

Quit wasting time and start building Progressive Web Apps

Bryan Soltis

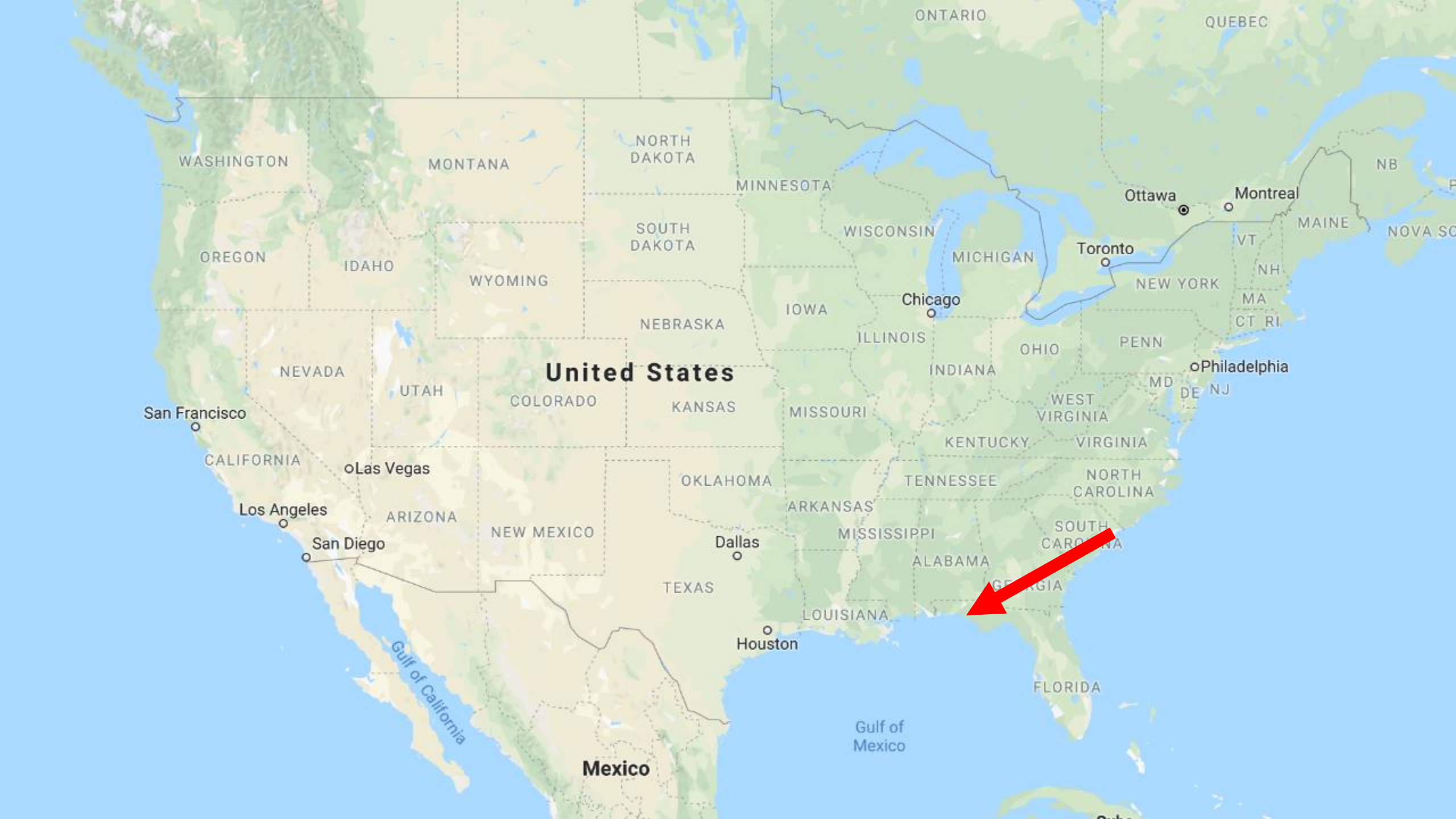
Microsoft Azure MVP

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PWA





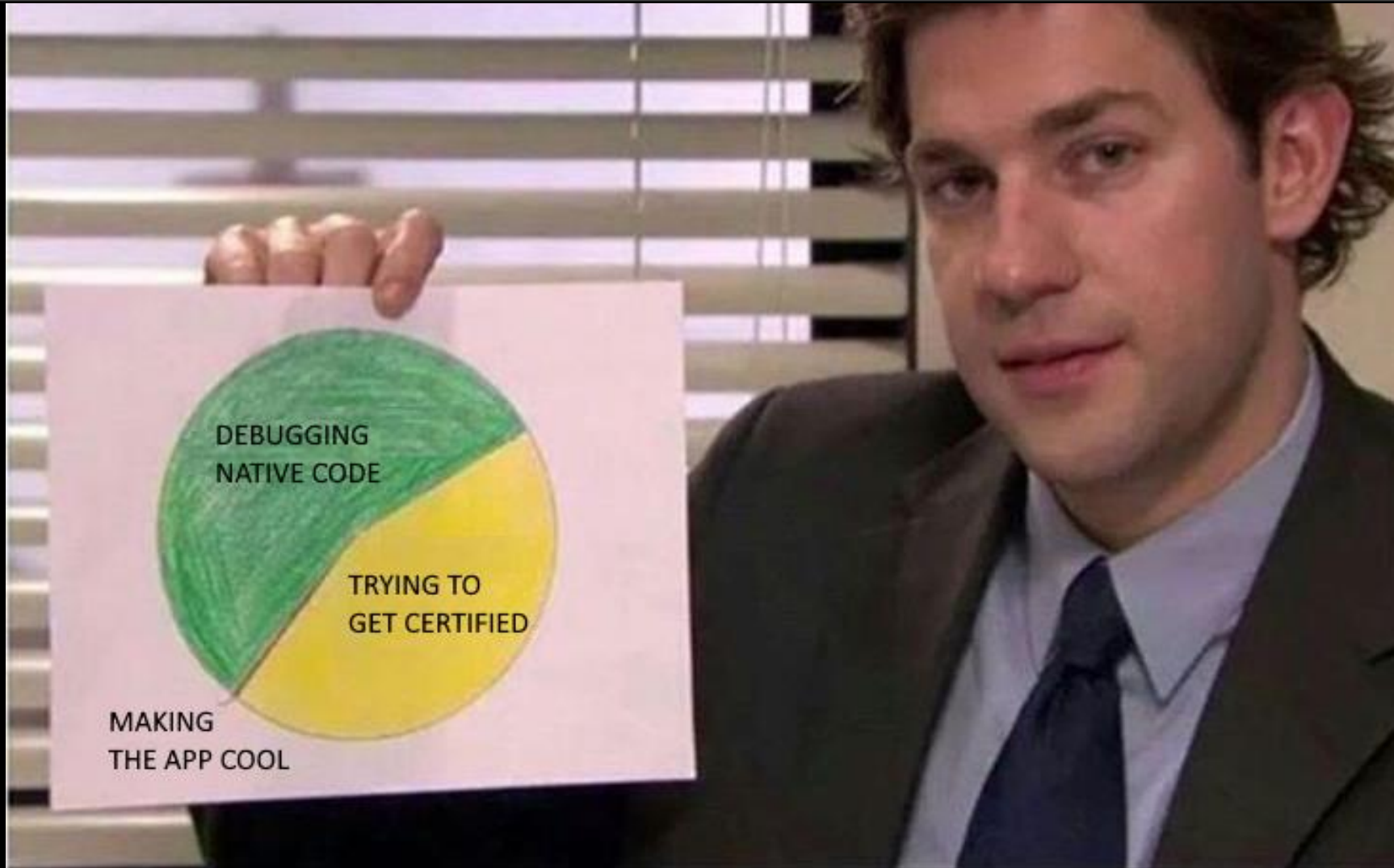


DO YOU STRUGGLE TO KNOW WHAT
KIND OF DEV YOU ARE?

A man in a dark suit and patterned tie has a large white lampshade balanced on his head. He is in a festive indoor setting, possibly a Christmas party, with other people in the background. One man behind him is wearing a green hat and has a surprised expression. To the right, another man is holding a silver digital camera up to take a picture. The scene is lit with warm indoor lights and colorful decorations are visible in the background.

DO YOU HAVE TO WEAR DIFFERENT
HATS JUST TO MAKE AN APP?

DOES THIS DESCRIBE YOUR MOBILE APP DEVELOPMENT EXPERIENCE?



THE ANSWER?





Overview

Progressive

Responsive

Connection Handling

App experience

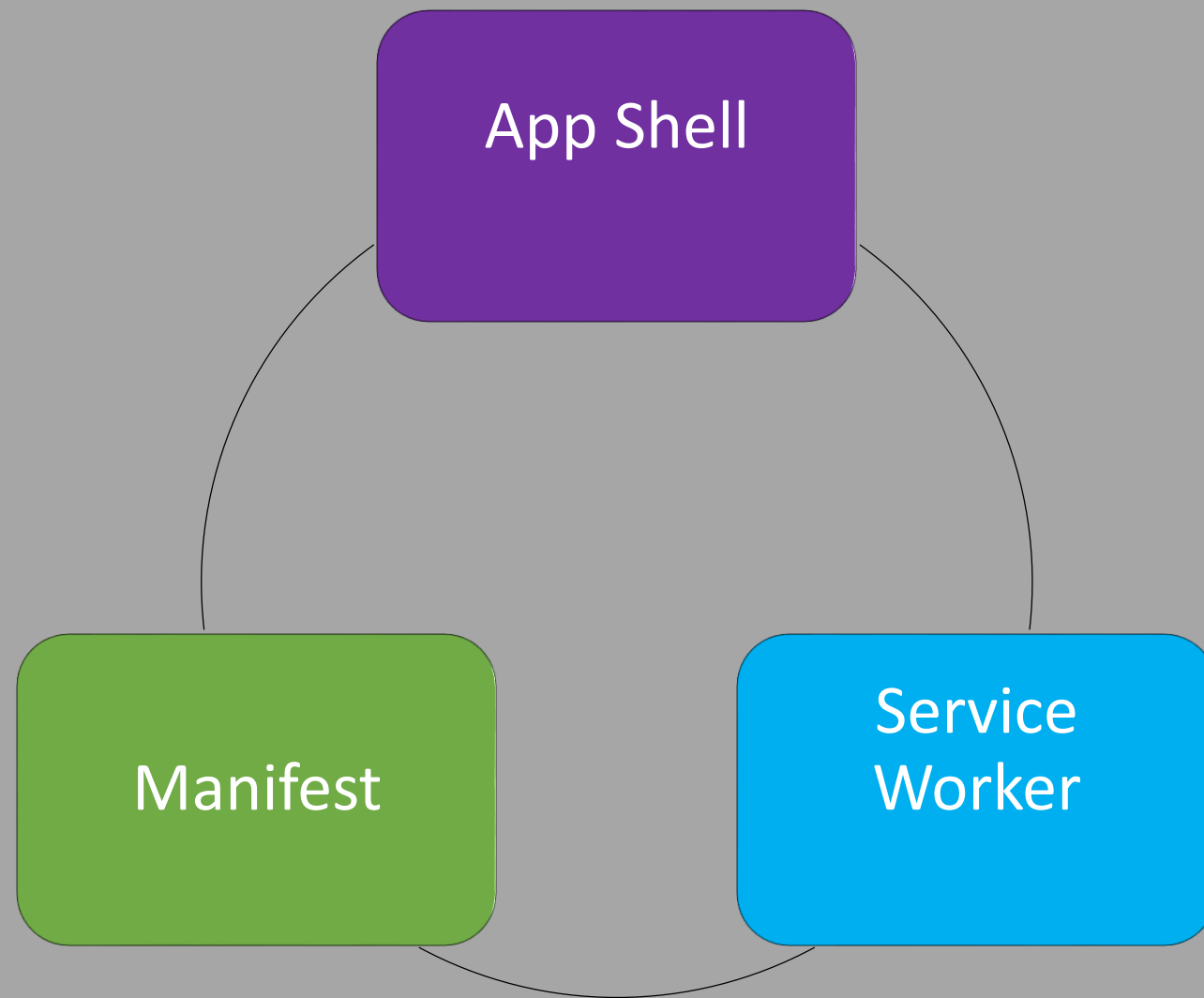
Fresh

Secure

Simple installation



Architecture





Performance

Connection

Offline
Asset loading
Smart updates

Caching

CacheFirst
NetworkFirst
NetworkOnly
StaleWhileRevalidate



Content

Flexible

Adaptable

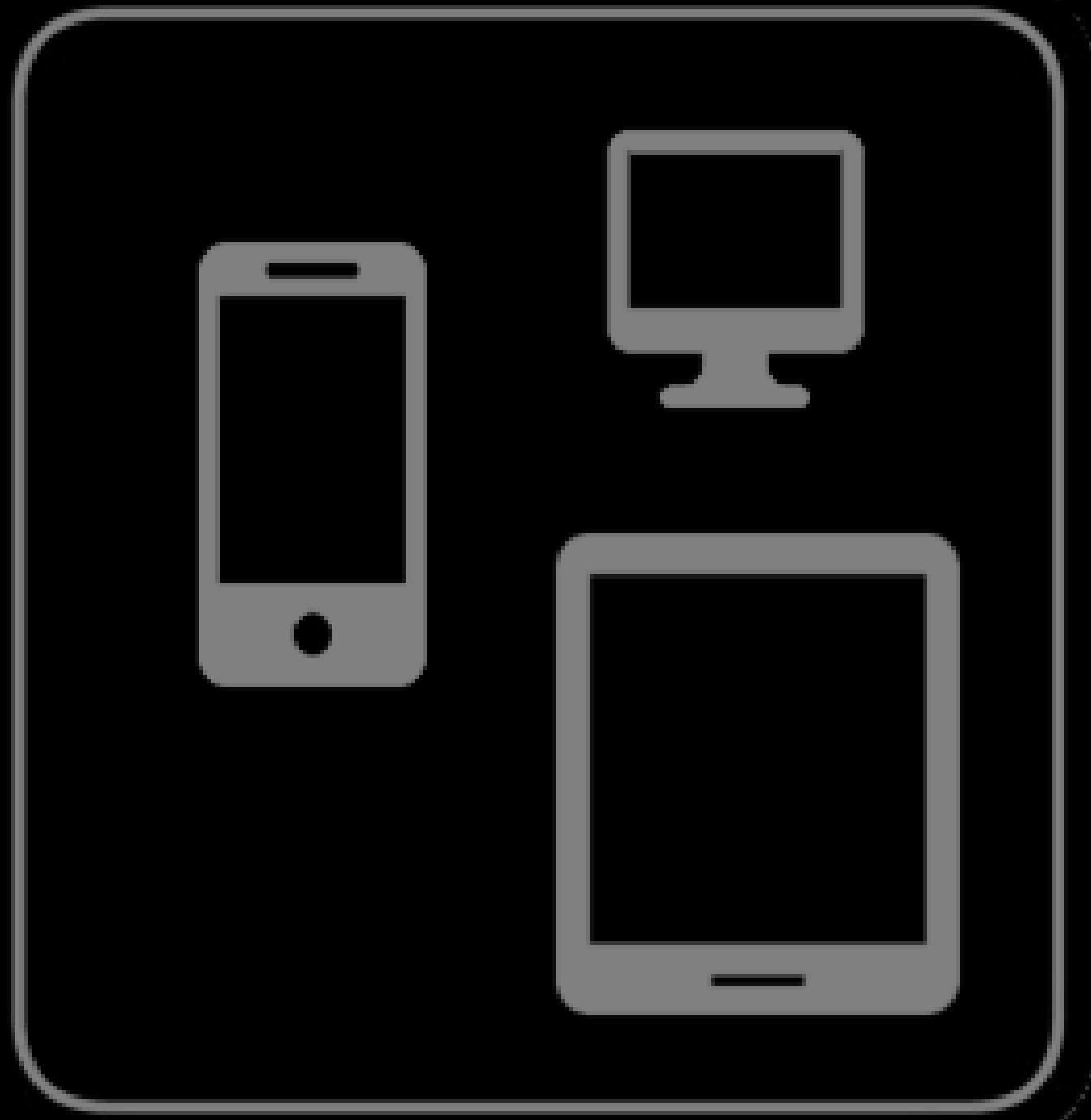
Microservice

Reusable

Universal

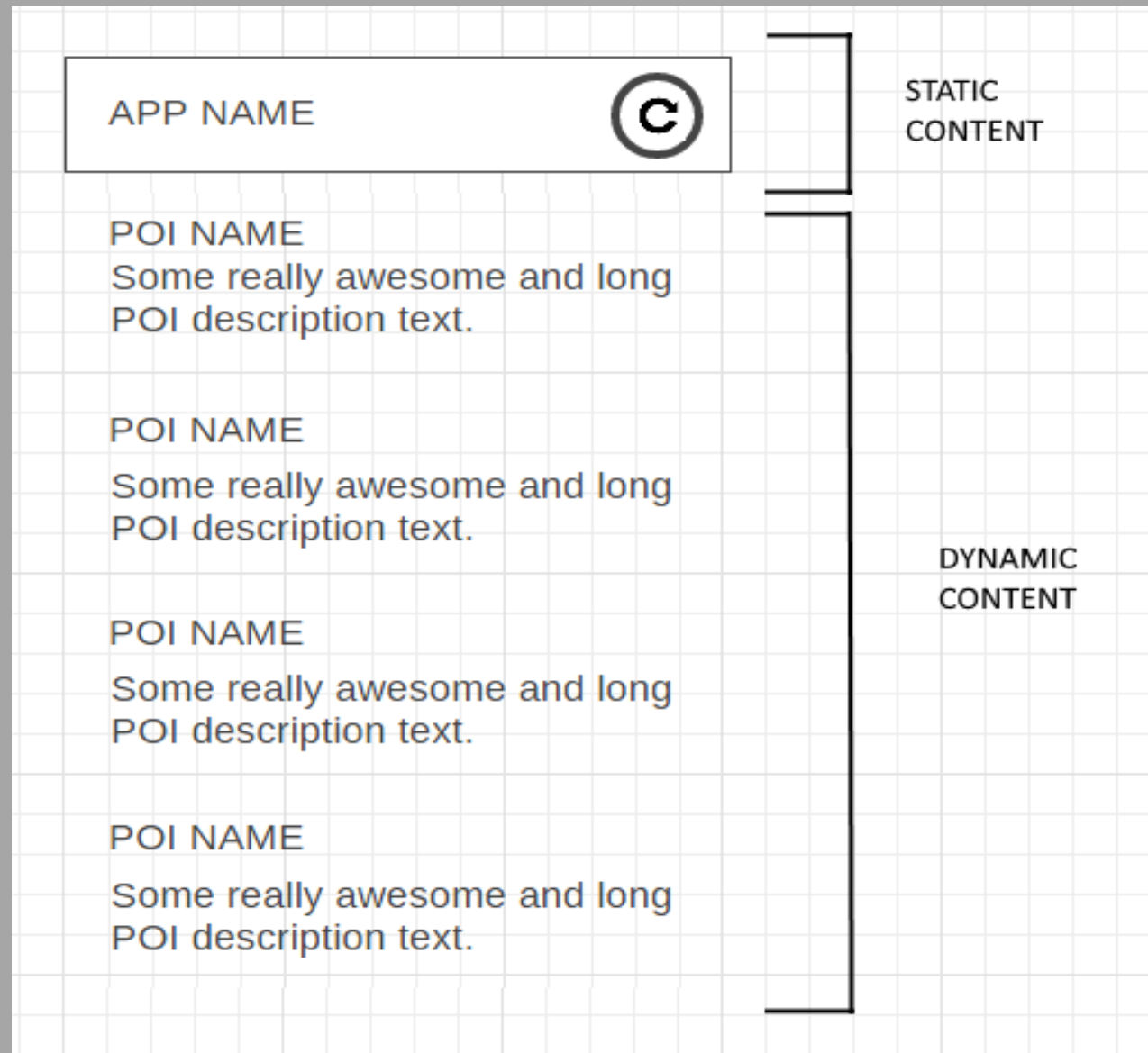
The Kentico Cloud Sample App

PWA

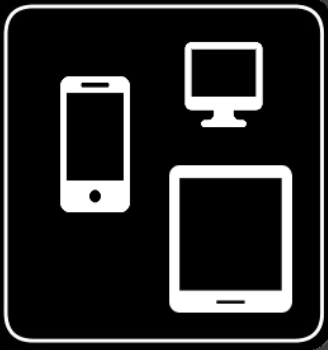




Architecture



PWA



Content

Points of Interests > Content models > Content types > Point of Interest

Kentico plan Bryan Soltis

< Point of Interest

FRIENDLY WARNING
Content type is used with published content
You are about to make changes to the content type that is used with published content.
Keep in mind that any change you will make to this content type may affect how your published content is displayed on your website or mobile app.

Text Generates URL slug

Title

Write optional guidelines for this element

Number

Latitude (decimal degrees)

Write optional guidelines for this element

Number

Longitude (decimal degrees)

Write optional guidelines for this element

Number

Elevation (ft)

Write optional guidelines for this element

Asset

Pictures

You can include assets in a Content item via this content element. The assets you upload are automatically part of the project's Asset library.

Write optional guidelines for this element

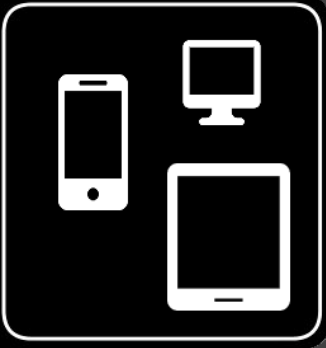
CONTENT ELEMENTS

- Text
- Rich text
- Number
- ☒ Multiple choice
- Date & time
- Asset
- Modular content

AUXILIARY ELEMENTS

- Guidelines
- Taxonomy
- URL slug
- Content type snippet

PWA



Service Worker

```
service-worker.js - cloud-sample-pwa-app-1-introduction - Visual Studio Code [Administrator]
File Edit Selection View Go Debug Tasks Help

EXPLORER
└─ OPEN EDITORS
   └─ JS service-worker.js src\public
└─ CLOUD-SAMPLE-PWA-APP-1-INTRODUCTI...
   └─ src
      └─ public
         ├── assets
         ├── styles
         ├── browserconfig.xml
         ├── {} manifest.json
         ├── JS service-worker.js
         └─ scripts
            ├── index.html
            ├── JS index.js
            ├── .babelrc
            ├── .gitignore
            ├── CODE_OF_CONDUCT.md
            ├── CONTRIBUTING.md
            ├── LICENSE
            ├── {} package-lock.json
            ├── {} package.json
            ├── README.md
            └── webpack.config.js

JS service-worker.js x
1  var dataCacheName = 'packAndGoData-v1';
2  var cacheName = 'packAndGoApp-v1';
3
4  var filesToCache = [
5    '/',
6    '/index.html',
7    '/main.js',
8    '/manifest.json',
9    '/styles/fonts/RobotoMedium.eot',
10   '/styles/fonts/RobotoMedium.svg',
11   '/styles/fonts/RobotoMedium.ttf',
12   '/styles/fonts/RobotoMedium.woff',
13   '/styles/fonts/RobotoMedium.woff2',
14   '/styles/style.css',
15   '/assets/images/icon_refresh.svg'
16 ];
17
18 self.addEventListener('install', function (e) {
19   console.log('[ServiceWorker] Install');
20   e.waitUntil(
21     caches.open(cacheName).then(function (cache) {
22       console.log('[ServiceWorker] Caching app shell');
23       return cache.addAll(filesToCache);
24     })
25   );
26 });
27
28 self.addEventListener('activate', function (e) {
29   console.log('[ServiceWorker] Activate');
30   e.waitUntil(
31     caches.keys().then(function (keyList) {
32       return Promise.all(keyList.map(function (key) {
33         if (key !== cacheName && key !== dataCacheName) {
34           console.log('[ServiceWorker] Removing old cache', key);
35           return caches.delete(key);
36         }
37       }));
38     })
39   );
40   /*
```

PWA



Manifest

```
manifest.json - cloud-sample-pwa-app-1-introduction - Visual Studio Code [Administrator]
File Edit Selection View Go Debug Tasks Help

EXPLORER
└─ OPEN EDITORS
  └─ {} manifest.json src\public
└─ CLOUD-SAMPLE-PWA-APP-1-INTRODUCTION
  └─ src
    └─ public
      └─ assets
      └─ styles
      └─ browserconfig.xml
    {} manifest.json
    JS service-worker.js
    └─ scripts
    < index.html
    JS index.js
    .babelrc
    .gitignore
    CODE_OF_CONDUCT.md
    CONTRIBUTING.md
    LICENSE
    package-lock.json
    package.json
    README.md
    webpack.config.js

{} manifest.json x
1 {
2   "name": "Pack and Go",
3   "short_name": "packandgo",
4   "theme_color": "#1564bf",
5   "background_color": "#e1e2e1",
6   "display": "standalone",
7   "Scope": "/",
8   "start_url": "/",
9   "icons": [
10    {
11      "src": "\assets\images\icons\android-icon-36x36.png",
12      "sizes": "36x36",
13      "type": "image/png",
14      "density": "0.75"
15    },
16    {
17      "src": "\assets\images\icons\android-icon-48x48.png",
18      "sizes": "48x48",
19      "type": "image/png",
20      "density": "1.0"
21    },
22    {
23      "src": "\assets\images\icons\android-icon-72x72.png",
24      "sizes": "72x72",
25      "type": "image/png",
26      "density": "1.5"
27    },
28    {
29      "src": "\assets\images\icons\android-icon-96x96.png",
30      "sizes": "96x96",
31      "type": "image/png",
32      "density": "2.0"
33    },
34    {
35      "src": "\assets\images\icons\android-icon-144x144.png",
36      "sizes": "144x144",
37      "type": "image/png",
38      "density": "3.0"
39    },
40  ]
}
```






Pros / Cons

PROS

- Do not require installation
- Provides native-app experience
- High portability
- Easy updates
- More user engagement

CONS

- Not supported in all browsers
- Not all features supported
- Hardware limited by device
- Increased battery usage
- Limited presence in app stores



Learn more

Your First Progressive Web App

<https://developers.google.com/web/fundamentals/codelabs/your-first-pwapp/>

Creating a Progressive Web App with a Headless CMS (series)

<https://hackernoon.com/creating-a-progressive-web-app-with-a-headless-cms-part-1-85ede9dba59b>

6 myths of Progressive Web Apps

<https://medium.com/samsung-internet-dev/6-myths-of-progressive-web-apps-81e28ca9d2b1>

Why should you care about Progressive Web Apps (PWAs)?

<https://codeburst.io/why-should-you-care-about-progressive-web-apps-pwas-3c3f73cb8c92>

Pack and Go (cloud-sample-pwa-app) GitHub

<https://github.com/Kentico/cloud-sample-pwa-app>



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Do it!

Progressive

Responsive

Connection Handling

App experience

Fresh

Secure

Simple installation

