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From Legacy to  
*Progressive Web App*  
in just a few steps

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Paulo Virote



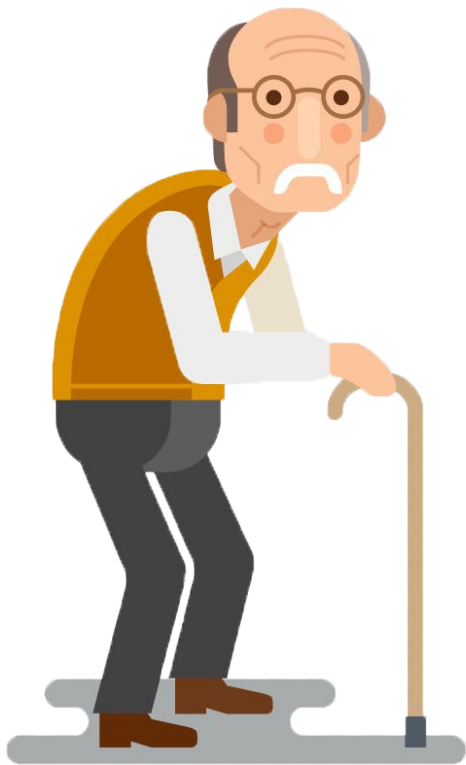
isobar  
IWS Brazil



A scenic mountain landscape with a turquoise lake, rocky terrain, and a tree with autumn foliage. The scene is captured during the golden hour, with warm light illuminating the mountains and the sky. The text is centered over the image, framed by two horizontal lines.

## Chapter I

# *The legacy*



## The legacy

- Active for over 40 markets 🤪
- .NET environment using razor 😐
- Bunch of **Bower Components** 😐
- jQuery land 😞
- A single **app.js** file 😞

A scenic landscape featuring a range of mountains in the background, some with snow-capped peaks. In the foreground, there is a calm lake reflecting the sky and mountains, surrounded by a dense forest of evergreen trees. The sky is filled with soft, colorful clouds, suggesting a sunset or sunrise.

## Chapter II

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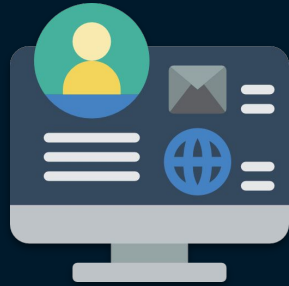
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# *The basics*

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# The basics

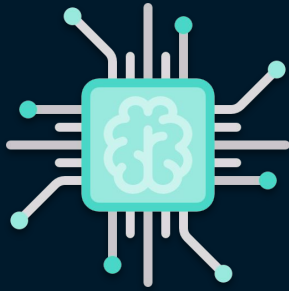


**Web**



**App**

# The basics



**Service  
Worker**



**App**



**Manifest**



## Chapter III

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# *The manifest*

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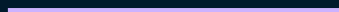


# Manifest

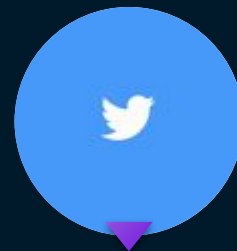
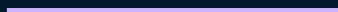
.JSON



Set the  
homescreen  
icon for the  
PWA



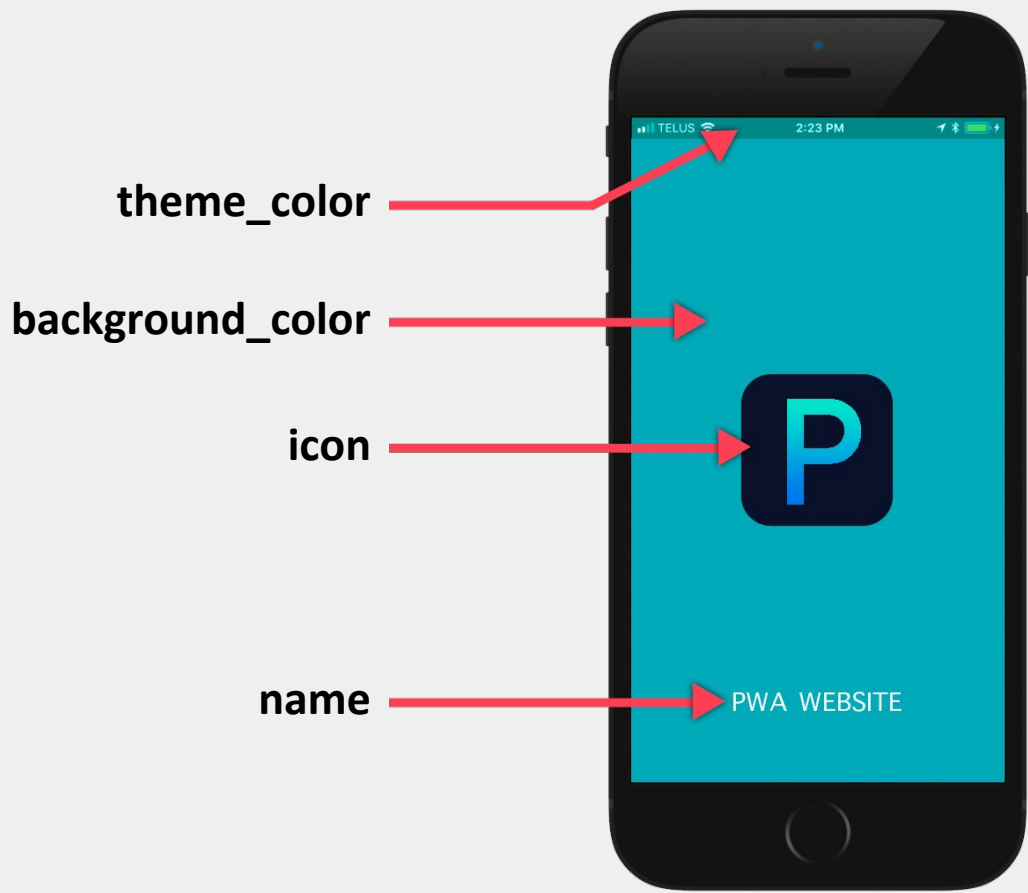
Helps you set  
default colors for  
some parts of the  
screen



Allows you  
to have a splash  
screen to increase  
the app-like feel

# Code - manifest.json

```
{  
  "background_color": "#00AABA",  
  "display": "standalone",  
  "name": "MyApp - PWA Testing",  
  "short_name": "MyApp",  
  "theme_color": "#008889",  
  "icons": [{  
    "src": "icon/logo.png",  
    "sizes": "72x72 96x96 128x128 256x256 512x512"  
  }]  
}
```





Chapter IV

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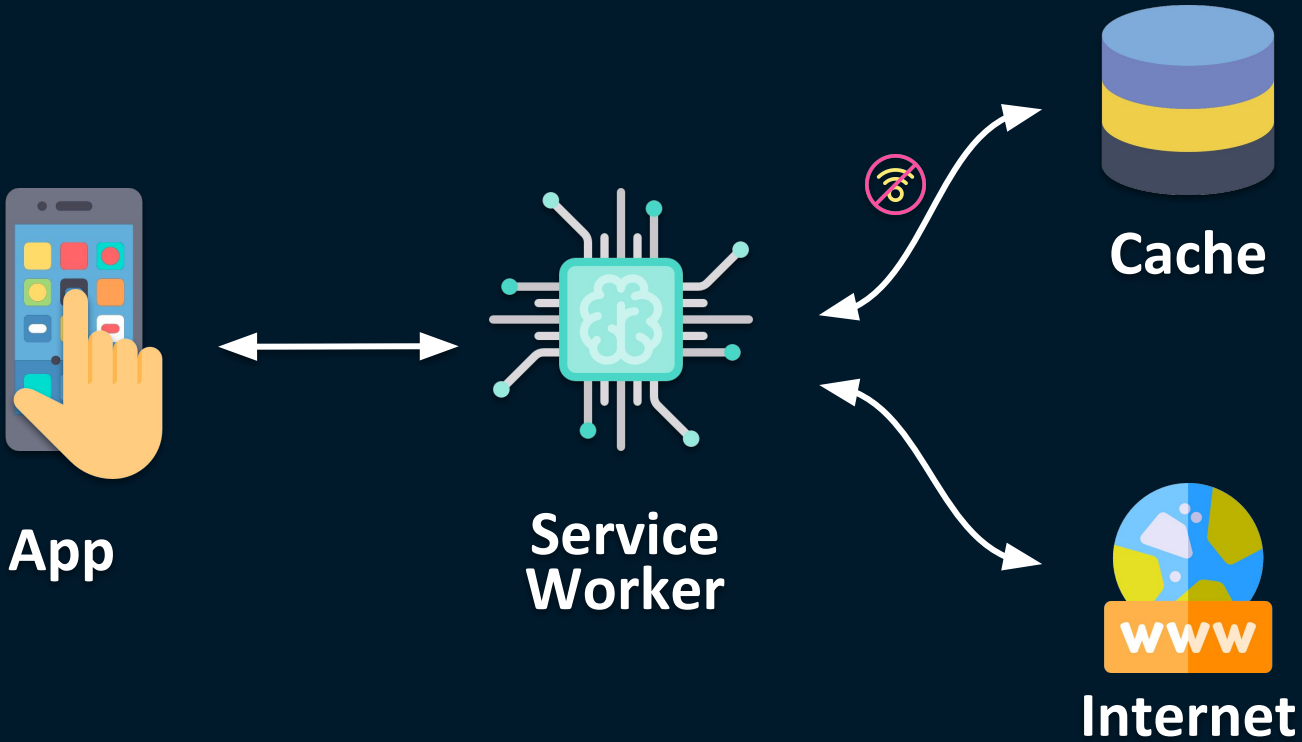
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*The worker*

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# The worker



# Code - HTML

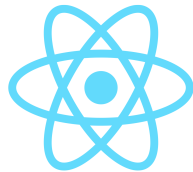
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```
<script>
// Register Service Worker
if ('serviceWorker' in navigator) {
    window.addEventListener('load', () => {
        navigator.serviceWorker.register('/sw.js');
    });
}
</script>
```

# Alternatives



**PWA Builder**



**CRA**

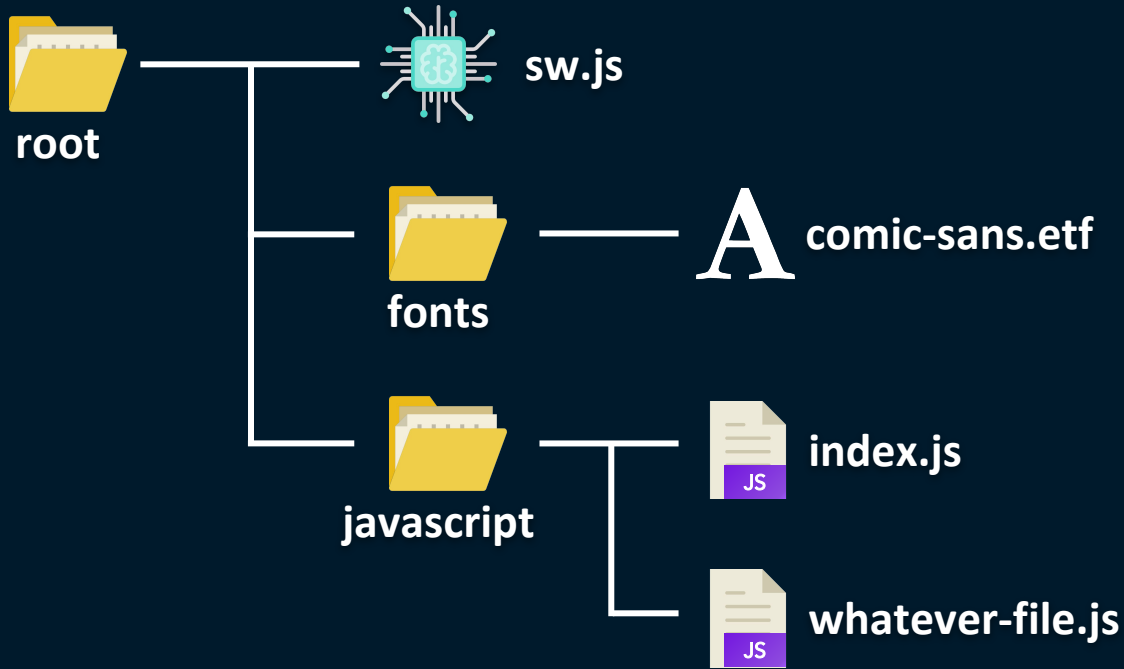


**Vue CLI**

# Scope

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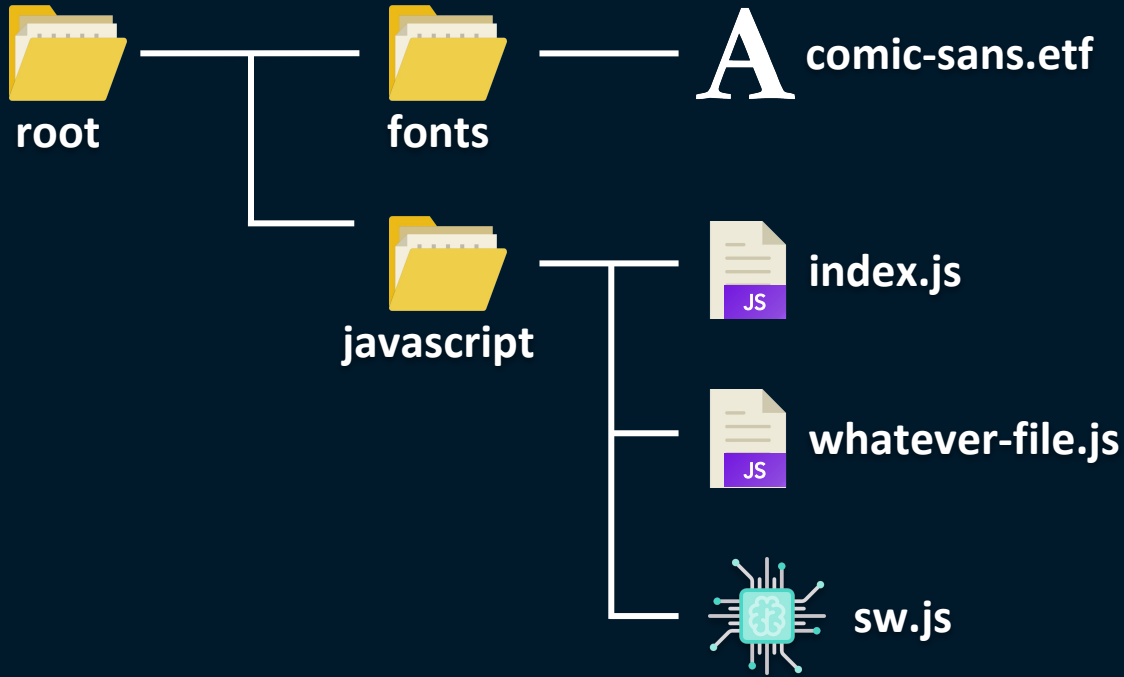




# Scope

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Chapter V

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*The cache hell*

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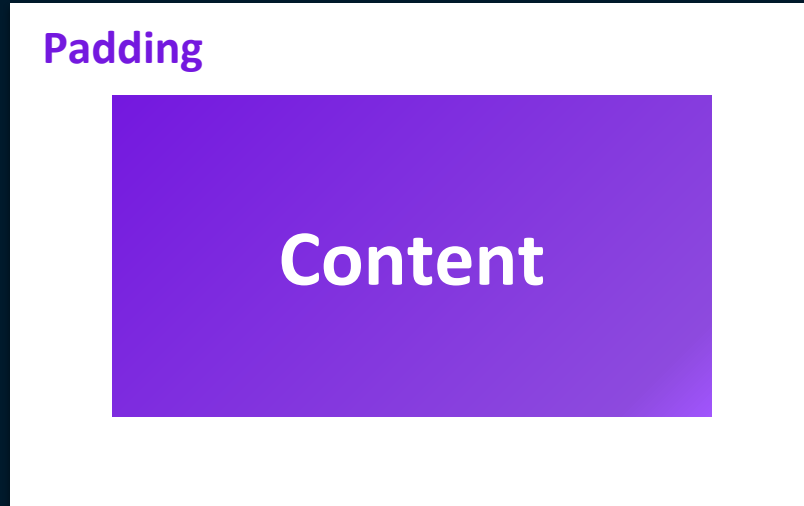
## The cache hell

- JS and CSS ✓
- Markup (HTML) ✓
- Images (tons of images) ✓
- Every dust on Earth ✓ 💩

~117  
**MB**  
of cache

# Opaque Response

# Content Padding



# Content Padding

Padding

Content

Cache  
Storage



Service  
Worker







Chapter VI

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*The workbook*

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Google



Workbox

# Code - index.html

```
<script>
// Register Service Worker
if ('serviceWorker' in navigator) {
    window.addEventListener('load', () => {
        navigator.serviceWorker.register('/sw.js');
    });
}
</script>
```

## Code - sw.js

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```
importScripts('https://storage.googleapis.com/workbox-cdn/releases/3.6.1/workbox-sw.js');
```

```
if (workbox) {  
    console.log('Yay! Workbox is loaded');  
} else {  
    console.log('Boo! Workbox didn't load');  
}
```

# Code - sw.js

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```
// Caching JS files
workbox.routing.registerRoute(
  new RegExp('.*\\.js'),
  workbox.strategies.networkFirst( );
);
```

# Code - sw.js

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```
workbox.routing.registerRoute(
  /\.*\.(?: png | jpg | jpeg | svg | gif )/,
  workbox.strategies.networkFirst( {
    cacheName: 'image-cache',
    plugins: [
      new workbox.expiration.Plugin( {
        maxEntries: 20,
        maxAgeSeconds: 7 * 24 * 60 * 60
      } )
    ]
  } );
);
```



Chapter VII

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*The improvement*

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**7**  
**MB**  
*of cache*



# Improvements



Apple devices  
need a kind of  
special care



Lazy loading with  
proper fallbacks to  
make the offline  
version lighter



Offline page if you  
can't display  
anything without  
internet connection



# How we turned our legacy system into a Progressive Web App (PWA)

A complete how-to on going from a legacy system to a cutting edge Progressive Web App



Paulo Virote de Souza

Aug 7 · 17 min read



