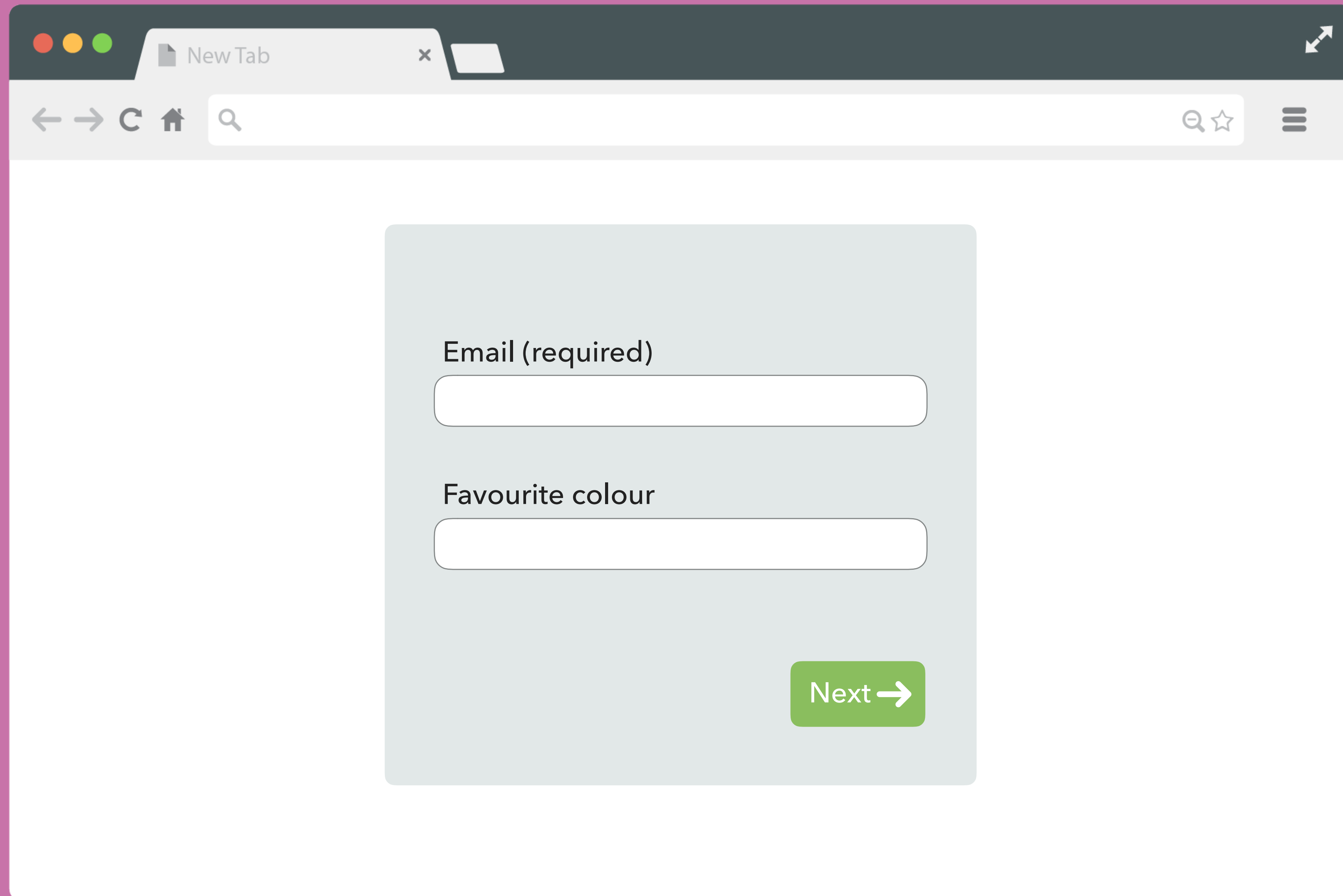
---





# HTML5 CONSTRAINT VALIDATION

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New Tab

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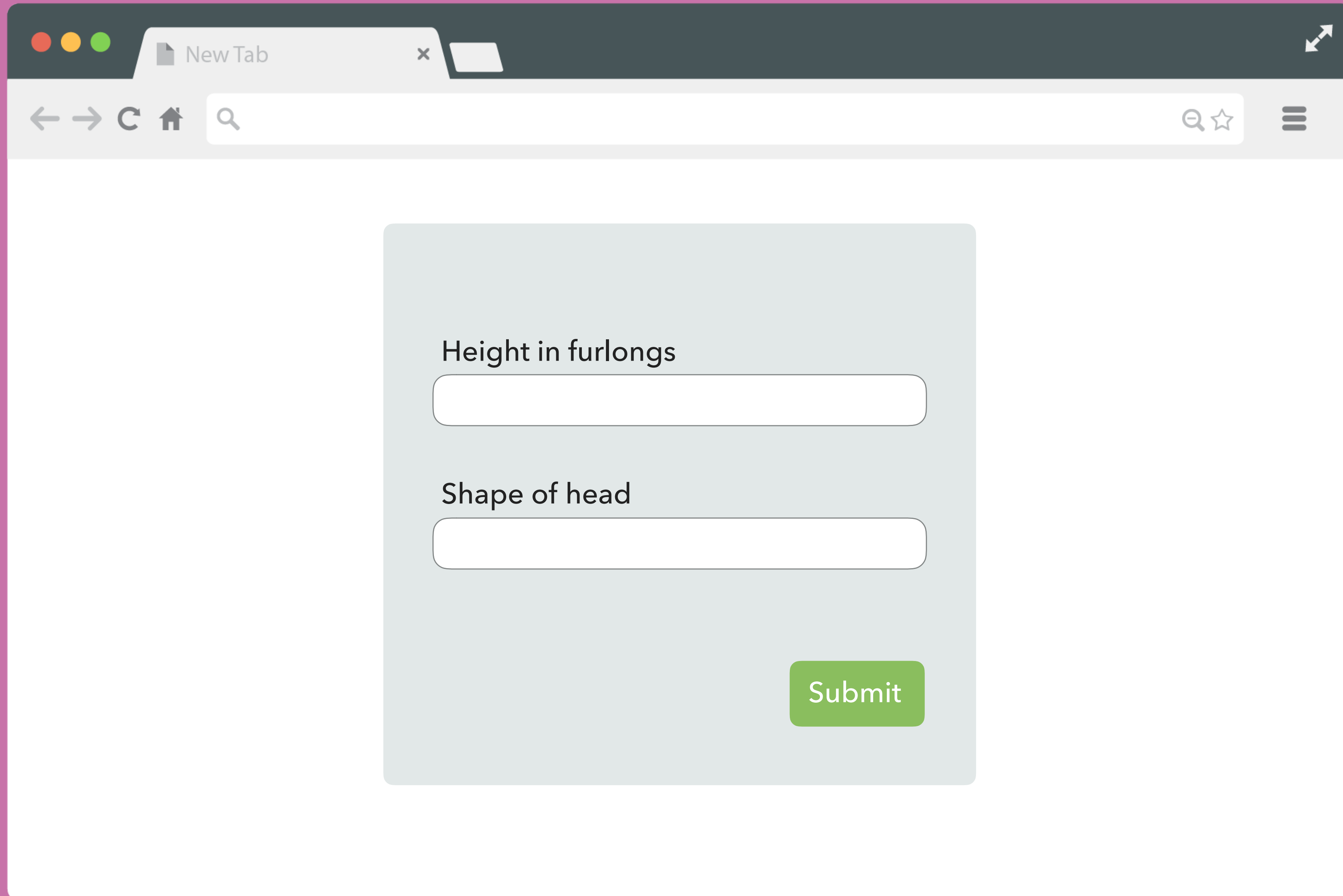
Email (required)

Favourite colour

Next →

# HTML5 CONSTRAINT VALIDATION

---



A screenshot of a web browser window. The browser has a dark grey title bar with three colored window control buttons (red, yellow, green) on the left and a maximize button on the right. Below the title bar is a tab labeled "New Tab" with a close button (x). The address bar is white and contains navigation icons (back, forward, refresh, home) on the left, a search icon, and a star icon on the right. The main content area is white and displays a light blue rounded rectangle containing a form. The form has two text input fields with labels "Height in furlongs" and "Shape of head". A green "Submit" button is located at the bottom right of the form.

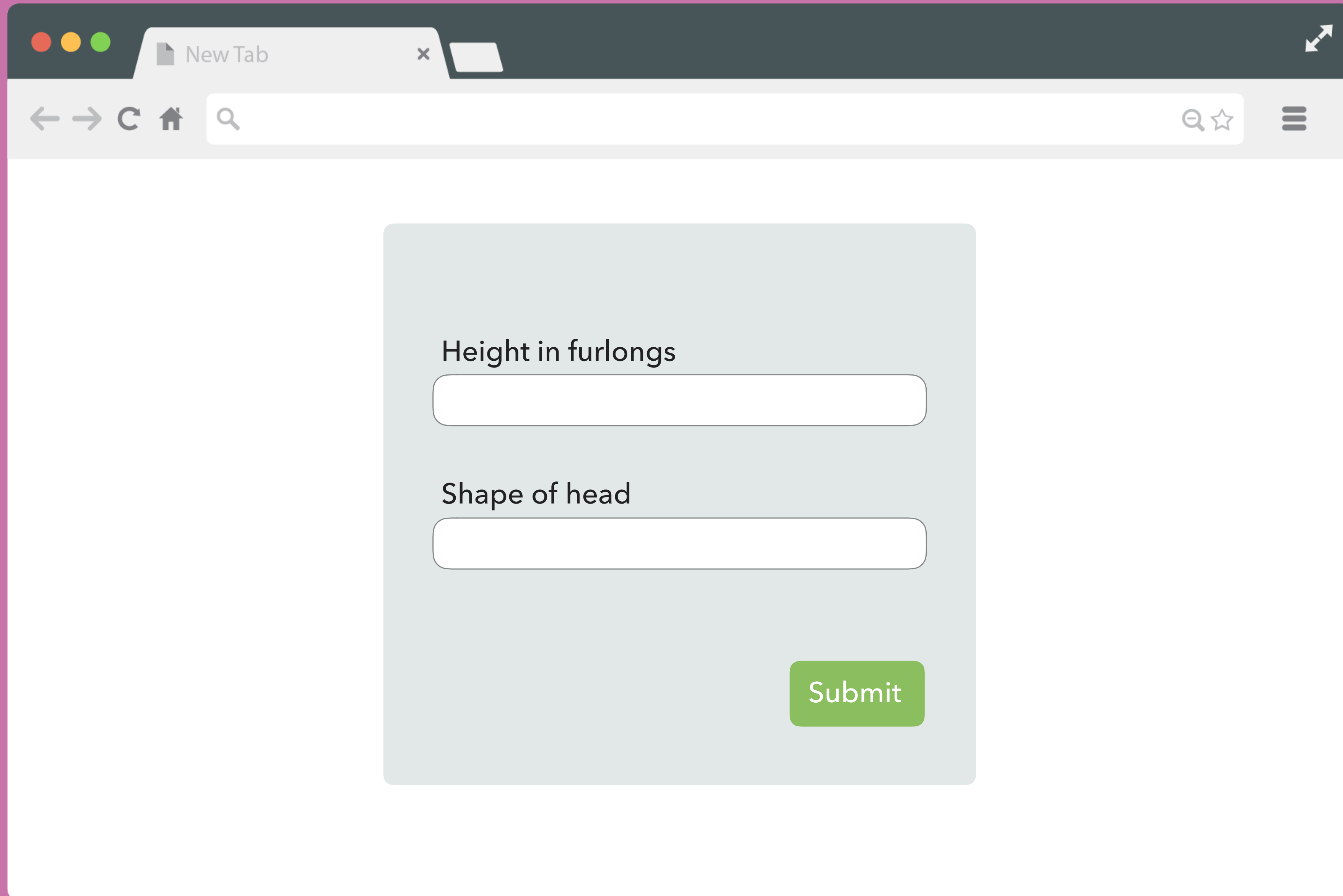
Height in furlongs

Shape of head

Submit

# HTML5 CONSTRAINT VALIDATION

---



A screenshot of a web browser window. The browser has a dark grey title bar with three colored window control buttons (red, yellow, green) on the left and a maximize button on the right. Below the title bar is a tab labeled "New Tab" with a close button (x). The address bar is white and contains navigation icons (back, forward, refresh, home) on the left, a search icon, and a star icon on the right. The main content area is white and displays a light blue rounded rectangle containing a form. The form has two text input fields with labels "Height in furlongs" and "Shape of head". A green "Submit" button is located at the bottom right of the form.

Height in furlongs

Shape of head

Submit



# novalidate



## HTML5 CONSTRAINT VALIDATION

---



```
<form method="post" action="/whatevs" novalidate>

  <label>Important information
    <input name="important" type="text" required>
  </label>

</form>
```

## HTML5 CONSTRAINT VALIDATION

---



```
<form method="post" action="/whatever" novalidate>  
  <label>Important information  
    <input name="important" type="text" required>  
  </label>  
  
</form>
```

# DISABLING VALIDATION

1. It's very tempting to turn off validation
2. In doing so you lose a lot of functionality
3. You then need to implement that functionality yourself
4. You're lazy and your code sucks
5. Better to work with it





# JAVASCRIPT API

# VALIDATION API

- ▶ Enables us to ascertain the validity state of a field
- ▶ We get to find out not only if it's valid/invalid, but also why
- ▶ We can then update our interface accordingly
- ▶ Write the bespoke parts and use the browser for the boring stuff
- ▶ Because you're lazy and your code sucks

## HTML5 CONSTRAINT VALIDATION

---



```
var myField = document.querySelector('input[type="text"]');  
var validityState = myField.validity;  
  
console.log(validityState); // ValidityState object
```

# VALIDITY STATE OBJECT

- ▶ `valid` - passes validation
- ▶ `valueMissing` - required field is empty
- ▶ `typeMismatch` - email or url field value is not the correct type
- ▶ `tooShort` - `minLength` attribute not satisfied
- ▶ `tooLong` - `maxLength` attribute not satisfied

# VALIDITY STATE OBJECT

- ▶ `patternMismatch` - **pattern** attribute not satisfied
- ▶ `badInput` - **non-numeric** value in a number field
- ▶ `stepMismatch` - **value** does not match the **step** attribute
- ▶ `rangeOverflow` - **value** is **heigher** than the **max** attribute
- ▶ `rangeUnderflow` - **value** is **lower** than the **min** attribute

## HTML5 CONSTRAINT VALIDATION

---



```
var myField = document.querySelector('input');

myField.onchange = function(){
  var state = myField.validity;

  if (state.valid) {
    console.log('Valid!');
  }

  if (state.valueMissing) {
    console.log('Required field empty!');
  }

  if (state.typeMismatch) {
    console.log('Incorrect value in %s field', myField.type);
  }
};
```

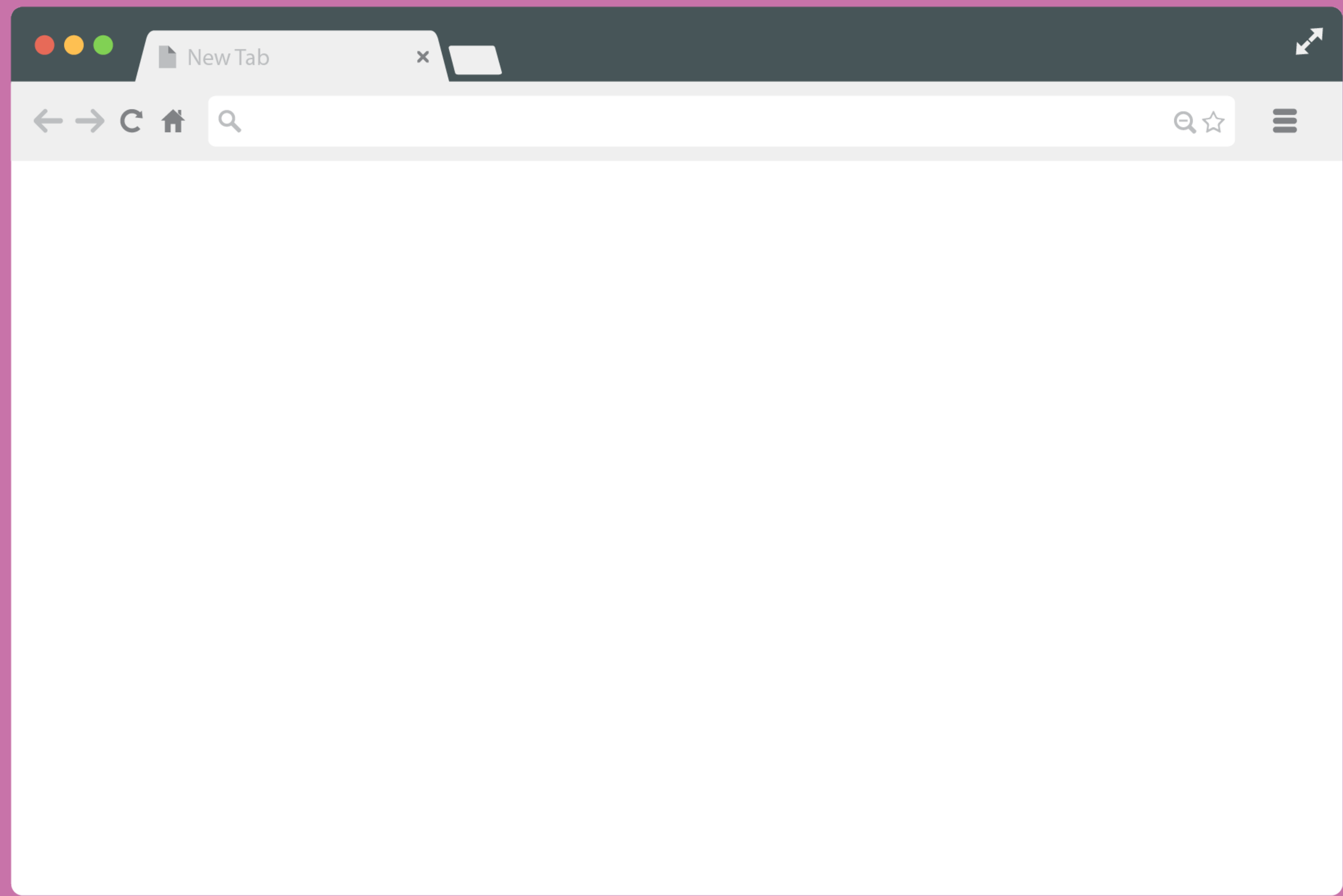
# VALIDATION API

- ▶ What you do with the information is up to you
- ▶ Offers the opportunity to customise the validation UI
- ▶ That's great because the browser UI is ugly



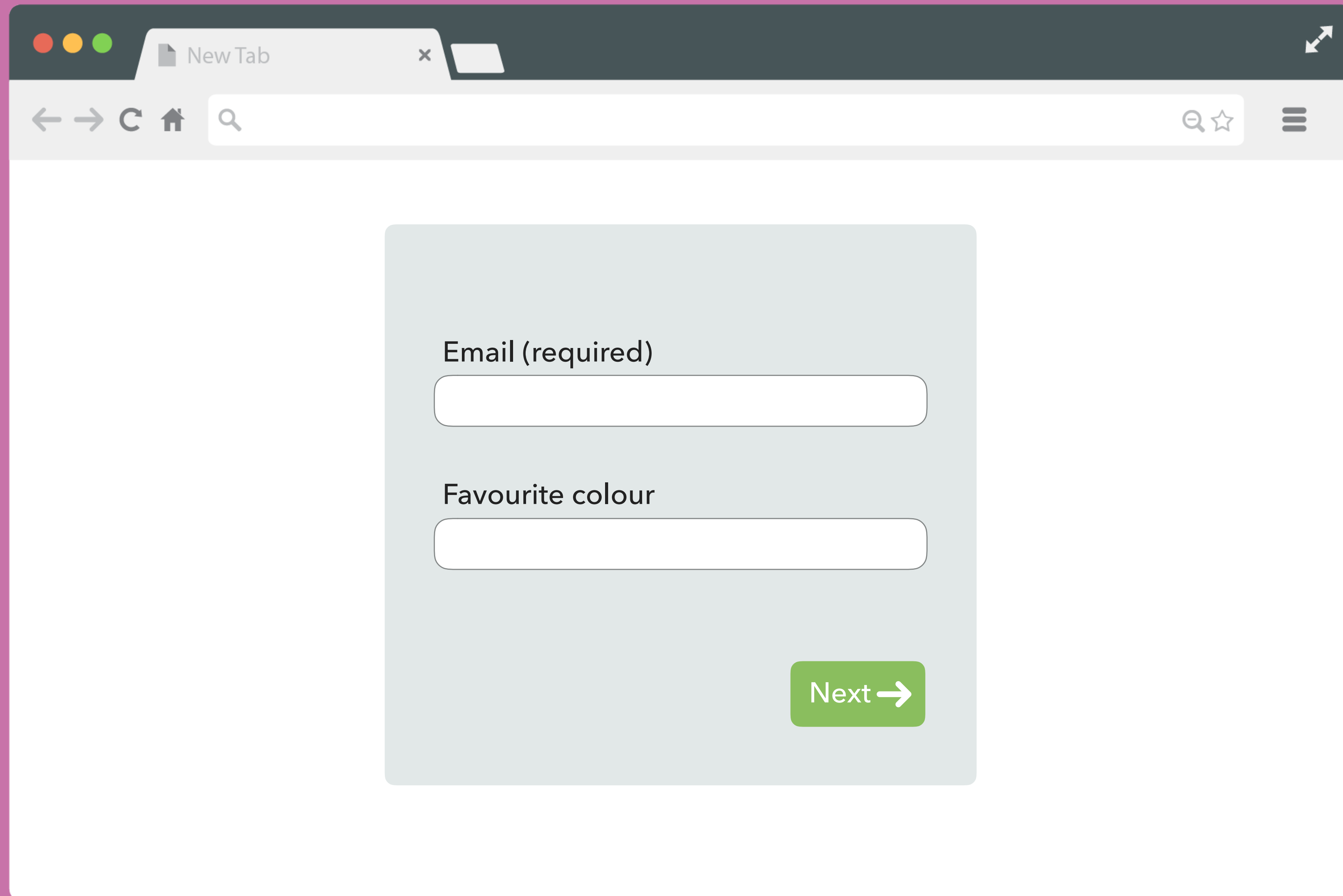
# HTML5 CONSTRAINT VALIDATION

---



# HTML5 CONSTRAINT VALIDATION

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New Tab

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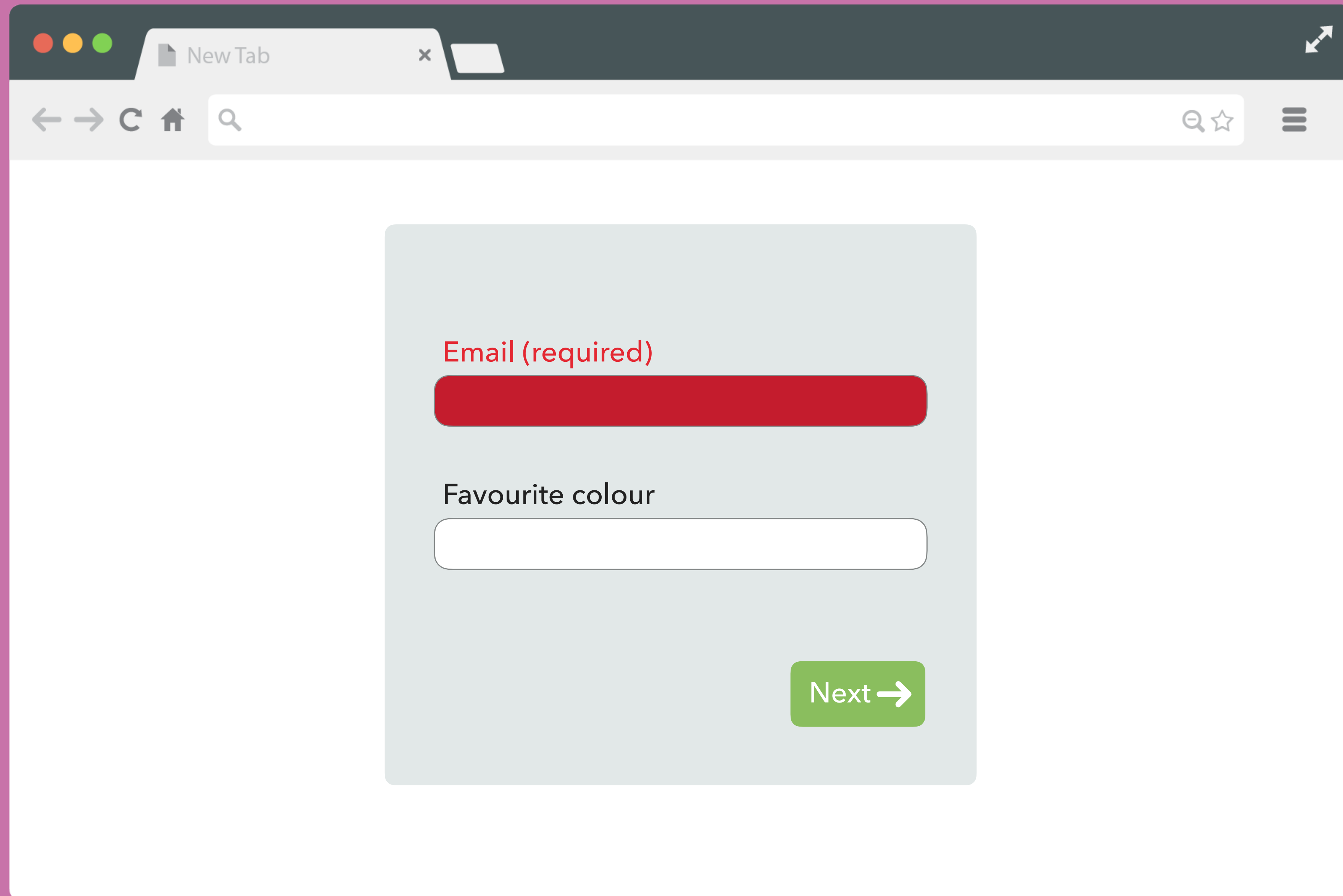
Email (required)

Favourite colour

Next →

# HTML5 CONSTRAINT VALIDATION

---



New Tab

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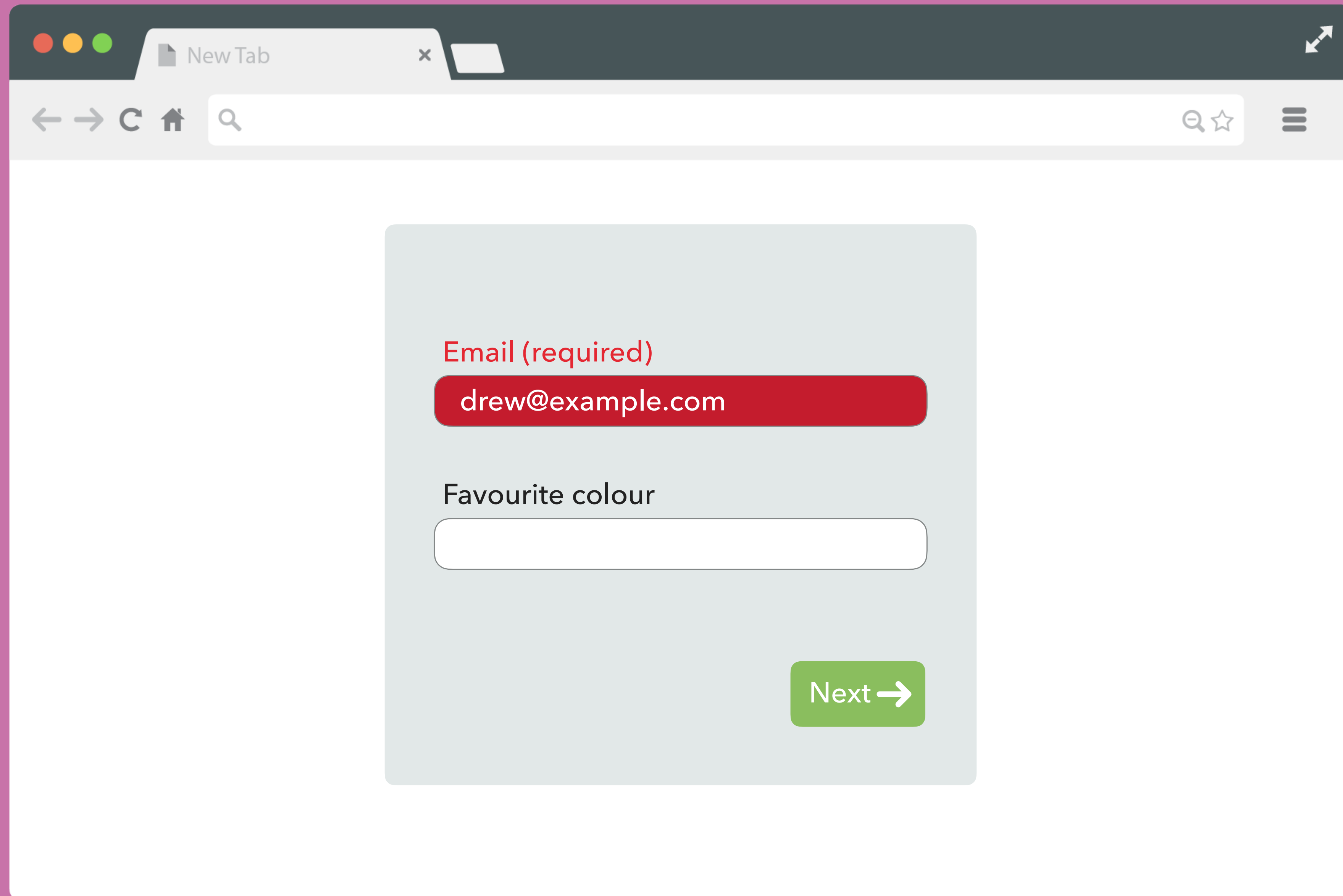
🔍 ☆ ☰

Email (required)

Favourite colour

Next →

# HTML5 CONSTRAINT VALIDATION



A web browser window with a dark grey header bar. The address bar shows 'New Tab' and a search icon. The main content area is white and contains a light grey rounded rectangle. Inside this rectangle, there is a red error message 'Email (required)' above a red input field containing 'drew@example.com'. Below this is a label 'Favourite colour' above an empty white input field. At the bottom right of the grey rectangle is a green button labeled 'Next' with a right arrow.

Email (required)

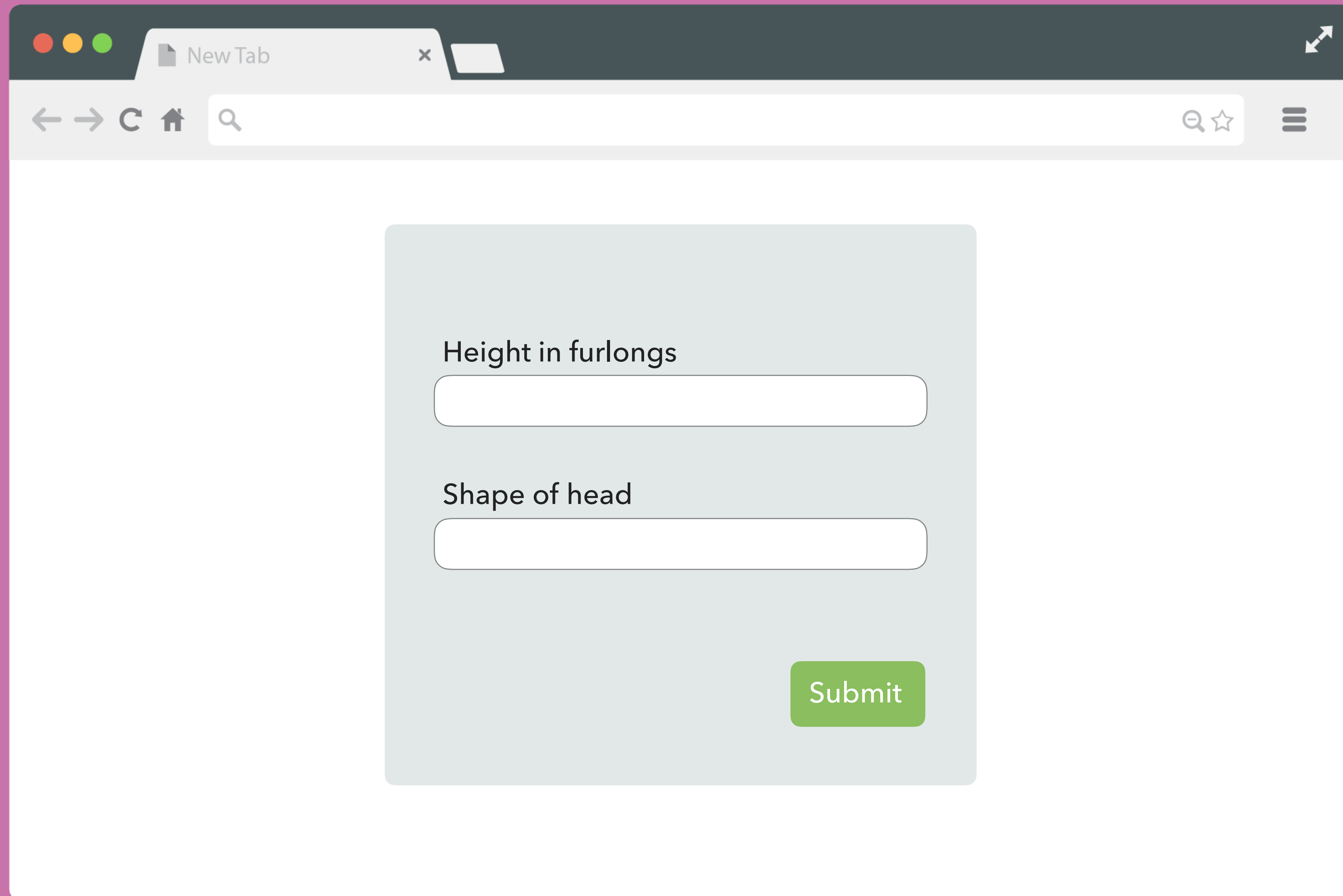
drew@example.com

Favourite colour

Next →

# HTML5 CONSTRAINT VALIDATION

---



A screenshot of a web browser window. The browser has a dark grey title bar with three colored window control buttons (red, yellow, green) on the left and a maximize button on the right. Below the title bar is a tab labeled "New Tab" with a close button (x). The address bar shows navigation icons (back, forward, refresh, home) and a search icon. The main content area is white and contains a light blue rounded rectangle form. Inside the form, there are two text input fields. The first field is labeled "Height in furlongs" and the second is labeled "Shape of head". Both fields are empty. At the bottom right of the form is a green "Submit" button.

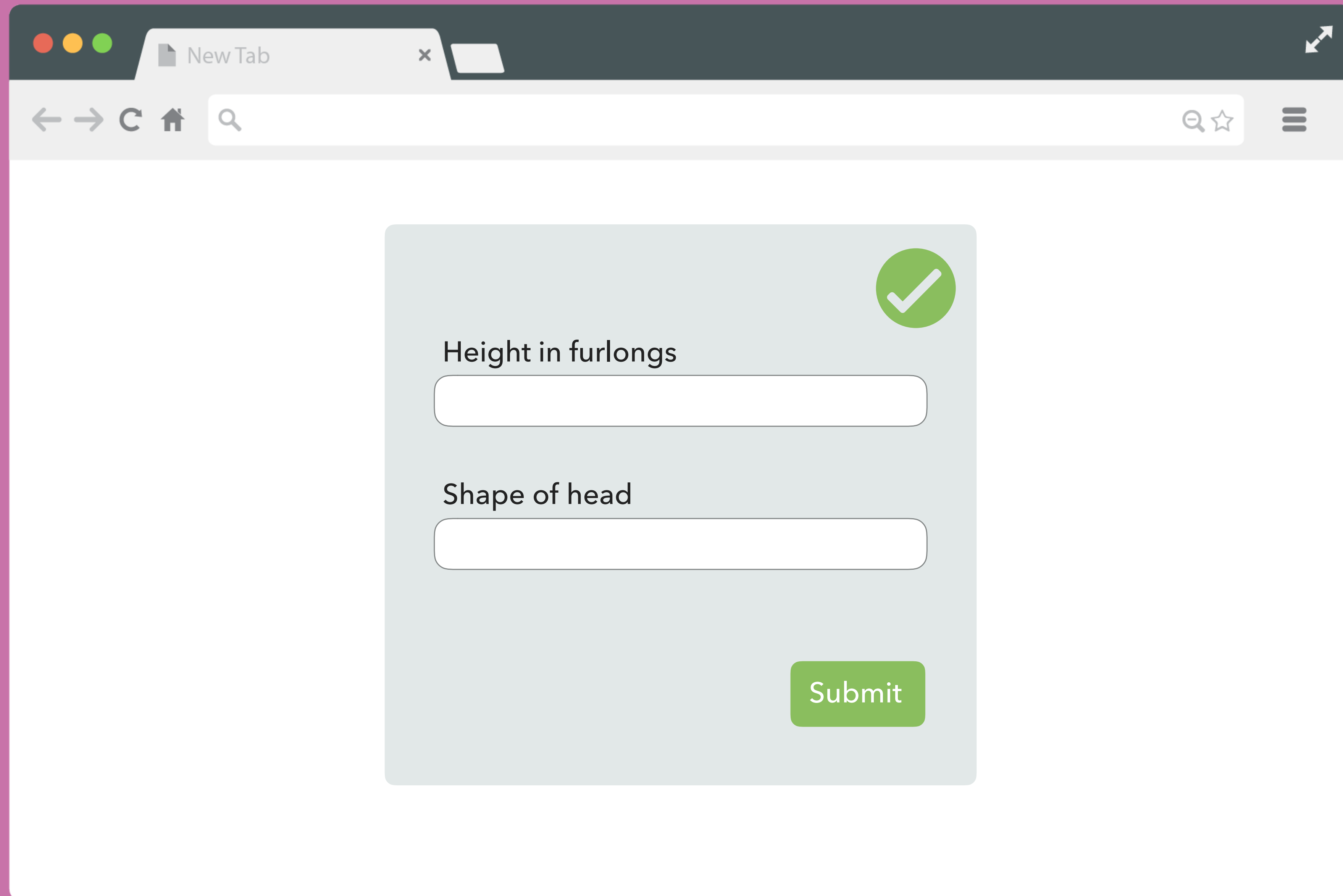
Height in furlongs

Shape of head

Submit

# HTML5 CONSTRAINT VALIDATION

---



A screenshot of a web browser window. The browser has a dark grey title bar with three colored window control buttons (red, yellow, green) on the left and a maximize button on the right. The tab bar shows a single tab labeled "New Tab" with a close button (x). The address bar contains navigation icons (back, forward, refresh, home) and a search icon, followed by a search input field. The main content area is white and displays a light blue rounded rectangle form. The form contains two text input fields with labels "Height in furlongs" and "Shape of head". A green circular icon with a white checkmark is positioned in the top right corner of the form. A green "Submit" button is located at the bottom right of the form.

Height in furlongs

Shape of head

Submit



**IT'S BRILLIANT.**



# IT'S BRILLIANT.

Search [developer.mozilla.org](https://developer.mozilla.org) for “constraint validation”

**THANKS.**

**@drewm**