PROGRESSIVE ENHANCEMENT IN PRACTICE

HI,
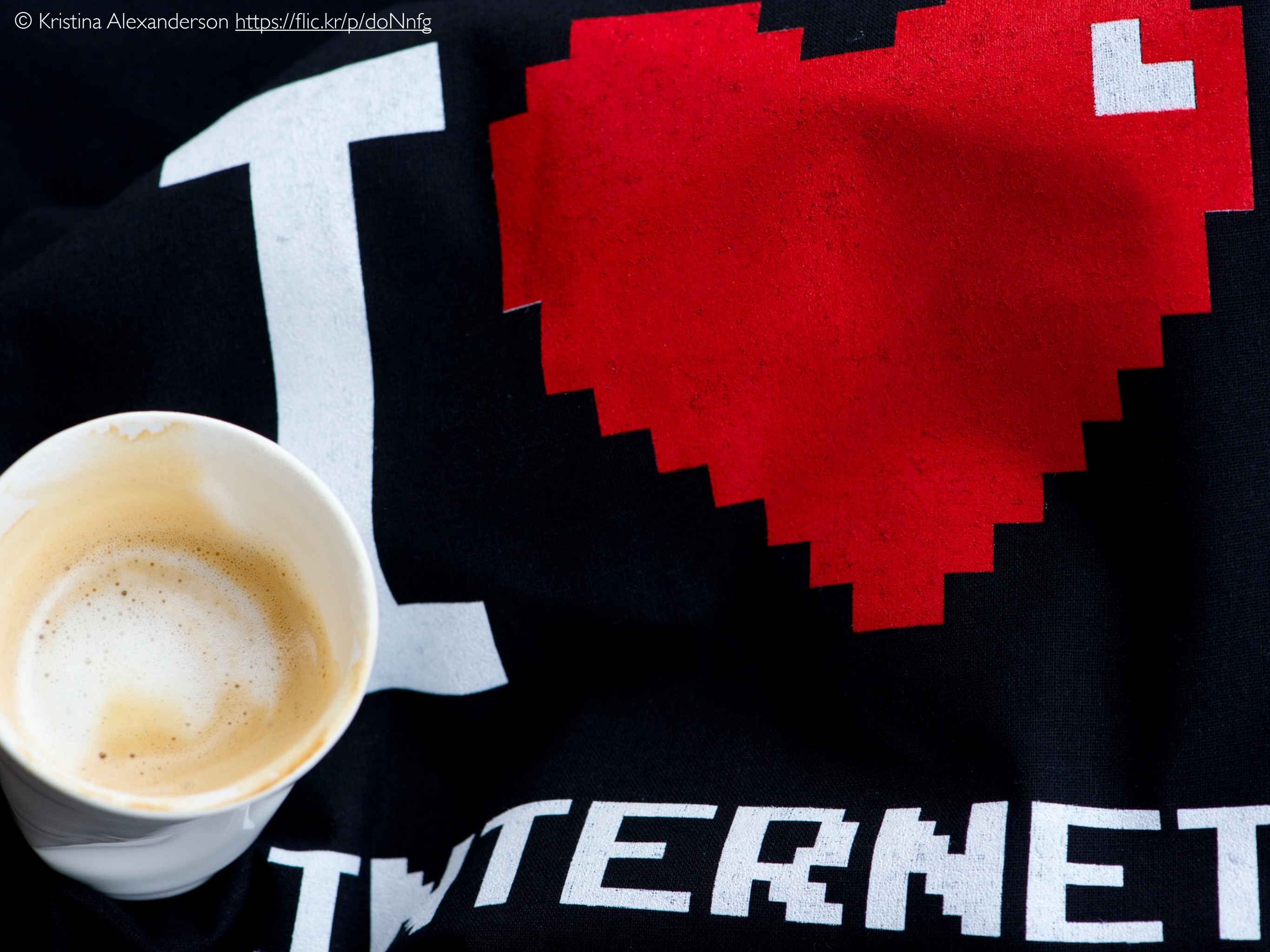
MY NAME IS **ROMAN**

@rstrangh

I WORK AT   **innoQ**

I ♥ INTERNET
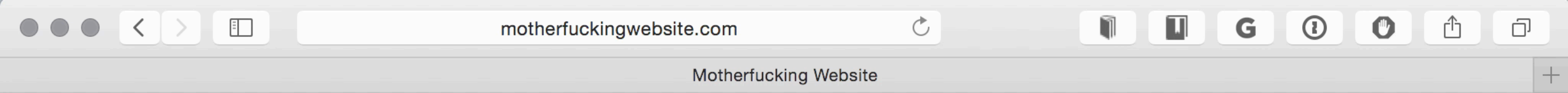
This is a motherfucking website.

And it's fucking perfect.

Seriously, what the fuck else do you want?

You probably build websites and think your shit is special. You think your 13 megabyte parallax-ative home page is going to get you some fucking Awwward banner you can glue to the top corner of your site. You think your 40-pound jQuery file and 83 polyfills give IE7 a boner because it finally has box-shadow. Wrong, motherfucker. Let me describe your perfect-ass website:

- Shit's lightweight and loads fast
- Fits on all your shitty screens
- Looks the same in all your shitty browsers
- The motherfucker's accessible to every asshole that visits your site
- Shit's legible and gets your fucking point across (if you had one instead of just 5mb pics of hipsters drinking coffee)

Well guess what, motherfucker:

You. Are. Over-designing. Look at this shit. It's a motherfucking website. Why the fuck do you need to animate a fucking trendy-ass banner flag when I hover over that useless piece of shit? You spent hours on it and added 80 kilobytes to your fucking site, and some motherfucker jabbing at it on their iPad with fat sausage fingers will never see that shit. Not to mention blind people will never see that shit, but they don't see any of your shitty shit.

You never knew it, but this is your perfect website. Here's why.

It's fucking lightweight

This entire page weighs less than the gradient-meshed facebook logo on your fucking Wordpress site. Did you seriously load 100kb of jQuery UI just so you could animate the fucking background color of a div? You loaded all 7 fontfaces of a shitty webfont just so you could say "Hi." at 100px height at the beginning of your site? You piece of shit.

It's responsive

You dumbass. You thought you needed media queries to be responsive, but no. Responsive means that it responds to whatever motherfucking screensize it's viewed on. This site doesn't care if you're on an iMac or a motherfucking Tamagotchi.

WEB DEVELOPMENT IS
HARD

THERE ARE

WEB TECHNOLOGIES

BROWSERS

https://github.com/alrra/browser-logos

Chrome		Safari	IE	Firefox		Opera
4	21	3.1	5.5	2	17	9.5-9.6
5	22	3.2	6	3	18	10.0-10.1
6	23	4	7	3.5	19	10.5
7	24	5	8	3.6	20	10.6
8	25	5.1	9	4	21	11
9	26	6	10	5	22	11.1
10	27	6.1	11	6	23	11.5
11	28	7		7	24	11.6
12	29	7.1		8	25	12
13	30	8		9	26	12.1
14	31			10	27	15
15	32			11	28	16
16	33			12	29	17
17	34			13	30	18
18	35			14	31	19
19	36			15	32	20
20	37			16	33	21
	38					22
						23
						24
						25

+ MOBILE

MORE BROWSERS

https://github.com/alrra/browser-logos

DEVICES

© Luke Wroblewski https://flic.kr/p/gS7txD
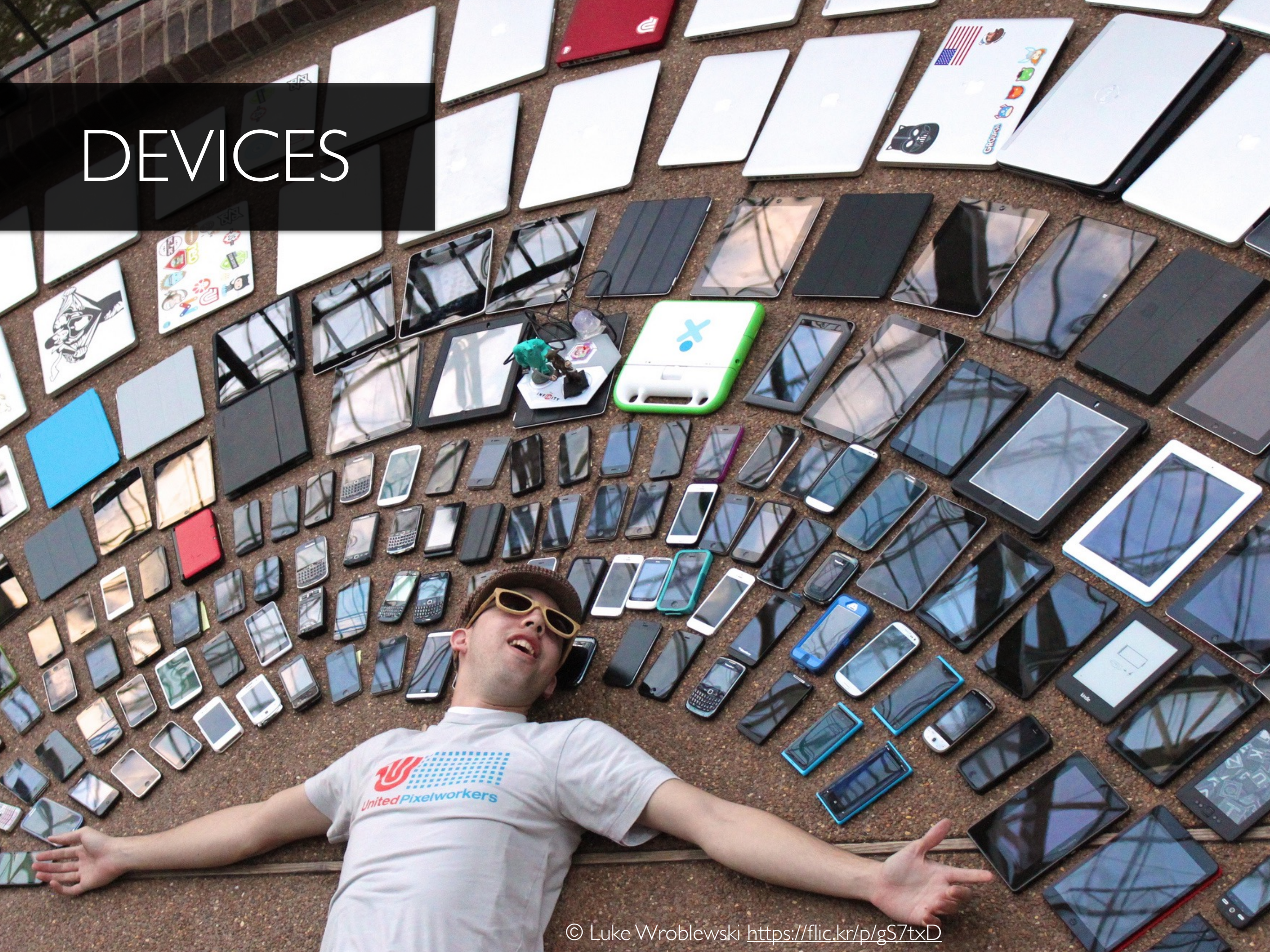
2.802.478.934

USERS WORLDWIDE

http://www.internetworldstats.com

DEAL WITH IT

Progressive Enhancement

Progressive enhancement is a technique to apply web technologies **in layers** on top of each other in such a way that all **content** und **core functionality** of a website is accessible for **every user.**

… once a test ensures that the user's browser supports the respective **feature,** the core experience of a website can be **enhanced stepwise**.

„Progressive Enhancement is a way of building websites that complements the philosophies that the web is build upon. "
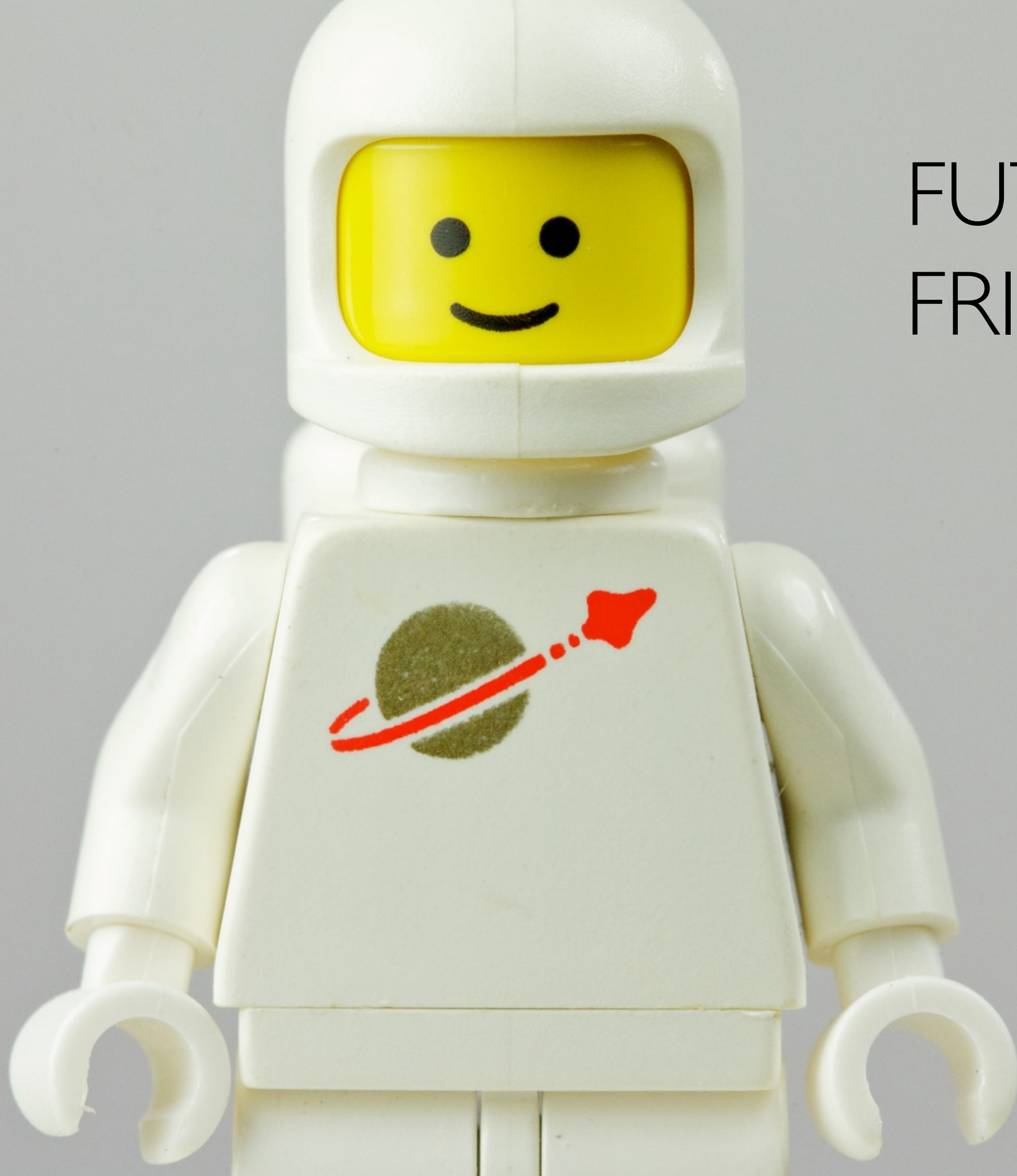
–Some guy on HasGeek TV

IN THEORY

BENEFITS

FAULTTOLERANT

*„Basically, when an elevator fails, it's useless.
When an escalator fails, it becomes stairs.
We should be building escalators, not elevators.“*

–Jake Archibald

FUTURE-
FRIENDLY

„*Progressive enhancement is not about dealing with old browsers, it's about dealing with new browsers.*"

–Jeremy Keith

ACCESSIBLE

Americans with disabilities are active consumers, with an annual aggregate income of $1 trillion.

ALSO

FAST

LINKABLE

SEARCHABLE

PROFITABLE

BUT

REQUIRES **THINKING**

Try zooming out with the [mousewheel] or [Up/Down].

THERE *ARE* EXCEPTIONS

„*Be pragmatic —
not dogmatic.*"

–Me, always

IN PRACTICE

ROCA *Airways*
Online Check-in

https://roca-airways.herokuapp.com

ROCA — RESOURCE-ORIENTED CLIENT ARCHITECTURE

http://roca-style.org

FEATURES

Input name and flight number

Show flight details

Preselected seat

Change to a different seat

Complete check-in

CORE FUNCTIONALITY

ROCA *Airways*

[ROCA Airways Homepage](#)

Online check-in

Welcome to ROCA Airways. You can check in online up to 72 hours before departure!

Flight number (required) [e.g. RC-1234]

Hint: Please enter a valid flight number, like *RC-1234*.

Name (required) [   ]

Hint: Please enter your full name.

[Check-in]

Please note: Once you have checked in, you can make changes to a flight (e.g. registering luggage) only at the airport counter.

ROCA *Airways* online check-in is a simple demo application demonstrating the [benefits](#) of [progressive enhancement](#) for both end users and developers.

Sources of this application can be found at [github](#). Feature and pull-requests are welcome, see the [issue tracker](#) for further details.

Created by [innoQ](#), though based on the collective wisdom of web advocates across the globe.

You can toggle styling and scripting below to see progressive enhancement in action.

[All on](#) [Styles only](#) [HTML only](#)

Use semantic markup

Add ARIA landmarks

Provide basic navigation (e.g. skip links)

Embrace HTML5 form validation

Fall back to server-side validation

STYLING

ROCA *Airways*

Online check-in

Welcome to ROCA Airways. You can check in online up to 72 hours before departure!

Flight number *(required)*

e.g. RC-1234

Name *(required)*

Check-in

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All on   Styles only   HTML only

Basic styling should be safe

Use external stylesheet(s)

Provide fallbacks

Add styles for states

Use separate classes for enhancements

Layout is optional, start mobile first

FEATURE-DETECTION & INTERACTION

ROCA *Airways*

Online check-in

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Flight number *(required)*

> e.g. RC-1234

Name *(required)*

>

Check-in

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You can toggle styling and scripting below to see progressive enhancement in action.

All on   Styles only   HTML only

Use feature-detection (e.g. Modernizr)

Test for CSS and JS Features

Load in additional enhancements

Use JavaScript unobtrusively

Provide keyboard access

Set proper ARIA attributes

IN DETAIL

FEATURE DETECTION

```html
<!DOCTYPE html>
<html lang="en" class="no-js">

<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">

  <title>ROCA Airways Online Check-in</title>

  <link rel="stylesheet" href="/assets/styles/normalize.css">
  <link rel="stylesheet" href="/assets/styles/main.css">

  <script src="/assets/vendor/modernizr.js"></script>
</head>

<body class="container">

    <!-- PAGE CONTENT -->

    <script src="/assets/scripts/main.js"></script>
</body>
</html>
```

```javascript
// We use feature-detection provided by Moderizr to load in¬
// additional enhancements async. For the sake of¬
// simpilcity all enhancements are loaded individually.¬

Modernizr.load([¬

    {¬
        test : /* boolean(ish) - Something truthy that you want to test         */,¬
        yep  : /* array (of strings) | string - The things to load if test is true  */,¬
        nope : /* array (of strings) | string - The things to load if test is false */,¬
        callback : /* function ( testResult, key ) | object { key : fn }         */¬
    }¬

]);¬
```

SVG

ROCA Airways Web Check-In | Seat Selection

RC-1234 | DOM-Baum | html.js.no-touch.backgroundsize.fontface.generatedcontent.svg.no-form... | body.container | main | form.plane

```
<!DOCTYPE html>
▼<html lang="en" class="js no-touch backgroundsize fontface generatedcontent svg no-formvalidation wf-lato-i7-active wf-opensans-n4-active wf-opensans-
n3-active wf-opensans-n6-active wf-active" style>
  ▶<head>…</head>
  ▼<body class="container">
    ▶<header role="banner" class="company-header">…</header>
    ▶<main role="main">…</main>
      <hr class="fallback">
    ▶<footer role="contentinfo" class="seperator">…</footer>
    ▶<script>…</script>
      <script src="http://ajax.googleapis.com/ajax/libs/jquery/2.1.1/jquery.js"></script>
      <script src="/assets/scripts/main.js"></script>
  </body>
</html>
```

>

```css
.augmented .seat {
    background-image: url(../images/seat_unoccupied.png);
}

.svg .augmented .seat {
    background-image: url(../images/seat_unoccupied.svg);
}
```

WEBFONTS

```
Modernizr.load([
    {
        test : Modernizr.fontface,
        yep  : '/assets/styles/fonts.css'
    }
]);
```

```
WebFont.load({
    google: {
        families: ['Lato:700italic', 'Open+Sans:400,300,600']
    }
});
```

CLIENT-SIDE VALIDATION

```javascript
Modernizr.load([
    {
        test : Modernizr.formvalidationapi && isStartPage(),
        yep  : "/assets/vendor/h5validate.js",
        callback : function() {
            $('.checkin-form').h5Validate({
                errorClass: 'invalid-input',
                validClass: 'valid-input',
                invalidCallback: function(elem, valid) {
                    $(elem.element).attr('aria-invalid', true);
                },
                validCallback: function(elem, valid) {
                    $(elem.element).removeAttr('aria-invalid');
                }
            });
        }
    }
]);
```

Flight number (required)

OC-1234

Hint: Please enter a valid flight number, like *RC-1234*.

Name (required)

Roman

Check-in

Please note: Once you have checked in, you can make changes to a flight (e.g. registering luggage) only at the airport counter.

---

html.js.no-touch.backgroundsize.fo... › body.container › main › form.checkin-form › div.form-row › input#flight.h5-active.invalid-input

```
<h1>Online check-in</h1>
▶<p class="lead-text">…</p>
▼<form class="checkin-form" action="/" method="post" data-h5-instanceid="0" novalidate="novalidate">
   ▼<div class="form-row">
      ▶<label for="flight">…</label>
        <input id="flight" type="text" required="true" aria-required="true" pattern="RC-[0-9]{4}" placeholder="e.g. RC-1234" name="flight" value
           class="h5-active invalid-input" aria-invalid="true">
      ▶<p class="error-message">…</p>
     </div>
   ▼<div class="form-row">
      ▶<label for="passenger-name">…</label>
        <input type="text" required="true" aria-required="true" id="passenger-name" name="passengerName" class="valid-input">
      ▶<p class="error-message">…</p>
     </div>
   ▶<div class="form-row">…</div>
   </form>
▶<p>…</p>
</main>
```

SEAT SELECTION

```html
<ul class="rows augmented">

  <li>
    <ul class="seats">

      <li title="8A (Free)" class="with-tooltip">▭

      <li title="8B (Free)" class="with-tooltip selected">
        <label>
          <input type="radio" name="seat" id="seat-8B" value="8B">
          8B
        </label>
      </li>

      <li title="8C (Free)" class="with-tooltip">▭

      <li title="8D (Free)" class="with-tooltip">▭

      <li title="8E (Occupied)" class="with-tooltip">▭

      <li title="8F (Free)" class="with-tooltip">▭

    </ul>
  </li>

  <!-- More Seats -->
  <li>...</li>
  <li>...</li>

</ul>
```

```
{
    // The seat selector should be fine with just jQuery in place
    test : window.jQuery && isSeatSelectionPage(),
    yep  : "/assets/scripts/seat_selector.js",
    callback : function () {
        $(".rows").seatPicker();
    }
},
```

```javascript
var seatSelector = ".seats li:not(.unavailable)";
var inputSelector = "input:radio";

function seatPicker(selector) {
    var container = selector.jquery ? selector : $(selector);

    container.addClass("augmented").
        on("click", seatSelector, onSelect).
        on("change", inputSelector, onSelect).
        on("focus", inputSelector, onFocus).
        on("blur", inputSelector, onBlur);

    // initialize state
    var selected = container.find(inputSelector + ":checked").
        closest(seatSelector);
    onSelect.call(selected[0]);
}
```

```javascript
function onFocus(ev) {
    var field = onBlur.apply(this, arguments);
    field.addClass("focused");
}

function onBlur(ev) {
    var field = $(this).closest(seatSelector);
    field.closest(".augmented").find(seatSelector).removeClass("focused");
    return field;
}

function onSelect(ev) {
    $(inputSelector, this).prop("checked", true).
        closest(".augmented").find(seatSelector).each(sync);
}

// two-way synchronization of underlying control and fancy representation
function sync(i, node) {
    var el = $(node);
    var selected = el.find(inputSelector).prop("checked");
    el.toggleClass("selected", selected);
}
```

TAKING IT FURTHER

Offline

Notifications

Service Workers

WebGL

IN SUMMARY

WORKS

ROCA Airways Web Check-In | Start

ROCA Airways Logo

ROCA Airways Homepage

Online check-in

Welcome to ROCA Airways. You can check in online up to 72 hours before departure!

Flight number (required) _____

Hint: Please enter a valid flight number, like **RC-1234**.

Name (required) _____

Hint: Please enter your full name.

(BUTTON) Check-in

Please note: Once you have checked in, you can make changes to a flight (e.g. registering luggage) only at the airport counter.

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All on Styles only HTML only

(NORMAL LINK) Use right-arrow or <return> to activate.
 Arrow keys: Up and Down to move. Right to follow a link; Left to go back.
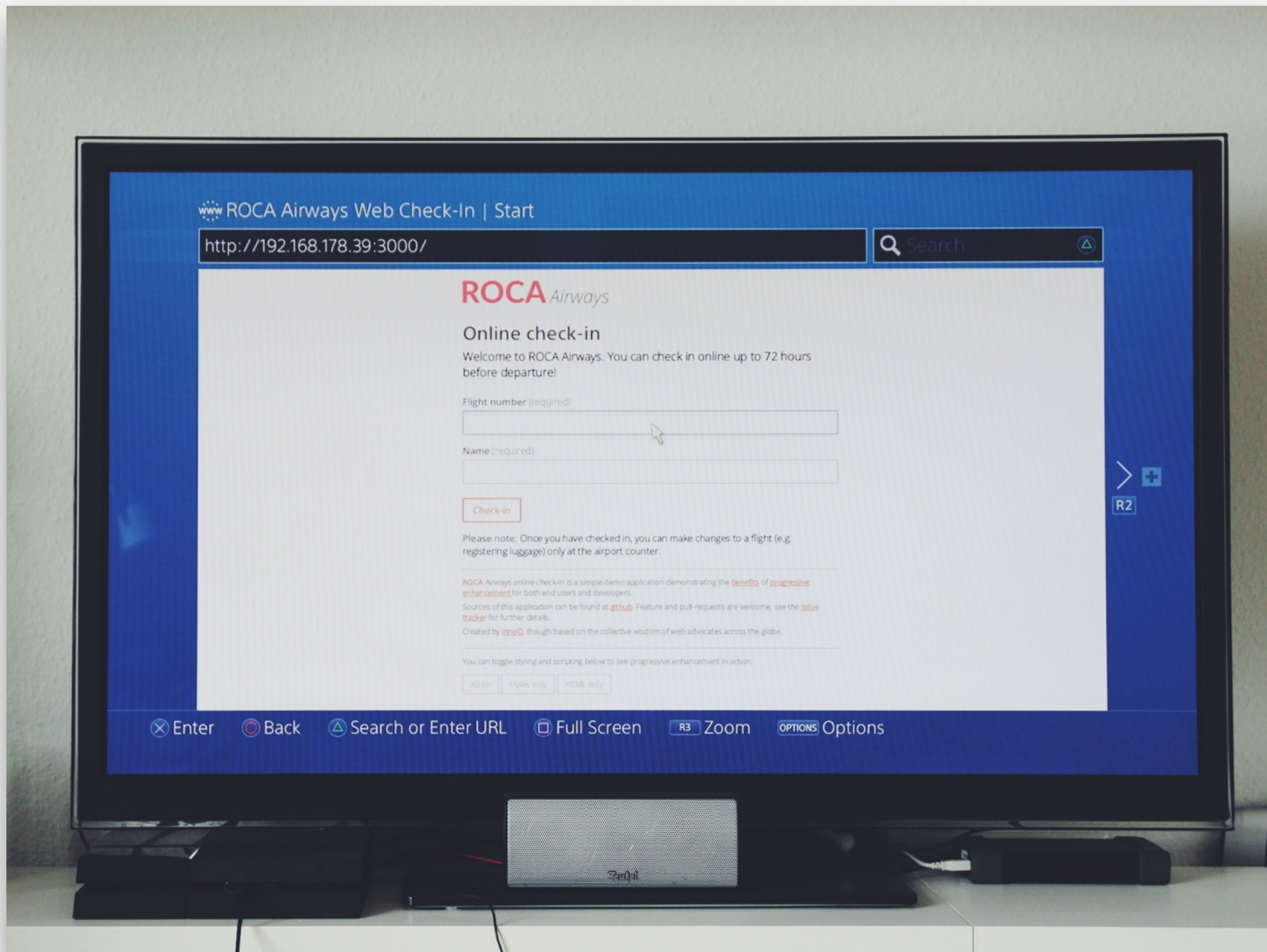 H)elp O)ptions P)rint G)o M)ain screen Q)uit /=search [delete]=history list

WORKS
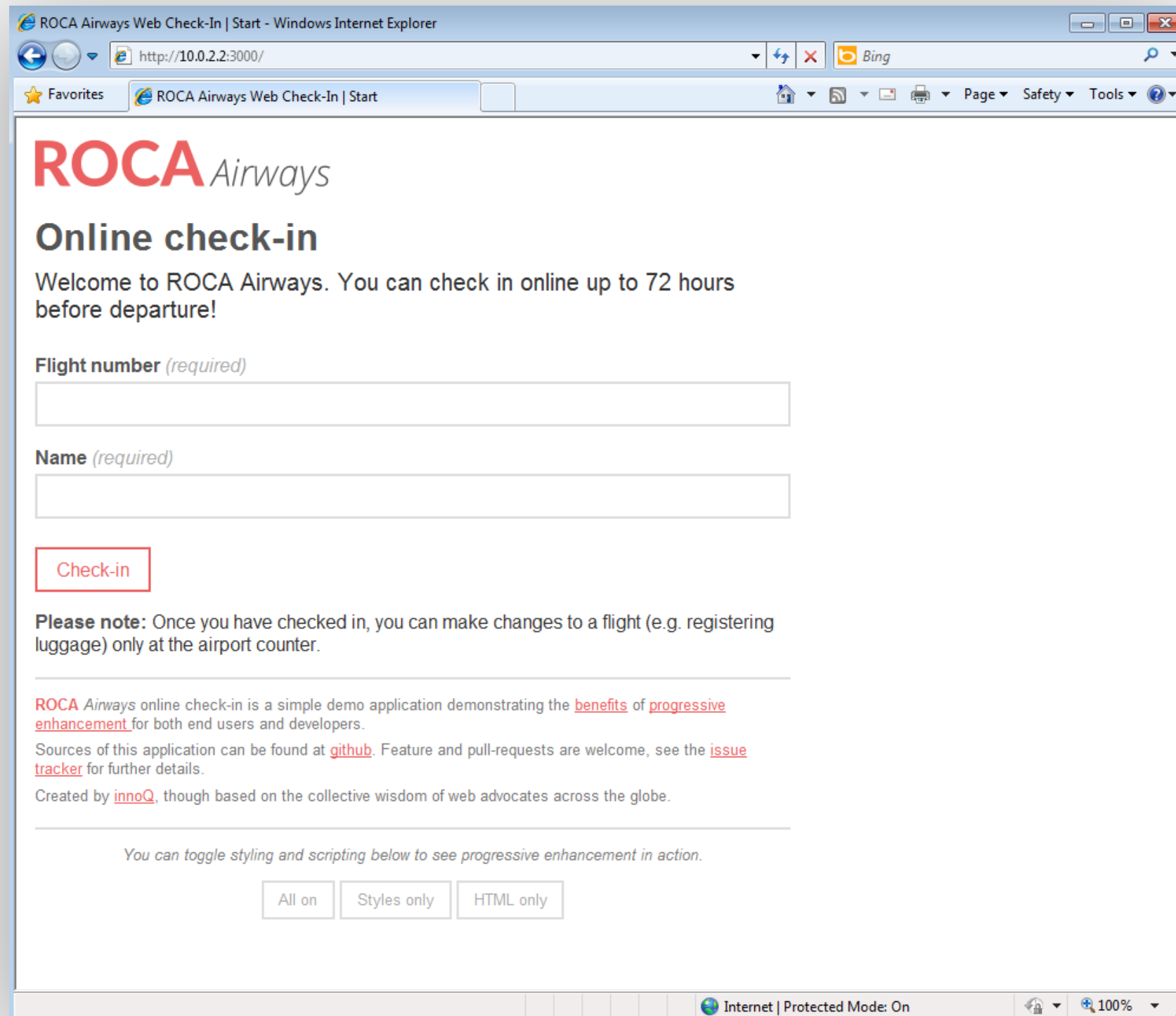
WORKS
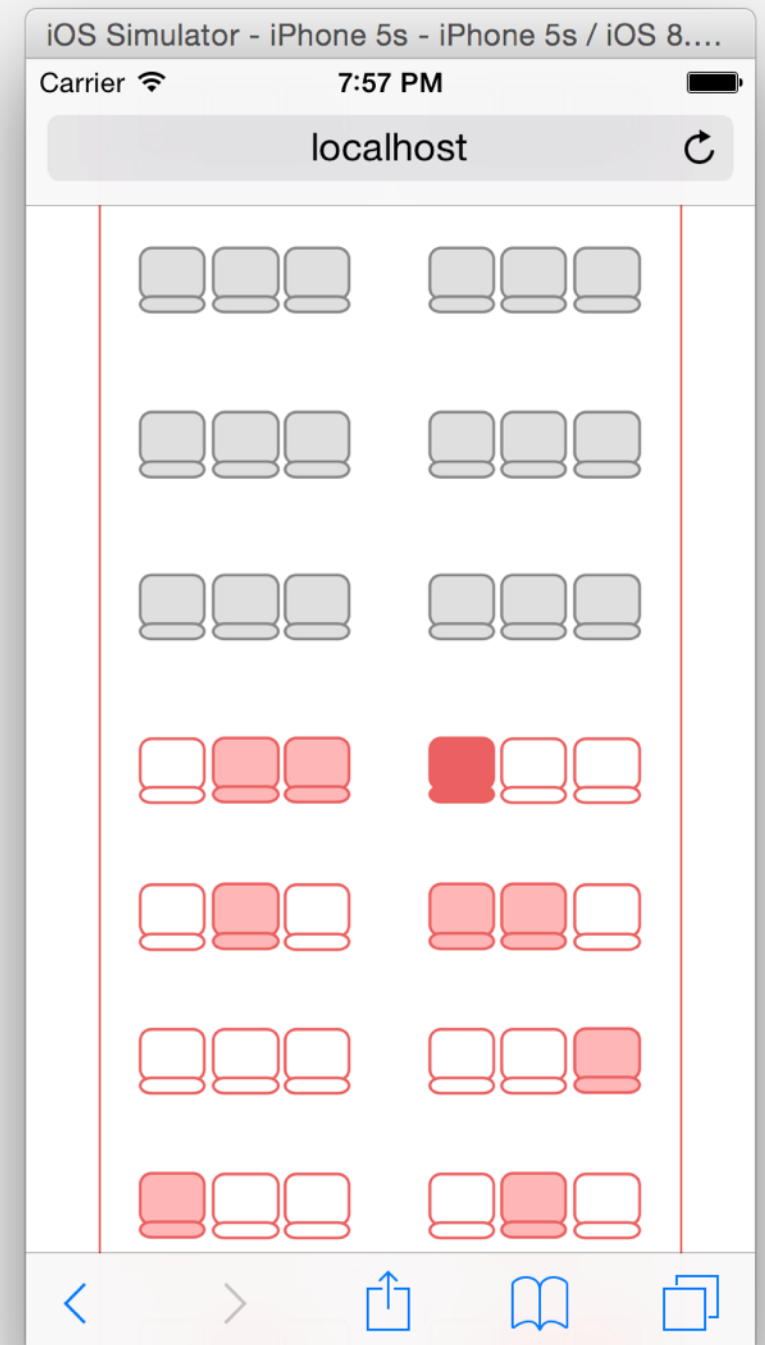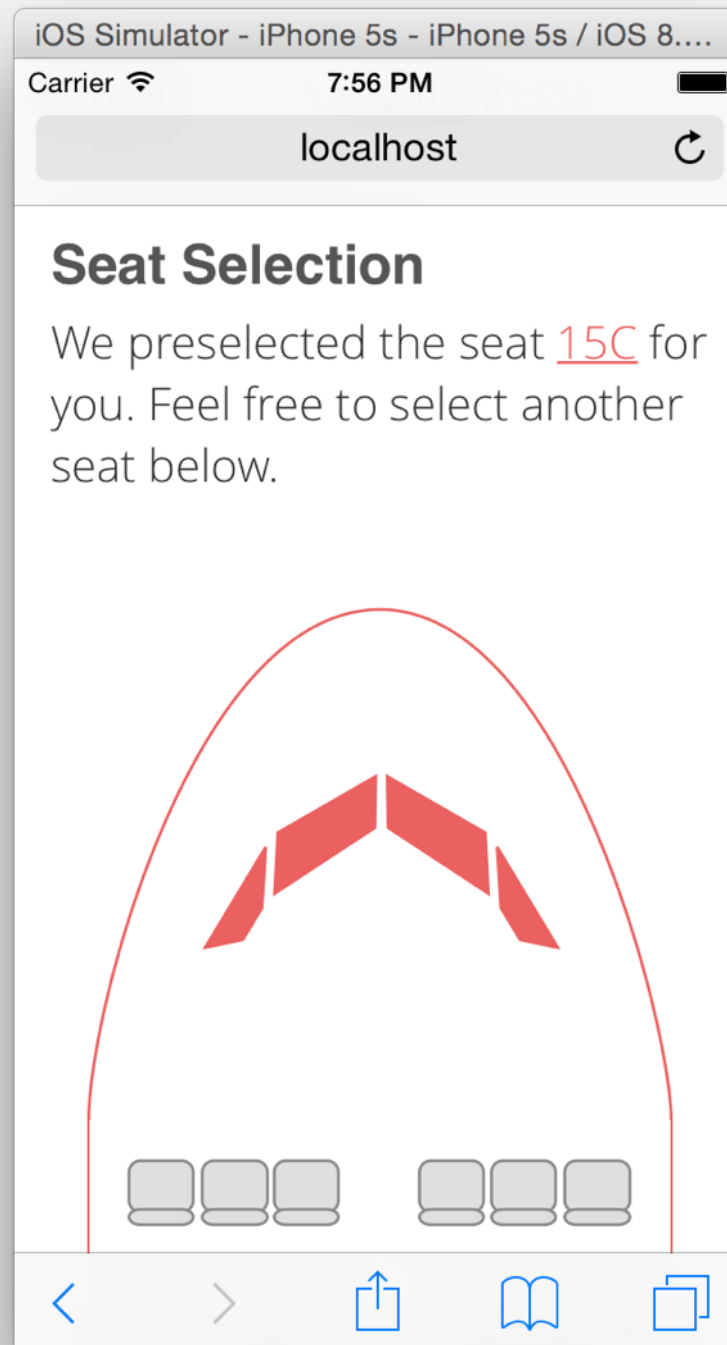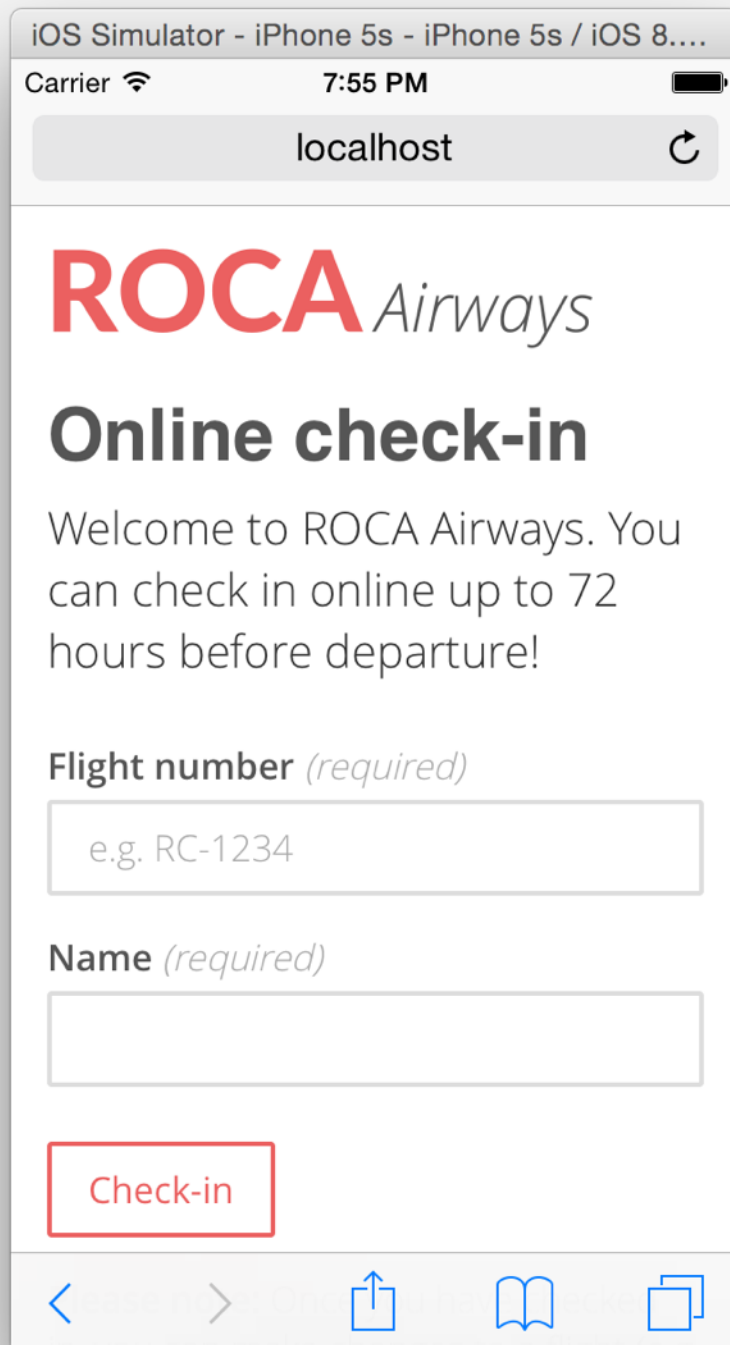
WORKS

KTHXBYE

@rstrangh

roman.stranghoener@innoq.com

RESOURCES

Designing with progressive enhancement

by Filament Group

https://www.gov.uk/service-manual/making-
software/progressive-enhancement

http://jakearchibald.com/2013/progressive-
enhancement-still-important/

http://alistapart.com/article/
understandingprogressiveenhancement